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THE

LONDON MEDICAL DICTIONARY;

INCLUDING UNDER DISTINCT HEADS

EVERY BRANCH OF MEDICINE,

VIZ.

ANATOMY, PHYSIOLOGY, AND PATHOLOGY,

THE PRACTICE OF PHYSIC AND SURGERY,

THERAPEUTICS, AND MATERIA MEDICA;

WITH WHATEVER RELATES TO MEDICINE IN

NATURAL PHILOSOPHY, CHEMISTRY,

AND

NATURAL HISTORY.

BY BARTHOLOMEW PARR, M. D.

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Creditur, ex medio quia res arcessit, habere
Sudoris minimum; sed habet ———— tanto
Plus oneris, quanto veniæ minus. HOR.

Lexica contexat, nam cætera quid moror, omnes
Pœnarum species, hic labor unus habet.
SCALIGER.

VOL. II.

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A NEW

MEDICAL DICTIONARY.

IA'MBLICHI SA'LES; from IAMBLICHUS, the inventor. A preparation with sal ammoniac, some aromatic ingredients, &c.

IATRALEI'PTES, (from ιατρος, *a physician*, and αλειφω, *to anoint*). A physician who cures diseases by ointments and frictions.

IATROCHY'MICUS, (from ιατρος, *a physician*, and χυμια, *chemistry*). See CHEMIATER.

IATROLI'PTICE. The method of curing disease by unction and friction.

IATROPHY'SICUS. A philosopher who treats of medicine as a branch of philosophy.

I'BA. See ANINGA.

IBE'RIS, (from *Iberia*, where it flourishes). CARDIMANTICA, or SCIATICA-CRESSES; *lepidium iberis* Lin. Sp. Pl. 900. See LEPIDIUM and CARDAMINES.

IBE'RIUS. See LEPIDIUM GRAMINIS FOLIO.

IBIBIRA'BA. A berry-bearing tree in Brasil: a water distilled from its flowers and leaves is used in inflammations of the eyes. See Raii Historia.

IBI'RA. A tree in Brasil, whose fruit, when dried, is used instead of pepper. Neither this nor the former plant is found in the modern systems. See Raii Historia.

IBIRA'CE. See GUAIACUM.

IBI'RA-PITA'NGA. See LIGNUM BRASILIUM.

IBI'SCUS, HIBISCUS, q. v. MARSH-MALLOW. See ALTHÆA, and ALTHÆA THEOPHRASTI.

IBI'XUMA, (from ιβισκος, *the mallow*, and ιξος, *glue*; from having a glutinous leaf like the mallow). See SAPONARIA.

ICE, used as a means of abstracting heat in hernia, hæmorrhage, and many other chirurgical diseases.

I'CHOR; (Greek ιχωρ); *sanies*; a bloody, thin, but acrid fluid, which distils from wounds.

I'CHTHYA, (from ιχθυς, *a fish*). The name of a hook for extracting the fœtus; from its likeness to a fish-hook; or *raspings*, according to Erotion.

ICHTHYE'MATA, (from ιχθυα, *the scale of a fish*). The scales of fishes, and the raspings of the bark of trees.

ICHTHYOCO'LLA, (from ιχθυς, *fish*, and κολλα, *glue*). ISINGLASS; *colla piscium*; *alcanna*; and *huso*; FISH-GLUE, is a solid glutinous substance, prepared in Muscovy from the sturgeon. The skins and fins are boiled in water; the decoction inspissated to a due consistence, and poured out so as to form very thin cakes, which are either dried in that form, or cut while soft into slices, and rolled up into spiral and other shapes. A finer kind is, it is said, prepared by rolling up the air bladders of the accipenser struthio. That which is clear, thin, and almost transparent, is the best. See Philosophical Transactions, vol. lxiii.

It is one of the finest of the animal glues, without smell or taste. When beat into shreds it readily dissolves in water or milk, forming a mild, nutritious, restorative aliment; as well as a remedy in the fluor albus, continued diarrhœas, and other evacuations from debility. Its solution in water or spirit, if nicely spread upon silk, is an elegant plaster for slight injuries to the skin; and, joined with some resins, it is called *court-plaster*. (See EMPL. ADHÆSIVUM NIGRUM.) It is said to agree with the gum-tragacanth in medicinal virtues; but, like all other animal mucilages, it soon runs into a state of putrefaction, and becomes more irritating than the vegetable mucilages. Hollow cylinders of isinglass are employed to support the sides of a divided intestine, when united by a suture. A passage is thus left for the contents, which by a solution of the isinglass is gradually enlarged till the wound is healed. See Lewis's Materia Medica; Neumann's Chemical Works; Cullen's Materia Medica.

ICHTHYOSIS, (from ιχθυα, *the scale of a fish*, which it resembles). A harsh, dry, scaly, and almost horny texture of the skin, differing from leprosy by its not falling off in branny scales. Above and below the elbow and knee, Dr. Willan observes, that the scales are small, rounded, and papillary, of a black colour: the pa-

pillæ have short narrow necks, with broad irregular tops. On the rest of the body they are large and imbricated, sometimes divided by whitish furrows. The soles of the feet are dry and rough; the palms of the hands thickened and brittle, with large painful fissures, and the face is covered with bran rather than scales. The inner part of the wrists and hams, the inside of the elbow, and the furrow along each side of the spine, the inner and upper part of the thigh, are usually free. Some perspiration is necessary; and this seems occasionally to produce inflamed pustules. The disease appears to be constitutional, not hereditary. Two cases of a horny ichthyosis impeding the motion of the muscles are described in the 68th volume of the Philosophical Transactions.

I'CICA, and ICICA'RIBA. GUM ELEMI. See ELEMI.

I'CON. A figure: the abbreviation of icones plantarum; botanical plates.

ICOSA'NDRIA, (from εικοσι, *twenty*, and ανηρ, *a husband*). The names of the twelfth class of the Linnæan system, comprehending those plants which have hermaphrodite flowers, with twenty or more stamina, growing on the inside of the calyx, not on the receptacle. The situation, and not the number, of stamina is chiefly to be attended to. The calyx is also monophyllous and concave in this class; and the claws of the petals are fixed into the inside of the calyx.

ICTERO'DES, (from ικτερος, *the jaundice*). The BILIOUS ARDENT FEVER. See BILIOSA FEBRIS.

ICTERI'TIÆ, (from *icterus, the jaundice*). DISCOLORATIONS, or diseases which occasion an unusual colour of the whole skin without acute fever.

I'CTERUS, (from ικτερος, *the golden thrush*, from the complexion of the patient resembling in colour the plumage of that bird. Pliny ridiculously observes, that if the jaundiced person looks on this thrush, the bird dies, and the patient recovers); the JAUNDICE, *morbus arquatus, aurigo, morbus regius, cachexia ecterica*, or *icteritia*; by Paracelsus, *lescoli morbus*. It is owing to an obstruction of the discharge of the bile into the bowels, and its return into the blood by the absorbents. Dr. Cullen places this disease in the class *cachexiæ* and order *impetigines*; defining it a yellowness of the skin and eyes; white fæces; the urine of a deep red, tinging a white rag of a yellow colour when dipped into it. The species are,

1. I'CTERUS CALCULO'SUS, when there is acute pain in the hypogastric region, which increases after eating, and when bilious concretions pass through the intestines.

2. I'CTERUS SPASMO'DICUS, without pain, and the yellowness of the skin happening after spasmodic diseases or affections of the mind.

3. I'CTERUS HEPATICUS, without pain, following a disease of the liver.

4. I'CTERUS GRAVIDARUM, arises during pregnancy, and disappears after delivery.

5. I'CTERUS INFA'NTUM, happens soon after their birth. A yellowness of the skin sometimes arises from a deficiency of the red particles of the blood, or the effusion of the serum. The appearance deceives common observers, but may soon be distinguished by an experienced eye. The yellow tinge of the urine will at once decide any doubt. Infants have a yellowness often independent of bile from the red effusion under the skin, assuming a yellow colour, after being partly absorbed. The true jaundice of infants probably arises from the hardened meconium obstructing the duct.

The genuine jaundice arises from an obstruction of the duct, by gall-stones, or viscid bile. Sydenham speaks of a symptomatic jaundice produced by hysteric symptoms; but this complaint is probably the icterus spasmodicus. The yellowness from the bite of a viper is not a species of jaundice. Women are generally more subject to this disease than men, either from a slower action of the intestines or from a more sedentary life.

The cause of the true jaundice is the bile mixing with the blood, in consequence of its obstruction from gall-stones, spasms, schirrus, and sometimes even from flatulence or a gravid uterus. A schirrous liver is the cause of the most fatal kind; and a jaundice is often a mark of a constitution wholly decayed: in such cases the liver is often schirrous. In a late publication Dr. Gottlieb Richter thinks it probable, that "the most common cause of jaundice is a stimulus or irritation acting upon the hepatic system, which prevents the afflux, secretion, and excretion of the bilious fluids; or, rather so deranges the circulation in the hepatic system, that the several parts do not reach their destined places, according to the laws of health, but are again mixed with the general mass." In proof of which he recites a case of a high degree of jaundice, where no gall-bladder was found; but, in its place, only a skinny substance of a very small size, without any cavity. "The whole liver was full of white concretions, apparently of the nature of calcarious earth, of different sizes, from that of a pea to that of a cherry, and which floated in water." In this case, however, though the bile formed was not collected, it was evidently obstructed, and of course absorbed. He confirms his opinion by the authority of Chaux, who, in the seventy-fourth volume of the Journal de Médecine, endeavours to show that the jaundice can be cured by sedatives alone; by that of Selle, who in his Medicina Clinica, p. 202, imputes the jaundice to a stimulus; and of Vogel, who, in his treatise on Jaundice, published at Wetzlar in 1791, has, he thinks, proved in a very convincing manner that the jaundice is occasioned by a state of irritation in the liver. See Richter's Medical and Surgical Observations.

These opinions were formerly common, but have long since been rejected; and jaundice is now very generally attributed to obstruction of the bile from the causes which distinguish the species. However, when the jaundice affects the habit, the skin and whites of the eyes are usually yellow, the excrements most frequently white, and the urine deposits a copious dark sediment. Besides these, an inactivity, anxiety, sickness, indigestion, uneasiness, or acute pain, at the pit of the stomach, itching in the skin, and other symptoms, occasionally attend. In general every function is disordered, for the bile mixes in part with every secreted fluid, except, perhaps, the milk; but the principal inconveniences arise from its obstruction, which prevents its action on the stomach and intestines.

When a schirrus of the liver, or the gall-duct, is the cause, a cure can scarcely be expected; and a hæmorrhage, which shows that the blood is both acrid and thin, is highly dangerous. In adults this disorder often

may continue many months without any considerable danger, but, in general, its duration for a long time shows that the obstructing cause is firmly impacted; and the injury which the bile, when again deposited, does to the digestive organs often occasions an incurable dyspepsia, or a chronic debility, with a general dissolution of the fluids. After a fit of jaundice has disappeared, another slight one will often follow, which yields with little difficulty, and the disease is not peculiarly liable again to recur.

During the whole of this disorder the patient should use frequent exercise, but without much fatigue; a warm bath and cheerful company greatly assist the cure: the diet should be attenuating and aperient.

Medicines in this complaint are of doubtful efficacy, and the disease often yields rather to the relaxation of the duct, when the continuance of the stimulus renders it habitual. Stimulating the mouths of the ducts by the most soluble laxatives, as soap and the neutrals; compressing the duct by the joint action of the stomach, diaphragm, and abdominal muscles, as in the operation of vomiting; and alternating with the emetics and cathartics, opiates, often in the most active doses, is the best plan. The operation of vomits has been supposed likely to induce inflammation: this consequence, however, we have never yet found; but should it occur, a large bleeding, with a blister externally, and cooling laxatives, are the best remedies. The castor oil has been preferred in those cases as a laxative, but it seems to possess no peculiar advantage. Mercurials have been lately given in jaundice and in hepatitis, it is said, with success. Calomel is undoubtedly often an useful purgative. The best exercise is riding on horseback.

If a viscid bile occasion this disorder, which is known by the absence of an acute pain at the pit of the stomach, shooting out from thence to the back, after bleeding, and an emetic, aloetic and mercurial purges are preferable; after these, the kali acetatum is the best remedy, for it hath all the advantages of soap without its disagreeable taste, and is at the same time an useful febrifuge. It may be given to a dram, or a dram and a half, three times a day.

A redundancy of bile never produces jaundice, for the stools are highly coloured with the bile. In this case, the proper remedies are active purges, particularly the rhubarb and calomel, in doses adapted to the constitution of the patient. Acids and demulcents also contribute to the relief.

When the hæmorrhage is a troublesome symptom, acids and demulcents, the ol. ricini, made into an emulsion, or a decoction of hemp-seed in milk, are the best remedies; and if fever require it, which is scarcely in any instance the case, a little blood may be taken from the arm.

In case of a schirrus, the extractum cicutæ may be given as an anodyne or palliative, but will do little real service.

As an attenuant, the rubia tinctorum is said to be useful, perhaps because it is yellow; and the waters of Bath and Harrowgate are highly esteemed. Bitters, and even the bile of animals, have been given to supply the place of bile; forgetting that much inconvenience arises from the bile secreted in the stomach when accumulated in the blood. After the disease is removed, they may be useful to restore the strength of the stomach. See CALCULUS BILIARIS.

From the idea of jaundice arising from irritation,* or spasmodic affections in the hepatic system, small doses of ipecacuanha, tartarised antimony and valerian, asafœtida, cataplasms of cicuta and hyoscyamus, with linseed tea for common drink, blisters, locally applied, in case of pain, with opiates, have been severally administered, it is said, with success. See F. Hoffman; Saunders on Bilious Diseases; White on Diseases of the Bile; Huxham de Aere et Morbis Epidemicis, p. 143, &c.; Sydenham; Heberden's Observations in the London Medical Transactions, vol. ii. p. 123; Medical Museum, vol. i.; Cullen's First Lines, vol. iv.; Coe on Biliary Concretions; Maclurg on the Bile.

I'CTERUS A'LBUS. See CHLOROSIS.

ICTHYOSIS, (from ιχθυς, *a fish*). A species of lepra, in which the eruption appears like the scales of fish. See LEPRA.

I'CTUS, (from *ico, to strike*). A STROKE or BLOW. It signifies also the pulsation of an artery, and the sting of a bee or any other insect.

I'CTUS SOLA'RIS. A STROKE OF THE SUN; *insolatio;* and by the French *coup de soleil.* A disease arising from too violent an influence of the sun's heat, particularly on the head.

The diagnostics are a violent head-ach, a hot dry skin; a redness and heaviness of the eyes, sometimes a continual involuntary motion of the eyelids, a loss of sleep, drowsiness, occasionally with delirium on awakening, a violent fever, faintness, loathing, and thirst.

Persons not accustomed to labour in the sun are sometimes struck by its heat while on journeys, and die on the spot; others fall into a lethargy, or die in a few hours with symptoms of raving madness. If a patient escapes, he is frequently attacked afterwards with violent head-achs, which in some instances affect the eye-lids greatly. In others a delirium without a fever, gutta serena, &c. are brought on.

In infants this disorder manifests itself by a heavy, deep drowsiness, which continues several days; frequent delirium; by convulsive twitchings, periodical head-achs, and frequent vomiting.

The effects of too great a culinary fire are the same with that of the sun; sleeping with the head near the fire hath produced apoplexy during sleep.

The method of cure which has been pursued is the same with that of sanguineous inflammation; bleeding as freely as the strength will admit. The legs, or, if the disorder is violent, the whole body, has then been put into a tepid bath; emollient clysters frequently injected, almond emulsion, lemonade, and similar demulcent cooling fluids freely drank: linen cloths wrung out of vinegar and water are also applied on the face and scalp.

Such are the directions usually given. We have, however, great reason to think the nature of the disease has been misunderstood; at least as it occurs in this climate. The affection of the brain appears to us similar to that after concussion, viz. a state of atony from excess of excitement; and the increased action to be of short duration, and inconsiderable in degree. We have seen no instance in which bleeding has been

requisite, and if the slight increased action rendered leeches or blisters necessary, the period in which they were applicable was soon at an end. The vital functions then appeared to be greatly weakened, and tonics of every kind, with the most perfect rest of mind and body, were indispensable. The shock has not been soon recovered, and, for many months, the mind could not be readily exercised, or a close room borne without giddiness and confusion. After some time the cold-bath has appeared highly useful; and, during the whole time, the state of the bowels and the diet should be cautiously attended to. See Tissot's Advice.

IDÆ'US DA'CTYLUS, (from *Mount Ida*, its native place). See PÆONIA.

IDÆ'A. See OPHIOSCORDON.

IDEA'LES, (from ἰδέα, *an idea*). A class of diseases consisting in a faulty judgment or alienation of mind.

IDIOPATHEI'A, (from ἴδιος, *peculiar*, and πάθος, *affection*). A primary affection of any part; as of the head in lethargy, and the lungs in pleurisy; but when these parts suffer by consent, or from disorders of other parts, they are then said to be affected by sympathy.

IDIOSYNCRA'SIA, (from ἴδιος, *peculiar*, συν, *with*, and κρᾶσις). IDYOSYNCRASY; sometimes also *idiocracy*, *idiotropia*. Every individual hath a state of health peculiar to himself; and different bodies vary from each other, though each may be in a healthy state. This peculiarity of constitution is called *idiosyncrasy*. Idiosyncrasy sometimes depends on the original organisation; and diseases from this cause are often incurable. But when they arise from the state of the nervous power, it either respects its mobility or tone, and is shown by some peculiarity in the functions. It may then be readily corrected, if not wholly removed. See HYGIEIA.

IDIOTRO'PIA, (from ἴδιος, *peculiar*, and τρέπω, *to nourish*). See IDIOSYNCRASIA.

I'DOU MOU'LLI. The name of a tall plum-tree growing in the East Indies, whose fruit is cooling, and bark useful in many chronical diseases. Its place in the botanic systems is unknown.

IGASU'R. See NUX VOMICA.

IGBUCAI'NI BRASILIANO'RUM. A tree in Brasil, whose fruit resembles apples, and its kernels are a remedy in dysentery; unknown to modern botanists.

IGNA'ME. See CARA.

I'GNIS, (from the Hebrew term *aesh*). FIRE. Bacon, Boyle, Newton, and their followers, consider fire not as an element but as an adventitious property, resulting from the intestine motion of the smaller particles of matter; and this opinion has been lately revived by Count Rumford and Mr. Davy. On the other hand, Homberg, Boerhaave, Lemery, Lavoisier, and Black, consider fire as a material principle or element. The motion of friction or percussion undoubtedly generates or elicits heat; and, if the supposition of the mere vibration of parts could adequately account for the effects, it would be more simple than to suppose a material substance endued with peculiar properties; for it is still an hypothesis, since we cannot show the existence of fire without combination, and all reasoning by analogy promises very little elucidation of a subject which can only be prosecuted by experimental research. So far as experiment has extended, the result is in favour of the existence of fire as a distinct body. The reality of fire seems evident, by the power we possess of increasing or diminishing it. In the living human body, whatever increases the quantity of crassamentum in the blood, increases the degree of heat also; as an animal diet, aromatics, sometimes iron, and the mineral acids; but nitre, crude sal ammoniac, carbonic acid gas, seem to diminish it, or at least prevent its evolution. In physics, fire is understood to be that subtile invisible cause by which bodies are expanded or enlarged in bulk, and become hot to the touch; fluids rarefied or converted into vapour; solid bodies fluid, and either dissipated, melted into glass, or scorified. It seems, likewise, to be the chief agent in nature on which animal and vegetable life depend; and without which it does not appear that nature could itself subsist for a single moment. See CALORIC.

It has been doubted whether light is a modification of heat or a distinct principle. The greater number of facts show it to be distinct, and it has been lately supposed from induction, that they are antagonising principles repelling each other. See LUMEN.

Many distempers have been named ignis, or fire, but principally the causus, or burning fever, which Hippocrates often calls πῦρ, *fire*.

I'GNIS CA'LIDUS. A HOT FIRE. A violent inflammation hath been called a gangrene when about to degenerate into it; and has hence received the name of *ignis calidus*.

I'GNIS FRI'GIDUS. A COLD FIRE. A sphacelus; because the parts affected become cold as the surrounding air.

I'GNIS PE'RSICUS. I'GNIS SA'CER. I'GNIS SA'NCTI ANTO'NII. See ERYSIPELAS and HERPES EXEDENS.

I'GNIS SYLVA'TICUS. See IMPETIGINES.

Ignis is also a name of several medicines, as argentum vivum; the essential oil that swims on the top of distilled waters, &c.

The chemists use fire in different modes in performing their operations; whence their

I'GNIS SAPIE'NTIUM, or HEAT OF HORSE-DUNG.

I'GNIS REVERBERATO'RIUS. A REVERBERATORY FIRE is made in a furnace covered with a dome, that the heat or the flame may be reverberated on the vessels immediately exposed to it.

I'GNIS RO'TÆ, or FIRE FOR FUSION. Red-hot coals, surrounding the vessel in which the matter is contained.

The chemists formerly regulated their fire by different degrees: the first was scarcely to be perceived; the second was when the heat was manifest, but not sufficient to give pain; the third, when the heat was painful; the fourth, when sufficient to destroy the body; and fifth, when the heat would cause gold to evaporate in fumes. Boerhaave was the first who regulated the heat of fires by means of a thermometer; and when the degrees of heat are mentioned in his writing, they are to be understood according to Fahrenheit's scale.

We have since learnt to regulate the higher degrees of heat, by means of Mr. Wedgewood's thermometer, which enables us to ascertain degrees of temperature so high as 32277° of Fahrenheit, could his scale be ex-

tended so far; but, in electrical and galvanic experiments, we seem to experience a greater degree, since we can produce greater effects than can be attained by any fire; but perhaps some of the power must be attributed to the momentum.

On the contrary side, at 1500° of Fahrenheit, it is supposed no heat exists; but this is necessarily hypothetical, for it cannot be ascertained by experiment.

I'GNIS VI'VENS. See CIRCULATUM.

I'GNIS VOLA'TICUS. See IMPETIGINES.

IGNI'TIO, (from *ignis, fire*). CALCINING.

I'GNYE, I'GNYS, (from ἱκνεομαι, *to supplicate*; because bent in supplication). See POPLES.

IKAN, a root apparently of the orchis tribe, brought from China in pieces somewhat oval and compressed; but we know nothing of the plant which produces it, and little of its nature, which is said to be nutritious.

I'LAPHIS. See BARDANA.

I'LECH, and I'LEIDOS. A first principle, or elementary air. Paracelsus.

I'LEUM INTESTI'NUM, (from ειλεω, *to turn about*; on acccount of its many convolutions); *eilion*; *ilion*; one of the small intestines, immediately following the jejunum. Its convolutions surround those of the jejunum, on the two lateral and inferior sides, and it winds about from the left side by the hypogastrium to the right side, where it terminates in a transverse manner at the fleshy brim of the pelvis, and forms the first of the great intestines, called *cæcum*. Winslow observes, that the ileum is of a paler red than the jejunum. Through the whole length of this intestine it is wide and easily dilatable; but where it enters the colon narrow, and its sides more firm and solid.

In the course of this intestine, the valvulæ conniventes gradually decrease in size and number. When it approaches the cœcum they become longitudinal. In this intestine also, as well as in the jejunum, there are single solitary glands or lacunæ; sometimes clusters of glands called *reticulated*, increasing in number near its extremity, and flatter than in the jejunum. The ileum is more closely tied down than the jejunum, and consequently less capable of dilating. The appendices digitales are denominated from their resembling the finger of a glove, and are little processes sometimes sent off from the jejunum and ilium: they sometimes form hernia.

ILE'UM CRUE'NTUM; described by Hippocrates in his work De Internis Affectionibus. In this disease, as well as in the scurvy, the breath is fetid, the gums recede from the teeth, hæmorrhages of the nose and ulcers in the legs occur; but the patient's general health is not greatly injured.

I'LEUS, (from *ileum*); (see ILIACA PASSIO); is an ancient name for the colic. (See COLICA.) The chief varieties are of colica spasmodica.

I'LEX, (from the Hebrew *alah*, or *alon*). A tree of the oak kind, of which two species are occasionally noticed, viz. *aquifolium* Lin. Sp. Pl. 181, (see AQUIFOLIUM) and *quercus ilex* Lin. Sp. Pl. 1420. The SCARLET OAK. Its berries are the CHERMES, q. v.

I'LIA. The plural of *ile*, (from ειλεω, *to turn*). The FLANKS; the space between the lowest of the false ribs and the upper edge of the os ilium on each side; the two divisions of the regio umbilicalis.

ILI'ACA PA'SSIO, (from *ilia, the small guts*). The ILIAC PASSION, *ileus, convolvulus, contorsio, eileos, chordapsus, volvulus, tormentum*; a disease of the small intestines, generally from spasm: Dr. Cullen considers it synonymous with colica.

Considerable confusion has prevailed in describing the symptoms and cure of iliac passion, from inflammation being often attended with spasm, in consequence of increased sensibility and irritability; as well as from spasm producing inflammation. We shall, in considering this complaint, distinguish it wholly as a spasmodic disease, referring the inflammatory ileus to its proper head, under INFLAMMATION.

The disease is characterised by a violent pain in the abdomen, with an inversion of the peristaltic motion of the bowels, so that their contents are thrown up by vomiting. It is usually an acute disorder, but not essentially inflammatory. We know only of three species. The first consists of spasm from causes of debility. These are gout, repelled eruptions, narcotic poisons, particularly of lead, and the vegatable narcotics. In this case the disease is nearly in cause and cure the same with COLICA PICTONUM, q. v.

The second species is produced by an introsusception of the intestine, where a portion of the intestine falls down into the part below, generally doubling the intestine for the space of an inch or more, and thus constricting it. This is occasioned often by spasm, which contracting the diameter of a part of the gut admits of its introduction into that below. To this species the term of the true iliac passion is sometimes confined. Dr. Hunter takes notice of a disease to which children are more particularly subject, because their mesentery, having scarce any fat upon it, easily slips with the gut; and this he calls the *valvulus*, or *volvulus*, of which he observes there are two kinds: the first is when a part of a gut is received into the part next above it; the other is when a part of the gut is received into that below it. The last is, however, by far the most frequent.

The third species is a spasm of the intestines, excited by a mechanical body irritating or obstructing the intestines. A plum-stone or a calculus is of this kind; but the intestinal calculus is very rare in the human species. It will be obvious, however, that the first and third of these species properly belong to colica; nor indeed is it easy to separate these diseases. Much confusion would be avoided by abolishing the term altogether, or by confining it wholly to colic from introsusception. The latter, however, is seldom known till after death, and cannot properly form a distinct disease.

A costiveness usually precedes this disorder for some days, and pain is chiefly felt about the navel. With the pains, the belly is gradually inflated, and a hard tumour is felt in the umbilical region, surrounding the belly like a cord: not the least flatulence can for a time pass either upward or downwards. Inflammation, with its worst consequences, rapidly comes on.

The iliac passion should be distinguished from rheumatic pains in the muscles of the abdomen, and from inflammation of the peritoneum. In the first the external soreness is considerable, and the pain in moving the body much greater than in colic, even when inflammation has come on. The same circumstances distinguish peritonitis, and in both free motions do not procure considerable relief.

The cure of iliac passion differs in no respect from that of colic. If it arises from introsusception, we have said that it is seldom known. Practical authors have remarked, that if the gut has fallen into the intestine below, laxatives are injurious, and the cure must be attempted by clysters. The contrary practice is preferred in opposite circumstances. This is, however, a refinement which we cannot apply, as the existence of either is unknown.

Clysters of the fumes of tobacco will, in this species of disease, be particularly useful; and the warm bath is frequently salutary. A blister also to the abdomen, a remedy particularly adapted to INFLAMMATIO INTESTINORUM, q. v. is often useful in this disease.

The prognostics are favourable while inflammation is absent; while clysters can be thrown up, and returned by stool; while the pains shift, and the pain and vomiting occur only at intervals: it is still more promising, if a laxative, taken by the mouth, passes by the anus; but if little or no relief is obtained by stool for some days there is scarcely room for hope. Indeed none, unless true fæculent matter is copiously discharged. An entire suppression of urine is a dangerous symptom, though some degree of suppression generally attends.

See Hippocrates de Morbis; Aretæus; Cœlius Aurelianus; Celsus; F. Hoffman; Sydenham; London Medical Observations and Inquiries, vol. i. p. 223, &c.; Edinburgh Medical Commentaries, vol. ix. p. 266, 278.

ILI'ACA MI'NOR, ARTE'RIA, is the most posterior branch of the hypogastric artery; sometimes the branch of the glutæa.

ILI'ACA VA'SA. The ILIACÆ ARTERIÆ and VENÆ, which see.

ILI'ACÆ ARTE'RIÆ; belonging to the ilia. The ILIAC ARTERIES are formed by the bifurcation of the aorta, at about the fourth vertebra of the loins. They descend nearly three fingers' breadth from their origin; and when they arrive at the psoas muscle, on each side, or are upon it, each divides into two, an external and an internal: the external hath no particular name; the internal is called *hypogastrica*. See HYPOGASTRICÆ ARTERIÆ.

The external iliac, on each side, runs down to the ligamentum Fallopii, under which it goes out of the abdomen. In this course, it gives off a few small arteries to the peritonæum, and parts near it; but, as it passes out of the belly, under the ligament, it detaches two considerable branches, one internal, the other external: the inner is called EPIGASTRICA, q. v.; the exernal, INNOMINATA, q. v. The external iliaca also gives off a small branch internally, under the ligament, which runs to the vagina or the spermatic chord, and sometimes another from the outside of the os ilium.

For the internal iliac artery, see HYPOGASTRICÆ ARTERIÆ.

ILI'ACÆ VE'NÆ, (from the same). ILIAC VEINS, *titillares venæ*, are formed by the bifurcation of the vena cava, about the last vertebra of the loins. After their leaving the vena cava, each divides into two principal branches; the iliaca externa, or anterior; and the iliaca interna, or posterior: the external, which seems the true continuation of the trunk, is sometimes simply named iliaca; the internal hypogastrica: each follows the course of the respective arteries. The external iliac veins lie a little on the inside of the arteries, and, before they leave the abdomen, they accompany their corresponding arteries, both in their course and in their divisions into branches.

ILI'ACUS EXTE'RNUS, MUSCULUS, (from the same). See PYRIFORMIS.

ILI'ACUS INTE'RNUS, MUSCULUS, lies upon the concave part of the ilium, arising likewise from the anterior edge of the bone, and runs down before the psoas muscle: it then runs over the head of the bone, and passes inwards, to be inserted into the little trochanter; lifting, in its action, the thigh upwards.

ILI'ADUM. The three principles of Paracelsus. Sometimes, according to the same author, a mineral spirit, supposed to be contained in every element, and the cause of diseases.

ILIA'STER. The occult virtue of nature, whence all things increase. Paracelsus.

ILI'NGOS, (from ιλιγξ, *a vortex*). See VERTIGO.

I'LION. See ILEUM INTESTINUM.

I'LIOS. See PASSIO ILIACA.

ILI'SCUS. Madness occasioned by love. Avicenna.

I'LIUM, OS; *os innominatum*, but strictly its upper part. Its name is given from its supporting the ilia. The ilium forms the upper and posterior portion of the pelvis, extending to the transverse section of one third of the acetabulum. The external side is convex, called its dorsum; the internal part is its costa; the superior semicircular edge, the spine. The whole cavity is called *cholas*, or *cholago*. Between the os sacrum and the ilium is the sciatic notch, where the sciatic nerve and posterior crural vessels pass without being subject to compression.

ILLECE'BRA, (from ειλεω, *to turn*; because its leaves resemble worms), *vermicularis, piper murale, sedum minus*. WALL PEPPER and STONE CROP. *Sedum acre* Lin. Sp. Pl. 619; is a very acrid plant, proving violently emetic and cathartic, so that the best authors have thought it unsafe. It has been employed, however, boiled in milk, as an antiscorbutic, and has been occasionally used in epilepsies. When employed in scurvy, a handful is boiled in eight pints of milk to four. Macquer recommends it in scrofulous and cancerous ulcers.

ILLEGI'TIMUS, (from *in*, and *legitimus*, *lawful*). ILLEGITIMATE; an epithet for the false ribs, and for some anomalous fevers.

ILLI'NCTUS, (from *illingo*, *to lick up*). See LINCTUS.

ILLI'SIO, (from *illidor*, *to dash against*). See ENTHLASIS.

ILLISIO'NES AQUA'RUM. See CATACLYSMUS.

I'LLOS, (from ειλεω, *to turn round*). See OCULUS.

ILLOSIS, (from the same). See STRABISMUS.

ILLUMINA'BILIS LA'PIS, (from *illumino*, *to shine*). See BONONIENSIS LAPIS.

ILLUTA'TIO, (from *in*, *upon*, and *lutum*, *mud*). ILLUTATION; besmearing any part of the body with mud, and renewing it as it grows dry, with the vague or ridiculous view of heating, drying, and discussing. The mud found at the bottom of mineral springs is chiefly employed.

I'LLYS, (from ειλεω, *to turn round*). A person affected with strabismus.

I'LYS, (from ιλυς, *mud*). The FÆCES OF WINE;

and an epithet for the sediment in stools and urine, which resembles them.

IMAGINA'RII, (from *imagino, to conceive*). Diseases in which the imagination is principally affected.

IMAGINA'TIO, (from the same). IMAGINATION. To the power of the mother's imagination many peculiarities in the fœtus have been ascribed. See FŒTUS. Philosophical Transactions Abridged, vol. ii. p. 222. Medical Museum, vol. iii. p. 273, &c.

IMBECI'LLITAS, (from *imbecillis, feeble*); *acratia* and *arrhostia*; generally means a debilitated state of the habit, and the latter word sometimes implies mental imbecility.

IMBECI'LLITAS OCULO'RUM. See AMBLYOPIA. NYCTALOPS.

IMBE'RBIS, (from *in, not,* and *barba, a beard*). BEARDLESS; botanically it is applied to the corolla.

IMBIBI'TIO, (from *imbibo, to receive into*); a kind of cohobation, when the liquor ascends and descends upon a solid substance, until combined with it. Sometimes it signifies cohobation, and any kind of impregnation.

IMBRICA'TUS, (from *imbrex, a tile*). The leaves or scales of plants, disposed so as to lie one on the edge of the other, like tiles on a house. The term is applied to leaves, and their serratures in the bud: to the stem, when covered with scales; *tectus ut nudus non appareat;* to the calyx, as in the *hieracium, sonchus,* and other *syngenesia;* to the spike, when the flowers are so close as to press over each other.

IMME'RSIO, (from *immergo, to plunge in*). Chemical immersion is a species of calcination, when a body is immersed in any fluid, to be corroded. When any substance is plunged into a fluid in order to deprive it of a bad quality, or to communicate a good one, the same term is employed.

IMME'RSUS, (from the same). See INFRASCAPULARIS MUSCULUS.

IMPASTA'TIO, (from *in,* and *pasta, paste*). IMPASTATION. The making dry powders into paste by means of some fluid. See INCORPORATIO.

IMPA'TIENS HE'RBA, (from *in,* and *patior, to suffer;* because its leaves recede from the hand with a crackling noise). See MOMORDICA and PERSICARIA SILIQUOSA.

IMPERATO'RIA, (from *impero, to command;* because its leaves extend, and overwhelm the lesser plants which grow near it). MASTERWORT. *Astrantia, magistrantia, ostritium, imperatoria major, astritium, struthium, smyrniom; imperatoria ostruthium* Lin. Sp. Pl. 371.

It is an umbelliferous plant, with large winged leaves, divided into three indented segments, producing thick, oblong, striated seeds, surrounded with a narrow leafy margin: the roots are oblong, thick, knobby, jointed with several lateral fibres, brown on the outside, and whitish within: perennial, a native of the Alps and Pyrenees; found in several places on the banks of the Clyde, in Scotland, by Mr. Lightfoot.

The root is warm, grateful, and aromatic, nearly of the nature of angelica; yielding to water, or spirit of wine, its smell, warmth, pungency, and bitterness. On inspissating the spirituous tincture, very little of its flavour exhales; but nearly the whole is carried off in distillation with water. If the root is held in the mouth it provokes saliva; if swallowed, purges; and is sometimes called the *countryman's purge:* an infusion of it in water, sweetened with honey, is said to be an expectorant. The roots should be taken up in the middle of the winter of the second year. It was considered as an alexipharmic and sudorific; and in some diseases employed with so much success as to be called *divinum remedium;* but, at present, it ranks only among the inferior aromatics. A name also for ANGELICA.

IMPERATO'RIA NI'GRA. BLACK MASTERWORT, *astrantia nigra, sanicula fœmina; astrantia major* Lin. Sp. Pl. 339, is kept in the gardens of the curious, and flowers in July. Its black and fibrous roots only are used.

See Raii Historia Plantarum; Lewis's Materia Medica; Neumann's Chemical Works.

IMPERIA'LIS A'QUA. See FLUOR ALBUS.

IMPETI'GINES, (from *impeto, to infest*). Diseases which occasion blemishes on the skin; *terna, derbia, ignis sylvaticus, volagrius,* or *volaticus,* and *serpigo.* See LEPRA, PRURITUS, HERPES, and MENTAGRA.

In Dr. Cullen's system the impetigines are an order of the *cachexiæ,* defined disorders from a general bad habit, manifesting themselves principally by disfiguring the skin and other external parts of the body. The itch, though affecting the skin, is placed in the class *locales,* since it is unconnected with the general habit.

IMPETI'GO of Celsus, (from the same); *lepra Græcorum* Blanchard. In Celsus it is described as consisting of hard dry prurient spots in the face and neck, sometimes over the whole body, disappearing in branny scales.

IMPETI'GO PLI'NII and A'RABUM; the *lichen* of Blanchard.

IMPLU'VIUM, a SHOWER BATH, (from *impluo, to shower upon*). See EMBROCATIO.

IMPOTEN'TIA, (from *in, not,* and *potens, able*). IMPOTENCE in men is the same in its effect as sterility in women, that is, an inability to propagate their species; but in the causes and the circumstances these states greatly differ.

In each case there is a failure of propagation; but, in each, there is by no means an unfitness for the venereal act. Sterility in women, indeed, often arises, like impotence in men, from a coldness of constitution, which admits not of due excitement; but it is also owing to the causes which separate the fœtus almost as soon as formed. From men who are impotent no impregnation takes place.

The great causes of impotence in men are organic defects and debility. We have shewn, that in generation the semen must be carried to the uterus, and probably to the Fallopian tube; but in this ultimate destination it is apparently assisted by the action of the womb itself. To carry it to this organ requires a free passage through the urethra, no inconsiderable activity in the ejaculatory muscles, and the full distension of the corpora cavernosa. The free passage is sometimes prevented by strictures in the urethra, and sometimes, as in a case recorded by Petit, by a faulty direction of the orifices through which the semen passes. A natural phymosis has been found also an obstruction to the free discharge of the seminal fluid. A severe priapism seems occasionally to constrict the cavity of the urethra, or of the entrance of the vasa deferentia; for in this disease there is no emission, and the feelings are those of vio-

lent pain rather than of pleasure. Intoxication, in some men, will produce this violent spasm, and unfit them for the completion of the venereal act. See PRIAPISMUS.

Debility, however, from too frequent or unnatural indulgences, is the most common cause, shewn by an imperfect erection of the penis, or too weak a discharge of the semen: the latter is often a consequence of the former. In some weak habits the discharge immediately follows the slightest irritation, either of the parts or of the mind. Dreams so imperfect as scarcely to be remembered will occasion it, and this arises from the increase of irritability, in consequence of debility. From its remote cause, tonics, and the most stimulant nutriments, are employed; but the only remedies are those which lessen irritability, viz. camphor, opium, and henbane, or hemlock. Washing the penis and scrotum, morning and evening, with cold water, and dashing the water against these parts from a bidet, are often useful; but it is necessary to remove every alluring or enticing object; to guard against every lascivious thought. When impotence arises from so great a debility as to admit of the discharge of semen by the efforts to relieve the belly, the strongest tonics and astringents are required.

It has been supposed by some authors, that, in such cases, the semen wants its usual stimulating properties, as it is observed to be unusually fluid; but of this there is no evidence; and, as the discharge is so readily excited, we think it more probable that its fluidity depends on its not being allowed to stagnate.

Mr. Hunter has, we think, refined unnecessarily on this subject, by stating one cause of impotence to be a want of correspondence in the successive actions of secretion and discharge. If the first is too rapid for that erected state of the penis which renders the ejaculation effectual, it constitutes this disease as certainly as when the action of the muscles of the latter is too quick for the former. Debility, and its consequent state of irritability, is sufficient to explain all the circumstances of the case without such recondite researches. In general, where there are corresponding actions of two connected parts, it is very unusual to find them separated. Each may be weakened; but from habit each will partake of the disease, and will act together as before, but with diminished power.

A singular cause of impotency is recorded in the Medical Essays of Edinburgh, where each attempt was followed by an epileptic paroxysm. From what has been said on that disease, it will not be surprising, that in a mobile habit, disposed to convulsions, a stimulus so violent should bring on a paroxysm. The reasoning and the cure were equally ridiculous; nor is this a single specimen where physicians have succeeded by accident, and have really taken a readier road for the relief of the disease than they themselves suspected.

The state of the mind, it is observed, has a considerable influence on the powers of the body, particularly in the venereal act. The body, Mr. Hunter remarks, should not only be in a state of health, but the mind free from apprehensions, anxiety, and distress. The mere anxiety of excelling in this act has been no uncommon cause of disappointment. A state of hope, a consciousness of crime, a recollection of former failures, equally enervate the body. Such causes of impotence are to be clearly distinguished from real defects, since an alteration in circumstances, by which anxiety, distress, &c. are removed, will relieve the complaint. Greater confidence, from having once succeeded, will alone break the charm, and all will be well.

The mind is more intimately connected with the genital system, chiefly in men, though in a certain degree in the other sex, than has been imagined. The apprehension of weakness, in this most important of functions, really produces it. The imagination broods over fancied ills, till the whole system is really disordered. In this state every wall offers a certain remedy, and the *Solar Tincture*, the *Restorative Drops*, are eagerly bought. It is remarkable, that these diseases are distinguished by capitals to lure the unwary; but the medicines are sometimes truly restorative, for they restore confidence, and thus contribute to remove the disease. In general, however, each quack is tried in succession, till tired nature decays into a hectic, is overwhelmed in a dropsy, or the mind sinking in imbecility, or mania, offers a melancholy spectacle of what degradation human nature can suffer. All this distress might be removed if the patient had the resolution to tell his grief to a friend, or a physician of character and judgment. A well-regulated plan of medicine and diet would contribute to relieve the bodily complaint, while the mind, consoled with prospects of returning health, would assist in realising the prediction. Many such instances we have known where the disease has been radically removed, and the desponding patient become a happy husband, and the delighted father of a numerous and healthy offspring.

We have so mixed the medical directions with the descriptions of the disease, that we have little to add on this part of the subject. We may, however, again repeat, that, except in impotence from great relaxation, tonics and astringents are of little avail. Where it arises from too great irritability, a cooling diet, abstaining from lascivious thoughts or objects, with sedatives, are the best remedies. In that case, which arose from epileptic paroxysms, the cure was effected by rendering the object of desire more familiar before the act was again repeated, and, of course, lessening the too violent stimulus. There is no opinion more inconvenient in its effects than that which dictates a full, nutritious, and stimulant diet. We have often had occasion to repeat, that no cause of weakness is so frequent and obstinate as that which arises from fulness of the circulating system, and no plan of medicine more injurious than constringing over-distended vessels by tonics. It has been supposed that some medicines have a peculiar effect on the genital system; and the balsams have been given, as they are directed to the bladder, and, of course, may communicate a stimulus to the neighbouring parts. We have not found them particularly advantageous; and even the balsam of Peru, which unites a tonic with its stimulant power, has not produced any very salutary effect. If, as we have been informed, Geneva is not favourable to the active energy of these organs, we can hardly expect great advantage from medicines so nearly resembling this spirit. In every case, except where the fulness is considerable, cold bathing, both general and topical, is highly useful.

To abstain from, or to indulge, venereal pleasures, is equally injurious. A moderate use is salutary; and marriage, if the disease be not too far advanced, is to

be advised. It has often succeeded; and when the confidence that the power is not wholly lost be once established, the power itself is soon regained.

IMPRÆGNA'TIO, (from *imprægnor, to conceive*). IMPREGNATION. *Ingravidatio.* The state immediately after conception, continuing till delivery. A woman usually perceives the child to move at different periods; the soonest at the end of forty days, the latest at the end of five months. But some women, without being pregnant, perceive a motion like that of a child. La Motte thinks that a large child and a small quantity of water may prevent a pregnant woman from perceiving the motion of the child. (See GENERATIO and CONCEPTIO.) For the impregnation of plants, see FARINA FŒCUNDANS.

IMPRE'SSIO, (from *imprimo, to press upon*). See DEPRESSIO.

I'MUS VE'NTER, (*the lower belly*). See ABDOMEN and HYPOGASTRIUM.

INA'IA GUACU'IBA. See PALMA COCCIFERA.

INCANTAME'NTA, (from *incanto, to charm*). See AMULETA.

INCA'NUS, (from *in*, and *canus, white, hoary*). The leaf of a plant covered with whitish down.

INCARNA'NTIA, (from *incarno, to bring flesh upon*). Medicines which assist the filling up wounds or ulcers with flesh. See ANAPLEROTICA.

INCE'NDIUM, and INCE'NSIO, (from *incendo, to burn*). A BURNING FEVER; burning heat; sometimes a hot inflammatory tumour.

INCERA'TIO, (from *in*, and *cera, wax*). INCERATION; the reduction of any dry substance to the consistence of wax, by the gradual admixture of oil.

INCERNI'CULUM, (from *incerno, to sift*). A STRAINER OR SIEVE. In anatomy it means the pelvis of the kidney.

INCIDE'NTIA, (from *incido, to cut*). Medicines which divide the particles of fluids, supposed to cohere preternaturally, and induce disease.

INCINERA'TIO, (from *incinero, to reduce to ashes*). INCINERATION; *æstaphara.* Reducing any body to ashes by fire. See CALCINATIO.

INCI'SIO, (from *incido, to cut*). INCISION. The opening of abscesses by means of a lancet or scalpel. For the best modes of opening them, or extracting matter with the most ease and security, see Bell on Ulcers, edit. 4. p. 70, &c.

INCISO'RES DE'NTES, CUTTERS, (from *incidere, to cut*). A name of the four anterior teeth in each jaw from their use in cutting, *Ctenes, dentes lactei, risorii, dichasteres.* The edges of the incisores, by use and friction, are blunt and thicker; though, from the form of the jaw, and direction of the teeth, they sometimes seem to sharpen each other, and become thinner. These teeth are convex externally, and concave internally; so that when they are worn, the internal concave surface of the upper ones, and the external convex surface of the lower ones, are wasted. See DENS.

INCISO'RII DU'CTUS; two canals from the bottom of the internal nares, across the arch of the palate, which open behind the first and largest of the dentes incisorii; their lower orifices are in the foramen palatinum anterius, called *nasopalatini ductus.*

INCISO'RII INFERIO'RES COWPE'RI, MUSCULI, arise from the alveoli of the lateral incisores of the lower jaw, and are inserted into the middle of the semi-orbicularis of the lower lip.

INCISO'RII LATERA'LES, MUSCULI. *Canini minores.* A biceps muscle, which unites at the other extremity. It arises from the os maxillare, below the middle tendon of the orbicularis palpebrarum, and below the edge of the orbit in the os maxillare, near the union of this bone with the os malæ; the heads from each side unite about the lateral dentes incisorii.

INCISO'RII MED'II, MUSCULI; *incisorii minores Cowperi,* or *incisores minores superiores;* are two small short muscles situated near each other below the septum narium: they rise from the os maxillare, on the alveoli of the first *incisores,* and are inserted into the middle and upper part of the upper lip.

INCISO'RIUM, (from *incido, to cut*). A table whereon a patient is laid in order to have an incision made on any part; or a body to be dissected.

INCISO'RIUM FORA'MEN, lies behind the dentes incisores of the upper jaw, which divides into two, as it opens into the nose on each side of the septum nasi.

INCI'SUS, (from *incido, to cut*). A leaf whose edge is notched.

INCITABI'LITAS, (from *incito, to stir up to action*); INCITABILITY. In a practical view, it has appeared necessary to make a distinction between this term and IRRITABILITY; because, though it is allowed that to those two powers the existence of a machine in a living state, and the action of its moving solids with respect to their continuance, are entirely owing; yet they do in some degree certainly exist independent of each other. By this knowledge, therefore, it is supposed that we shall sometimes be able to explain the different appearances of diseases, and the means of relieving them by medicines directed to either. By incitability is meant that power in the brain, and nervous system, which may be excited to action by mental affections, as well as local irritation, and which produces those affections we call sympathy; by irritability, that power which may be put into action by material stimulus, locally exerted, yet is obedient to the influence of the nerves in general, and cannot in the living machine exist for any considerable time without this union. More strictly, incitability is confined to the nervous, and irritability to the moving, fibres. See Wallis on Health and Disease; IRRITABILITAS, and SENSIBILITAS.

INCLINA'TUS, (from *inclino, to bend down*); an epithet applied to a root of a plant which runs obliquely.

INCLU'DENS, (from *includo, to shut up*). The calyx of a flower which shuts up and conceals the corolla.

INCLU'SUS, (from the same). The stamen of a flower when shut up in the corolla.

INCONTINE'NTIA, (from *in, not,* and *contineo, to contain*). INCONTINENCE. An inability in any of the organs of the human body to retain their contents, which are usually discharged by the exertion of volition.

INCORPORA'TIO, (from *incorporo, to blend together*). INCORPORATION. The union of oily or terebinthinate substances with water into one uniform fluid, by the mediation of a third substance.

INCRASSA'NTIA, (from *incrasso, to make thick*);

pyenotica. INCRASSATING MEDICINES; such as reduce the blood and secreted fluids to a proper consistence when supposed to be too fluid.

INCRASSA'TUS, (from the same). The epithet of a stalk which increases in thickness as it approaches the flower.

INCRUSTA'TIO, (from *incrusto, to harden*). INCRUSTATION; forming a crust or eschar upon any wound.

I'NCUBUS. The NIGHT-MARE; (from *incubo*, to lie on; *ephialtes*, from εφαλλομαι *to leap upon*; *epibole*, from επιβαλλω, *to press on*; because the patient imagines that something leaps or presses upon him; and *babuzicarius*, from βαβαζω, *to speak inarticulately*, because, in his distress, he mutters indistinctly). There is also a species called *succubus*. The INCUBUS is synonymous with *oneirodynia* in Dr. Cullen's system.

This complaint always happens during sleep: the patient suddenly feels a sense of weight, a dread of suffocation, an oppression as from somebody falling upon him, with an intent to deprive him of life, not suffering him to cry out; hence it is usual with these patients to start up and exclaim with a confused inarticulate voice: they move with difficulty; but, on the first motion, the distressing feelings vanish.

This disorder hath been supposed to proceed from a stagnation of blood in the brain and lungs; but it is a nervous affection, chiefly from indigestion: and those whose nerves are weak, who lead sedentary lives, feed heartily, and sup late, are the most subject to it. Wind is a frequent cause: deep thought, anxiety, or any oppression of mind, equally produce it. It is said that none are attacked with the ephialtes but when laid on their backs. A sense of suffocation, rousing the patient from sleep, has been styled an ephialtic symptom, distinguishing hydrothorax; but, in this case, there is no sense of a heavy weight on the præcordia.

If the patient hath a sanguine plethora, bleeding, a spare diet, and aloetic purges, relieve the complaint. Dr. Whytt says that he generally found a glass of brandy, if taken at bed-time, would prevent the attack. A slight supper, cheerfulness before bed-time, due exercise during the day, are the best remedies; but if these fail, the fetid gums, with camphor joined to opium, at bed-time, will succeed.

See Cœlius Aurelianus de Morbis Chronicis, lib. i. cap. 3. Lommii Observationes Medicinales, iii. P. Ægineta, lib. iii. c. 15. Soranus's Aitiologoumena.

INCU'MBENS, (from *incumbo, to lean against*), a term in botany.

INCURVA'TUS, (from *incurvo, to bend*). Bent, a term applied to a gibbous spine, and in botany to the stalk.

I'NCUS, (from *incudo, to strike upon*). The ANVIL. The name of one of the bones in the ear; named from its resemblance to an anvil. It is broader than it is thick; articulated with the malleus, behind the manubrium, from whence a short thick process projects backwards, and a long one downwards, which runs down parallel to the long process of the malleus, but rather more backward. The short process is thick at its beginning, but ends in a point, which is turned backwards and joined to the edge of the opening of the cellulæ mastoideæ. The long process at its extremity is rather bent inwards, by which we may distinguish the incus of one ear from that of the other; for, turning the short process backwards, and the long process downwards, if the bending in of the long leg be towards the left hand, it belongs to the right ear, and *vice versa*. See AURIS.

I'NDEX, (from *indico, to point out*). See DIGITUS.

I'NDIÆ ORIENTA'LIS RADIX GENUINA. See GENSING.

INDIA'NA RADIX, (from the West Indies, its native place). See IPECACUANHA.

INDICA'TIO, (from *indico, to show*, or *point out*). Indication; *delotio, endeixis*. The diagnostics of a disease, and its pathognomonic signs, are collections of particulars that occur to observation. Indications are conclusions that arise from reasoning on these particulars, called signs. The indication of cure, in all diseases, is to remove the proximate or immediate cause; but this is seldom known.

INDICA'TOR, (from the same). See EXTENSOR INDICIS.

I'NDICON. See MYRTIDANON.

I'NDICUM, (from the Arabic term *hindi*, India). The INDIGO BLUE PLANT; also called *indigo, anil, nil, isatis*, and *coronilla Indica, emerus Americanus, glastum Indicum, Ameri, couachira Indorum, colutea Indica, herbacea, enger, gali, herva de anil Lusitanis, hin-awaru*; *Indigofera tinctoria* Lin. Sp. Pl. 1061, is a native of South Carolina, but was known to the ancients. It seems to have been indigenous in Malta, and was certainly produced in large quantities in Egypt; and the name *anil* (al-nil) seems to show that it was known to the Arabians. It requires a tropical temperature, but is found within forty degrees on each side of the Æquator. We are now supplied from the continent and islands of America, though some indigo is prepared in France. This substance is a fæcula, or starch, separated from the plant by the powerful action of fermentation. It is not agreed how far this process should proceed. It certainly goes beyond the spirituous, since ammoniacal salts are found in indigo, but, by complete putrefaction, it is spoiled. Some oil is used in the preparation, though with no very decided object. We suspect its chief advantage to arise from its power of moderating the too violent fermentation, or preventing the escape of the carbonic acid gas. Various species of this plant, and various processes for separating the fæcula, are employed, which it is not our object to detail. It is brought to us in flat cakes of a moderate thickness, moderately hard, of a deep violet colour: the best kind swims on water, and when broken hath no white spots in it. That which is reddish, on being rubbed with the nail, and hath dust and broken pieces in it, is far inferior. Such white spots are found in the common indigo of the shops, which is an adulteration of the genuine kind by the mixture of flour.

The plant is said to be detergent, of some use when applied to ulcers, or to kill lice.

There is another plant which is called *anil*, used by way of decoction in nephritic colics, and suppressions of urine; but we have not been able to determine the species.

See Raii Historia Plantarum. Neumann's Chem. Works.

I'NDICUM BA'LSAMUM. See PERUVIANUM BALSAMUM.

I'NDICUM LI'GNUM MONTA'NUM. See CAMPECHENSE LIGNUM.

I'NDICUS. See COSTUS.

I'NDIGA SPU'RIA. See COLINIL.

INDIGE'NI, INDIGENOUS; natives of the country in which they are found. The term is applied to plants and animals

INDIGES'TIO. See DIGESTIO, APEPSIA, and DYSPEPSIA.

INDIGNATO'RIUS MU'SCULUS, (from *indignor, to scorn*; because this muscle assists in producing a scornful look). See ABDUCTOR OCULI.

I'NDIGO. See INDICUM.

INDU'SIUM, (from *induo, to put on*). A SHIRT or SHIFT. Clean linen promotes perspiration, and it may be renewed as often as the patient pleases, whether the disorder be of the acute or the chronical kind; except during a crisis in fevers, while the patient is in a sweat. Yet, even in this state, with proper precautions, the linen may be sometimes safely changed. See AMNION.

INEBRIA'NTIA. We have anticipated the more important observations on this class of medicines in our article ANODYNA, q. v, and we shall now only point out the more common inebriants, with some remarks on their action, for which our readers were not at that time prepared. The most common inebriant is OPIUM. It is employed among the eastern nations, very generally, to procure, not sleep, but serenity and cheerfulness; and its use, in this respect, may be traced to the earliest ages, for it was probably the nepenthe of Homer. TEA is equally general in the west, and in its native country China, but it is mild in its effects, and, if not drank unusually strong, or in too copious draughts, it is not injurious. There is some reason to suspect, that the additions, which give it the flavour, are most hurtful; for the finest teas produce the worst effects. The BANGUE of the east, prepared from the leaves of the canabis indica, and not from those of the hibiscus abelmoschus, as has been asserted, is in general use (vide in verbo) in India, as an inebriant; but the BETLE, q. v. is rather a stimulant than a narcotic. The ASSYRIAN RUE, peganum harmala of Linnæus, was formerly used, as Bellonius informs us, for this purpose; but its very offensive and disagreeable smell prevents it from being any longer a luxury. The seeds of different species of datura have been also used to inebriate, as well as the roots of the black henbane, and the hyoscyamus, physaloides Lin. The Delecarlians employ the leaves of the millefolium to increase the intoxicating power of the beer; and the porter brewers of this country are said to use the canabis indicus and the coculus indicus; but this has lately been denied on oath in the King's Bench. Tobacco; the darnel; the clary; the vanilloes; the hemlock; the spawn of the barbel; and the agaricus muscarius, have been all employed for this purpose. Fermented liquors and spirits are sufficiently known. See Linnæi Amænitates Academicæ Inebriantia, vol. vi.

All these medicines are sedative, and their effects on the nervous system are to produce an unequal excitement. We have explained, in a variety of articles (see INSOMNIA), that the regular discharge of the mental functions depends on a free, uninterrupted communication between the different portions of the brain. When from any cause this is prevented, delirium, in different degrees, takes place. If unequally excited, the delirium is of the violent kind: if unequally depressed, of the low, and often of the pleasing kind. Whether pleasing or otherwise, the effect is nearly similar, since the same medicine, in different constitutions, will excite the most soothing and the most horrible images. See MATERIA MEDICA.

INE'RMIS, (from *in, non,* and *arma, arms*). HARMLESS; applied to soft thorns, as those of the thistle.

INE'RTIÆ VIS, (from *iners, sluggish*). The power of inactivity. By this, apparently contradictory term, sir Isaac Newton means that passive principle in matter, by which bodies resist any change or alteration of their state, whatever it be, of rest, motion, or its direction; and this resistance, always equal in the same body, is, in different bodies, proportional to the quantity of matter they contain. Hence, in medicine, it means when the powers of the constitution are torpid or inert, and make no effort in the recovery of health.

I'NFANS, (*à non fando, from its inability to talk*). An INFANT or CHILD. Fred. Hoffman limits the period of infancy to the time when children begin to talk, and that of childhood to the age of puberty.

During infancy the parts are disproportioned, and the organs from weakness incapable of those functions which, in future life, they are designed to perform. The head, the liver, and pancreas, are much larger, in proportion, than in advanced periods; and their secretions more copious. The bile is very inert; the heart is stronger and larger than in future life; the arteries fuller and more active; the quantity of blood sent through the heart of an infant, in a given time, is also more in proportion than that in adults. Though these circumstances are not without utility and subservient to the growing state, yet the imperfection attending them subjects this period of life to many injuries and dangers from which a more perfect state is exempted.

Infants are more acutely sensible and more irritable than adults; and the diagnostics of diseases are consequently more uncertain. However, no very great embarrassment arises from these circumstances; for the disorders of infants are usually acute, less complicated than those of adults, and are more easily discovered than is generally apprehended.

The vigour of children's constitutions depends greatly on that of their mothers. Healthy women, who accustom themselves to exercise and air, and whose diet is firm and invigorating, alone bring forth children perfectly healthy.

As soon as a child is born, the mucus with which its body is covered is best washed off with soap and water. But the anxiety to render the infant perfectly clean produces inflammation, and considerable uneasiness; moderate cleanliness is at the first sufficient: and the next dressing will easily and safely complete the whole.

After examining the new-born infants with a view to discover any accidental injury, or natural imperfection, wrap the navel string in a rag, sufficiently folded, to prevent its coldness from producing inconvenience. The heads of infants should be dressed loosely, and their future formation left to nature.

It was usual after dressing to give oil of almonds, with syrup of violets; sugar with butter, or other slight laxatives, to discharge the meconium. These are

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at least useless. A little gruel with milk will alone bring it off; and the first milk of the mother will complete the necessary discharges. For this purpose the child is put early to the breast, usually within twelve hours, which solicits the secretion, and prevents its too violent current.

The general management of the infant state is directed too frequently by fashion, or rather by caprice. Modes and medicines used for centuries, handed down in successive generations, cannot always be combated by reason, but are sometimes wholly exploded by a fashionable physician, who aims at distinction by total overthrow of what has been long held sacred. Common sense must at last decide, and, without engaging in controversy, we shall pursue its dictates.

The little being, when first introduced to this world, is brought from a temperature of at least 96°, and should therefore be cautiously guarded against sudden exposure to the air. His clothing should be light and easy; and, at first, warm. The tender skin would be chafed with flannel, and therefore old linen is preferred. Calico would be still better; but the whole must be covered with flannel, and fastened, as much as possible, by strings. For a long time, cold excites uneasy sensations, and he is properly placed close to the mother; by her side, or that of a healthy nurse, he should lie till at least he has lived twelve months; but modern refinement, or modern apprehensions, place him alone in a crib by the side of the bed. On this subject we can only observe, that we have known infants, thus separated from the warm bosom, cry nearly a whole night; and, in general, they *increase slowly*, are weak and delicate, while those with a nurse, if not the mother, have appeared thriving and happy. But, though the child should be kept warm, the air around should circulate freely. A curtain against its head may prevent the current passing over him, but no other curtain should be drawn, and the room should be high, large, and airy.

On the food of children we cannot add to what we have said in the article ABLACTATIO; but may here remark, in opposition to a common and most ridiculous practice, that a child should not be accustomed to take its food at distant intervals. Digestion in children is rapid; and, if food is delayed, the child is uneasy; and, when brought, takes it greedily and too copiously.

A healthy child scarcely ever cries. This position will, we know, be disputed; and a child is said to be peevish, fretful, and uneasy, when the nurse is careless and inattentive. Dispositions undoubtedly differ; but the parent, who finds a child constantly crying, should suspect her nurse, and even herself. One cause of this fretfulness is the opinion that the nurse knows when the child should sleep, or eat, better than itself. It is forced to feed when not hungry, and to sleep when eager for play or amusement. We have often cured this disease, by correcting the attendant. It indeed happens that some children will not sleep by night, but even this may be conquered by management; for the healthy child may be amused during the day, and his amusements may be gradually protracted till night approaches. Disposition and fancies show themselves very early to the attentive observer; and, when reason has not yet attained its power, to correct them with violence, irritates without amending. Even at an early age, children may be soothed into regularity and obedience: they cannot be forced. If a child screams suddenly, he is undoubtedly ill, and should be carefully attended to.

A healthy infant is fond of exercise. He should be moved gently up and down, but without any shocks. On this account the modern cot is preferable to the cradle, for the child may be shook by the latter into a stupor, which a nurse will take care to do, as it saves her the trouble of attending to the infant's play. In dandling the child, great inconveniencies arise from compressing the breast. The child sits on the left hand, and, to prevent accidents, leans forward against the right placed on its breast. If the nurse is timid, or if the child starts, the only security is to clasp the breast, by which the ribs are often compressed. If, however, the right hand is placed under the arm, with the thumb over the shoulder, an active child may even start from the other hand without danger. The right hand will support it, or convey it gently to the ground. Swinging seems to give children an uneasy feeling, and even being carried quickly down stairs will make them shrink to the nurse's breast. This is almost the only instinctive feeling that, after much observation of children, has occurred to us. Gentle friction is an excellent addition to exercise, and peculiarly grateful to infants.

The pathology of the infant state is slight and simple. From the disproportioned size of the head, accumulations in this organ are frequent, and almost every fever is attended with a considerable load in the brain. The only peculiar disease of the head is hydrocephalus, though apoplexy and palsy have, at times, attended the infant state. A great difficulty arises in distinguishing the accumulation of water from fever. This is not, indeed, easy, but often unnecessary, since the treatment does not greatly differ; free evacuations from the bowels being equally indispensable in both. Accumulations in the stomach and intestines are the great source of childrens complaints. A considerable quantity of mucus is a part almost of their constitution, and it is this accumulation which occasions worms, diarrhœas, and convulsions. Emetics and cathartics are therefore the chief remedies, and the most active drastics are borne with ease, and even advantage. A child may more safely take five grains of calomel than an adult; and often two or three grains of gutta gamba will not produce a considerable discharge. Suffocation, considered as the disease of children, is, we fear, always the creature of art, the effect of indulgence arising from too great warmth, and more frequently from fulness.

The prophylactic management of children is not a very abstruse subject. Early hours, moderate warmth, exercise in the open air, to as great a degree as their strength admits, with a proper attention to their diet (see DIÆTA), and the due regulation of the alvine discharges, comprise the whole. The medicines for children should be few and simple. Their stomachs abound with acids, which change the bile to a green colour, and thus tinges the stools with the same hue. The anxious parent, on this appearance, flies to absorbents; but, while the child continues lively and cheerful, and the stools are neither too copious nor too few, no remedy is necessary. In early infancy a child has generally

from three to five motions in twenty-four hours. This number lessens; and, at the age of two years, there are seldom more than two daily. Constitutions differ in this respect, and we have known an infant continue in perfect health with one motion only in twenty-four hours.

See Percival's Essays, Medical and Experimental, ed. 2. p. 363—367; Armstrong on the Management and Diseases of Children. Cadogan's Essay on the Management of Children. Harris on the Diseases of Children, translated by Martin. Clark's Directions for the Management of Children. Moss on Nursing.

INFE'CTIO, (from *inficio, to infect*). See CONTAGIO.

INFE'LIX LIGNUM. See SAMBUCUS.

INFERNA'LIS LA'PIS, (from its burning and destructive property). Caustic made by evaporating strong soap-leys almost to dryness. See CAUSTICUM COMMUNE FORTIUS. It is sometimes used instead of the causticum lunare, and often is distinguished by the same name. See ARGENTUM.

INFE'RUS, (from *infra, beneath*). Situated beneath another part.

INFIBULA'TIO, (from *infibulo, to button together*). INFIBULATION. This operation is the reverse of circumcision; for it confines the prepuce over the glans penis, to prevent its being drawn back. That part of the prepuce which extends beyond the glands is perforated by a needle armed with a waxed thread, which is moved backward and forward every day until a cicatrix is formed. After this the fibula is fixed.

The ancient Romans thus used to prevent in their singing boys premature venery, to preserve their voices. See Celsus, lib. vii. cap. xxv. The fibula seems to have been a kind of ring.

INFLAMMA'TIO, (from *inflammo, to burn*); *Phlegmone*; *Phlogosis*; INFLAMMATION. *Phlegma*, Hippocrates; *oxyphlegmasia*; a topical pain, with an injury of the functions of an internal organ, attended with inflammatory fever, and the appearance of a buffy coat on the blood. External inflammation is characterised by a redness, heat, and a painful tension of the affected part.

The most obvious idea which the symptoms of inflammation suggest, is that of an accumulation of blood in the vessels, and its confinement in a given part. The conclusion, however, is too general; for the veins of the part are often swollen, and the secretions from the neighbouring glands sometimes increased in quantity. The accumulation has, however, suggested the idea of its arising from a stimulus, and the confinement of the fluids in the part the idea of obstruction. It is obvious, that a stimulus will produce inflammation; but when this is removed, the inflammation ceases. Obstruction then has been the leading principle in every theory of inflammation, especially when pathologists had remarked, that obstruction alone excites the action of the vascular system.

The source of this obstruction has differed according to the fancy of the enquirer. It was first supposed to be too great viscidity of the blood, and we were triumphantly shown the dense buffy coat on its surface, when drawn; but we now know, that the whole mass of the crassamentum is not preternaturally dense or viscid, for that the basis of the clot is loose in proportion to the density of the surface. Another opinion was, that as there appeared to be a series of vessels of decreasing diameters, and evidently some into which the red globules were unable to enter from their size, inflammation might consist in these globules being impelled into vessels not adapted for them, where they were confined, occasioning, from their obstruction, inflammations. This is the famous *error loci* of Boerhaave, and there is no doubt of this "error" taking place; but we shall find it to be an effect, not a cause. Dr. Cullen considers the obstruction as owing to spasm. "That a spasm of the extreme vessels takes place in inflammation is presumed, he observes, from what is at the same time the state of the whole arterial system. In all considerable inflammations, though arising in one part only, an affection is communicated to the whole system; in consequence of which, an inflammation is readily produced in other parts besides that first affected. This general affection is well known to physicians under the name of *diathesis phlogistica*. It most commonly appears in persons of the most rigid fibres; is often manifestly induced by the tonic or astringent power of cold; increased by all tonic and stimulant powers applied to the body; always attended by a hardness of the pulse; and most effectually taken off by the relaxing power of blood-letting. From these circumstances it is probable, that the diathesis phlogistica consists in an increased tone, or contractility, and perhaps contraction, of the muscular fibres of the whole arterial system."

Thus rested the state of opinions for many years, when a new opinion arose in the school of Edinburgh; an opinion, however, of private teachers rather than of the professors, that inflammation was owing to a debility of the vessels of the part affected, admitting of considerable distension; or, at least, to a disturbance of the balance between the action of the larger vessels and that of the capillaries, in which inflammation is seated. This opinion has been published by Dr. Wilson, in his third volume on Febrile Diseases, and attributed to Dr. Lubbock, or a Mr. Allen, who, we believe, gave a course of lectures on physiology in that university. We had, many years since, formed a similar opinion, when digesting the observations already offered on fevers, which attributes the phænomena of these to a change in the equilibrium of the circulation. We mention this circumstance neither to detract from these authors' credit, nor to add to our own; but, as some confirmation of the claim, we may suggest the consistency of this doctrine, with the view we have given of fever in general.

In our explanation of fever, we attempted to prove that debility was the first change which took place; and, in all the varieties and changes of appearances, debility, we remarked, was always the leading feature. With a view to inflammation, we observed, that while there was a quiescence of the capillaries, probably a spasm, since debility is its general and principal cause, the action of the sanguiferous system was excited, but that the excitement was partial. If then, from any cause, this action is excited in a peculiar degree, and if any debility in a given part concurs, inflammation will be the consequence. These are not hypothetical positions. Inflammations chiefly occur in the young, the robust, and sanguine, whose habit, or diathesis, is inflammatory, and from hence called *phlogistic*, a term derived, like

inflammation, from fire, before phlogiston had an existence in chemistry. The phlogistic diathesis consists in a strong action of the arterial system, and increased tone and vigour of the active powers of the circulation, which are evident from the strong, hard pulse, and the general firmness of the whole habit. If any of fever happens, it will be evident that the action of the arterial system will be, in such constitutions, inordinate. The partial debility is also equally conspicuous. No more certain cause of rheumatism exists than topical cold, after the part has been unusually heated; of peripneumony, than previously having breathed warm air; and of any inflammation, than from the same part having been formerly affected with the same disease. All these circumstances point out previous topical debility, a quiescence which admits of accumulation, in which inflammation seems to consist.

This forms however the extreme case: various are the intermediate ones, in which, though the balance is disturbed, the vis a tergo is more or less violent in proportion to the debility, or the debility more or less considerable in proportion to the former force. When in a healthy state a part is rubbed or irritated, a redness comes on, which on the cessation of the cause again recedes. This can scarcely be called inflammation, for it is not a disease In fact, the balance of the circulation is not disturbed; but if the motion of the fluids is interrupted, and their return by the veins impeded, the usual consequences of obstruction follow; the vis a tergo is increased, the vessels distended and weakened. If, on the contrary, a part is weakened, as by cold, the fluids accumulate without any increase of the vis a tergo, become red and livid, but by the gradual approach of warmth again recover their usual appearance. This again is not disease; but if the cold is farther continued, so that the power of the arteries behind cannot propel the fluids, chilblains and gangrene ensue.

The great subject of debate has been, whether obstruction really exists in inflammation. Dr. Wilson, from microscopical observations, is convinced that this is the case. We have said that the conclusion is too general. It seems to fulfil all the idea of inflammation, if from a disturbed balance in the circulation the blood is accumulated in a part faster than it is conveyed away by the veins or exhalents. Obstruction is not necessary to explain the phenomena; and in some instances, as we have said, the veins swell, and the discharge from the neighbouring exhalents is increased. Yet we are willing to admit, that in every violent inflammation obstruction does take place; but it is unnecessary to distinguish the circumstances with accuracy, as the explanation of the symptoms or the cure will not be affected by the decision.

The view of inflammation thus given will sufficiently explain almost all the varieties, and give a consistency to the method of cure. The only kind whose pathology is less obviously derived from the foregoing remark, is erysipelatous inflammation. The only difficulty however arises from the inaccuracy of language. We are accustomed to call those internal inflammations erysipelatous, in which the action of the arteries, so far from being increased, are weakened, and which hasten to gangrene rather than suppuration. There is not, however, the slightest evidence that the state of inflammation internally resembles the external appearance usually denominated an erysipelatous eruption, for this is properly an exanthematous disease, except when in the fauces, where a similar appearance attends the gangrenous throat; but in this case the eruption is a symptom only, and the inactive inflammation hastening to gangrene the real disease. All the additional explanation will appear from the ratio symptomatum, to which we proceed.

The leading symptom of inflammation is *redness*, which has been usually explained from the entrance of the red globules into vessels not adapted to their diameters. This error loci we believe really takes place; but, independent of this cause, the redness proceeds in part from slight extravasations in consequence of rupture, but chiefly depends on the greater quantity of the red globules from dilatation and accumulation. It appeared from the microscopical observations of Dr. Wilson, that slight irritation, instead of producing redness, occasioned paleness, in consequence of the more rapid circulation, and that the redness did not appear until the appearances of the blood's motion had ceased. It must be remarked, however, that these experiments are, in part, fallacious. The circulation cannot be observed but in transparent organs; and when vessels are distended so as to admit of considerable accumulation of blood they are no longer transparent.

Increased heat is another symptom equally characteristic of inflammation, and this was easily explained by the pathologist from the increased circulation, and consequently increased friction. We know, however, that the change in the blood's capacity for heat, which takes place during the circulation, is equally going on during its stagnation, and when a larger quantity is accumulated in a part, the heat given out in consequence of this change must be necessarily greater. On the approach of gangrene the parts are cold; but this change never takes place till the blood has already assumed a livid hue, and of course has yielded all the heat which could be separated in consequence of this change of capacity.

The *pain* is more easily explained from the distension, and the spasm which also must take place in consequence of the distension. It will be obvious also, that where the vessels are closely confined in membranes, they admit of distension with difficulty, and the pain is proportionally increased. The pain is also in proportion to the sensibility of the organ and the diathesis phlogistica, where the disease in a great degree arises from the violent action of the vis a tergo. On both these accounts, the inflammation of the eye is attended with the most excruciating pain. Ligaments and tendons when inflamed are also acutely sensible, though their sensibility is inconsiderable in the sound state. The source of the only other symptom, *the swelling*, is sufficiently obvious.

The *remote causes of inflammation* are either general or topical. The general causes are those of fever, determined in their seat by some accidental cause, generally some debility of the part. Inflammations of this kind are usually inflammatory, arising from excess of action in the larger arteries; but in different states of the atmosphere, or rather in different epidemic constitutions, either a less degree of phlogistic diathesis will produce the accumulation, or the balance is destroyed by the loss of tone in the affected part; often not with-

out suspicion of a morbid poison determined to the part, particularly in the putrid sore throat, which seems rather an exanthema than a phlegmasia.

Of the topical causes but a few only are direct stimuli. A thorn in the flesh is one of the most familiar instances of this kind; chemical acrids produce the same effects; but a more frequent cause in the human body is any extraneous body, or any portion of the body deprived of life which acts as such. These continued irritations seem to produce those inflammations, in which, as we have said, there is no decisive evidence of obstruction.

The other topical causes are those of indirect debility, as burning, overstretching, concussions, &c. which we have already shown, with a view to this subject, act by producing atony. The coup de soleil, at least in this country, appears to have a similar effect. See ICTUS SOLARIS.

The *terminations* of inflammation are said to be by *resolution*, by *abscess*, by *gangrene*, and *schirrus*; but this offers a very fallacious view of the subject. In fact, the salutary terminations of inflammation are by effusion and abscess; the fatal ones most commonly by hæmorrhage and gangrene. Schirrus is usually a previous disease, and excited to cancer by inflammation.

When an inflammation either by the operations of nature or the influence of remedies yields, an action is first perceived in the vessel, the dark colour assumes a brighter hue, the tumour lessens, and an effusion takes place from the adjoining exhalents. The effusion sometimes proceeds and relieves the over-distended vessel, but there is scarcely an instance of resolution of inflammation, without some effusion, which occasions the adhesion of contiguous membranes. It consists of the serum of the blood, with its proportion of fibrin. This is commonly the termination of the febrile inflammations. In those which depend on the loss of tone, the effusion is of a different kind; and in these, though it relieves the original disease, yet it leaves one scarcely less dangerous. We allude to the effusion of a watery fluid which sometimes follows inflammation of the lungs, producing hydrothorax. When œdematous swellings follow gout or rheumatism, the danger is less.

When nature or art fail in relieving the inflammation by effusion, the texture of the part is destroyed by the continued pressure of the accumulated fluids, and the whole is melted down into one uniform, opaque, white, mild fluid, called *pus*, and an *abscess* is said to be formed. The appearance of an abscess is prognosticated by the cessation of the pain, and the distension. But to these symptoms, which occur also on effusion taking place, must be added a throbbing pain, synchronous with the dilatation of the arteries, and irregular shiverings. After a short time a weight is felt in the part, the pain disappears, and, if on the surface, the tumour is soft, and an evident fluctuation is perceived by the touch. The skin gradually becomes thinner, and a little conical apex appears, generally about the centre of the tumour, which is called its pointing; though frequently the skin only becomes thinner, and the tumour softer in one particular part, above, below, or on either side indiscriminately, and seemingly from accident.

The nature of purulent matter, as well as its source, has been disputed. We have called it a mild fluid, and undoubtedly to all the senses it is so; yet it seems to dissolve the cellular substance around, and to form for itself a cavity greater in proportion to the resistance it finds in its way to the surface, where it generally tends. When not the salutary termination of inflammation, it is sometimes highly acrid, as in venereal or scorbutic sores; but its reputed acrimony in other cases arises often from its pressure, which destroys the life of the part, and subjects it to the action of the absorbent vessels. An aneurism, in which there is not the slightest suspicion of acrimony, will do the same.

The source of the purulent matter is said to be the serum of the blood, changed to this form by the process of fermentation. This was the opinion of Gaber and Pringle; but De Haen and some modern authors contend, that it is a morbid secretion from the exhalent arteries. On this subject we find it difficult to form an opinion. Were we to offer any, we should say that it consists of the substance of the vessels, and of the cellular membrane dissolved in the serum; but this is an opinion we are not prepared to defend. It is certainly an albuminous fluid, which has however a tendency to the putrid fermentation. To produce this fluid a certain degree of excitement of the vessels is requisite. When too considerable, it is sometimes bloody; when the excitement is in too small a degree, it is thin, acrid, and glairy; when in a still less, ichorous. In the latter cases we must apply stimulants and astringents respectively, for only when the pus is of a proper nature and consistence, in the language of surgeons laudable, does it contribute to healing the wound.

There is another fluid, which certainly is not laudable, viz. that which is found in scrophulous glands, and which is discharged in consumptive cases. This is of a ragged cheesy kind, surrounded generally with streaks of proper pus, apparently from the inflammation of the coats of the containing cyst. It seems to consist of the gluten of the blood so hardened and condensed that it will not admit of solution. The distinction between pus and mucus is not easy to the inexperienced practitioner. In general, mucus is in rounded masses; pus flows more readily: the latter is softer and whiter, with little globules swimming through it, and when mixed with a saturated solution of potash, a transparent tenacious jelly is separated, while the same solution produces no such change in mucus.

The fatal terminations are *hæmorrhage* and *gangrene*. We might have mentioned hæmorrhage among the salutary terminations, but they rarely prove so in this climate; yet occasionally a slight bleeding from the neighbouring glands, as a bloody tinge of the sputum in pneumonia, we have thought useful. In general, however, the salutary hæmorrhages are copious ones, generally from a neighbouring organ, as from the nose in phrenitis; but these are uncommon in this climate. The fatal hæmorrhages occur in the lungs, in the bowels, and bladder, but are not very common terminations.

Gangrene is a fatal termination in the very active inflammations, where the fever runs with peculiar rapidity, or in the very low ones, where want of tone readily admits of considerable dilatation, and consequently compression. In gangrenes the life of the part is destroyed, the redness assumes a livid hue, vesications appear on the surface, and the inflammation is external; pain is no longer felt, a peculiar serenity comes on, with a sinking of the features, which gives a ghastly ap-

pearance to the countenance, and the patient dies with every feeling and every expectation of recovery. When a putrid acrimony occurs in the fluids, gangrene is more to be dreaded in inflammations of every kind: it is particularly common in those diseases which occur in jails and crowded hospitals. There is a kind of gangrene which follows considerable irritation and violent pain, independent of great inflammation. In this case the violence of the excitement seems at once to destroy the tone of the part, and it is in this kind that Mr. Pott has found opium so eminently useful. Some authors have supposed gangrene to be occasionally owing to blood effused; but we have no evidence that blood, if preserved from the access of air, is peculiarly disposed to putrefaction. See ERYSIPELAS, ABSCESSUS, and MORTIFICATIO.

It may appear that, in this disquisition, we have omitted the inflammations of the mucous membranes. These, however, make no part of the present subject; for they arise very generally from a morbid poison, carried to the glands, and the inflammation excited in these organs is attended with an increased or a vitiated discharge. If it were necessary to reduce them to this head, they would be found to resemble the inflammations excited by mechanical or chemical acrids without obstruction.

The prognostics in inflammations are more or less favourable in proportion to the importance of the part affected, the constitution of the patient, the violence of the symptoms, and the coincidence of other diseases. Inflammations of the glands, of the ligaments, and the tendons, are tedious in their progress, and the two last leave a disposition for the future attack of a similar disease.

The CURE OF INFLAMMATION will, we think, be greatly elucidated by the former enquiries; and for this purpose, inflammations must be divided into those attended with a phlogistic diathesis, and those in which distension and dilatation arise in a greater degree from atony than an increased vis a tergo. This distinction cannot be made with accuracy, for the two kinds pass into each other by almost undistinguishable shades. Yet the difference is real, and it will be only necessary to modify the treatment of each when it approaches the confines of the other.

The chief remedy of the active inflammations is *bleeding*, and blood must be often taken in large quantities from a large orifice, since the relaxation which it produces is in proportion to the quantity lost in a given time. If we peruse the writings of physicians in the early part of the last century, we shall perceive that they bled freely and repeatedly, where we find a single evacuation only admissible. Constitutions are greatly changed in this respect; luxury has enervated our habits, and the changes in diet have greatly lessened that active constitutional power which forms the essence of the inflammations now before us. In the robust labourer, in a cold season, where the disease has arisen from cold to which the body when heated has been exposed, a large bleeding may be repeated; but in a crowded city, with a person whose constitution has been enervated by a sedentary occupation, or by luxury, whatever the appearances may be, bleeding must be cautiously employed. After a general bleeding, modern refinement, adapting the remedy to the change of constitution, has employed topical bleedings either by means of leeches or cupping glasses, which relieve the distended vessels, without too far debilitating the system. The inflammations to which copious and active bleeding are chiefly adapted seem to be phrenitis, carditis, pneumonia, rheumatism, and perhaps the psoas inflammation, when it is certainly known to exist.

Emetics we have seen producing relaxation through the whole system; and though they may appear to be contraindicated, when we recollect that a partial debility favours the inflammatory distension, yet any inconvenience which this may occasion is compensated by the freedom which they restore to the circulation in general. In conformation of this idea, we find, that in the other class of inflammations, where the circulation is more languid, they are injurious; and if given in the ulcerated throat, it is rather with a view of emulging the glands of that part, an effect which renders them so useful in pneumonia, than of counteracting an inflammatory state. The nauseating doses of antimonials are peculiarly useful in such active inflammations; nor in diseases of short duration, in constitutions peculiarly strong, have we any thing to apprehend from their debilitating effects. In all inflammations of this kind, it must be remembered that the increased inordinate action of the arterial system is the chief disease.

Cathartics are not generally indicated in these complaints; yet, as they draw the fluids powerfully from the head, and from the chylopoetic viscera, they are useful in inflammations of these parts, as they act without increasing the phlogistic diathesis in general. They are most advantageous in the earlier stages; nor need we wait till the increased action of the arterial system is taken off by bleeding. As cathartics are peculiarly useful in phrenitis and enteritis, so are they injurious in pneumonia. As evacuants, they are perhaps singularly advantageous in rheumatism; though the inconvenience of moving renders them less eligible to the patient than other remedies.

Diaphoretics are apparently well adapted to active inflammation, from the effects which we have already had occasion to explain. In general, however, their stimulant power renders them less advantageous in those cases where the vis a tergo is very actively increased. To this there is only one exception, viz. where the evacuation is from the neighbourhood of the organs affected, as in rheumatism; for it compensates for any disadvantage that would otherwise arise from the increase of the circulation. In general, however, the relaxing diaphoretics, as the nauseating doses of emetics, and the combinations of opium, with either the ipecacuanha in Dover's, the white hellebore in Ward's powder, or with the warmer preparations of guaiacum, are most effectual.

Opium, which we have styled the most certain and powerful diaphoretic, is not always admissible; it is said from its stimulus, but this is generally inconsiderable, and sometimes unobserved. The chief disadvantage of opium arises from its checking the secretions, so essentially necessary in many of the active inflammations, particularly in pneumonia, hepatitis, and enteritis. When this inconvenience is obviated, as we shall find in speaking of each disease, opium is an useful remedy, and it is occasionally employed, in each, with advantage.

Blisters are of the highest importance in inflamma-

tions of every kind; but when the inflammatory diathesis is considerable, they fail of relieving; and it will be obvious, that while the disease continues in consequence of the force of the arterial system, the advantages derived from topical depletion cannot be considerable. In the most active inflammations we have sometimes found it necessary to bleed previous to each application of a blister, particularly in rheumatisms, where blisters must be often repeated.

Sedatives of every kind are essentially necessary. A class of medicines which we have styled *inirritants*, which we shall soon notice, and which consists of those diluents and demulcents which sooth and sheath the irritations of the nervous system, or inflamed membranes, are highly useful in these active inflammations. The other sedatives employed with advantage in such cases are nitre and camphor. The utility of the former is generally acknowledged, except in inflammations of the bladder, where large doses are supposed to produce some additional irritation. The latter is not so generally employed, as it is thought to prove occasionally stimulant, and by some practitioners to be useless. In small doses, however, we have repeatedly found it an advantageous medicine, particularly in those cases where nitre seems to produce too great an irritation. Some of the narcotics promise to be useful in such cases, particularly the hemlock and the digitalis; but they have not been often employed, and of their advantages we cannot speak from experience.

Cold, as a privation of heat, has been considered as an active remedy of inflammation, and employed very freely of late, in one species, the gout. (See ARTHRITIS.) In general, however, it is a doubtful and uncertain remedy. When temporarily employed, it is followed by increased action, and will of course exasperate the disease; when continued it occasions torpor, and may produce or hasten gangrene In external phlegmons it is of use in the early periods, and will sometimes contribute to their resolution; but in internal phlegmasiæ it is generally a dangerous remedy.

It may be questioned, however, whether, when we avoid cold, we should freely indulge a higher temperature. The reason for employing heat has been to promote perspiration, and consequently to relieve internal accumulations; but we have found reason to doubt whether the discharge from the skin, brought on by high temperatures, is truly salutary. In general it appears otherwise; and the warm diaphoretics, of which warm air and warm fluids are the principal, appear to injure more by increasing the circulation, than they relieve by the discharge they produce from the surface. When then we would avoid cold, we would not indulge heat. The temperature of the room should be moderate, and scarcely exceed 62°; the drinks tepid, somewhat about the heat of new milk, a degree peculiarly soothing to the irritated nerves. See INIRRITANTIA.

As cold applications are admitted in phlegmons, it may be considered that they would be equally beneficial where the cold air is applied to the part, as in pneumonia, and sore throat. In the latter, cold applications are sometimes useful; and nitre or sal prunellæ held in the mouth has been said to relieve the inflammatory angina. The lungs are, however, more irritable; and though great heat is injurious, extreme cold is equally so; nor can we sink the temperature of the room, or of the drinks far below the degrees stated, though perhaps they may be somewhat diminished with advantage. Of this, however, the feelings of the patient are the proper criteria.

Phrenitis and pneumonia are perhaps the only inflammations which form an exception to the general rule, respecting the utility of a *recumbent posture*. In the former the erect position is highly advantageous; and it has been supposed equally useful in the latter: but the subject will be resumed when we speak separately of each.

Inflammations, as the habit is less inflammatory, and the circulation less actively excited, require these remedies in a less degree and diminished power. When we approach that low state in which inflammation proceeds from atony, with a very slight, if any, increased circulation, we must be cautious in all the evacuations. Great inconvenience has arisen from a want of caution in professors and lecturers, who generally remark, in every inflammation, that, should the patient be young and plethoric, some blood may be taken. Many epidemic pneumonias and cynanches occur in which this evacuation would be fatal in forty-eight hours. In the Breslaw epidemic, though attended with topical inflammation from atony, so debilitating was the cause, as at once to take off rheumatic pains. The practitioner must consequently attend with care to the reigning epidemic; to the state of the pulse; to the countenance, and all the circumstances which indicate debility; and he must be particularly cautious not to mistake a pulse throbbing from irritation for a hard inflammatory one. The countenance often furnishes a very certain index: if the features are sunk, the eyes staring, the expression lost, whatever are the other symptoms, bleeding must be avoided. The warmer diaphoretics must be preferred also to the nauseating or relaxing ones; and cathartics, particularly the purgatives, carefully avoided. In the more asthenic inflammations of this kind, we must soon have recourse to bark, and the warmest cordials; nor will blisters, as we have had occasion to remark, be always safe. Many modifications of these directions will occur under the separate diseases.

External inflammation is more within the reach of the sight and touch; and to this the former directions are only applicable, when attended with general fever. If not in the vicinity of any large vessel, or in a situation peculiarly inconvenient, we are seldom anxious about its resolution, but suffer it to proceed to suppuration. If it arises from wounds or bruises, the remedies styled *discutient* are useful: these are warm and astringent applications, capable of exciting the torpid action of the vessels, and restoring the tone destroyed by the blow. If these do not succeed, and the accumulation is followed by increased action from behind, the vessels are depleted by topical bleeding, and our discutients applied with increased power, or more frequently repeated. In all such cases, practice gives the firmest support to theory, for emollients are constantly forbidden where resolution is attempted. The use of the preparations of lead rests on some uncertainty. This metal is an apparent exception to the general tonic powers of metallic substances: it seems to render the nerves torpid, and the muscular fibres less

irritable. It is not, therefore, always proper in inflammations where the action of the vessels is inconsiderable; but, in watery solutions, a valuable remedy where the circulation is pushed on with increased energy. When we aim at producing suppuration, gentle and continued warmth, sometimes with a slight stimulus, favours the dilatation of the arteries, and lessens the resistance of the skin. (See FURUNCULUS.) In indolent tumours, the stimulant applications are most useful; in highly inflammatory states, the emollients, with anodynes.

Dr. Cullen has inserted, among the species of phlogosis (external inflammation), erysipelas; but apparently without due consideration, as its nature and symptoms differ essentially from phlogosis. When attended with fever, it is an exanthema; and, when without it, a cutaneous disease.

When inflammation attacks the glands independent of fever, the lymphatic glands chiefly suffer, and the treatment of these is not very different from that of phlogosis. In general, resolution is attempted by topical evacuations, by sedatives, or occasionally by those remedies which excite the action of the minuter vessels. We shall, however, enlarge on this subject, under the diseases where they chiefly occur, viz. SYPHILIS and SCROPHULA. q. v.

It might be expected that we should distinguish the inflammations, attended to the active energy of the whole arterial system, from those which are rather owing to atony; but in general these form varieties only, as the putrid peripneumonia, the ulcered throat, &c. Were we to make any approach to such distinction, we should arrange them in the following order, from the system of Dr. Cullen:

I. *Inflammations peculiarly active.*
- Phrenitis.
- Ophthalmia epidemica (Egyptian Ophthalmy).
- Cynanche.
  - Trachealis and Pharyngea.
- Pneumonia.
- Rheumatismus.

II. *Inflammations less active.*
- Phlogosis.
- Opthalmia.
  - Membranarum and Tarsi.
- Cynanche.
  - Trachealis.
- Carditis.
- Peritontis.
- Gastritis.
  - Phlegmonodea.
- Enteritis.
- Hepatitis.
- Splenitis.
- Nephritis.
- Cystitis.
- Hysteritis.
- Odontalgia.
- Podagra.

III. *Atonic Inflammations.*
- Anthrax.
- Cynanche.
  - Maligna.
- Pneumonia.
  - Putrida.
- Gastritis and Enteritis.
  - Erysipelatosa.
- Arthropuosis.
- Podagra.
  - Aberrans.

Bell on Ulcers, edit. 3, p. 17—36. 47—53; Cullen's First Lines, edit. 4, vol. i. p. 211; Kirkland's Medical Surgery, vol. i. p. 235; Pearson's Principles of Surgery, vol. i.; White's Surgery, vol. i.; Wilson on Febrile Diseases.

1. INFLAMMATION IN A JOINT. See RHEUMATISMUS and HYDRARTHUS.

2. INFLAMMATION OF THE HEART, *carditis.* Dr. Cullen has placed the *inflammatio pulmonis Lommii*, and *pericarditis*, as synonyms, under this genus, included in the class *pyrexiæ*, and order *febres*, defining it to be fever, with pain in the region of the heart, anxiety, difficulty of breathing, cough, unequal pulse, palpitation, and fainting: in this case also the pulse is small, irregular, and intermittent; the patient frequently faints, and if not speedily relieved the disorder soon becomes fatal. The method of cure is not peculiar, but resembles that of other internal inflammations of the chest. Though the pulse is soft, bleeding, it is said, must be carried to a greater extent than in pneumonia or pleuritis; but in other respects the cure does not greatly differ from that of pneumonia. Where we have suspected carditis we have thought the camphor peculiarly useful. It often seems to succeed pneumonia, or rather the inflammation appears to be communicated from the lungs to the heart or pericardium. See Senac sur le Cœur; Lieutaud's Historia Anatomico Medica; and INFLAMMATIO PERICARDII, NO. 15.

3. INFLAMMATION OF THE FAUCES. See ANGINA.

4. INFLAMMATION OF THE THIGH. Inflammation sometimes takes place under fascia lata femoris, followed by very unkindly suppurations. The usual remedies of active inflammation must be employed; but whenever matter is formed it should be discharged as soon as it is discovered.

The remedies of active inflammation do not always appear to be indicated by the violence of pain, or degree of fever, and the disease sometimes approaches in the insidious form of the psoas inflammation. It is distinguished, however, from the latter, by want of pain on bending the body. The diagnosis is, indeed, of less importance; as free bleeding and a sudorific regimen, with the relaxing diaphoretics, are useful in both. The inflammation of the thigh terminates more safely than that of the psoas muscle, though, as the matter falls down, the abscess does not soon appear, and then points at a very distant part. The sinus is, therefore, generally extensive, and requires a steady, though not a violent, pressure.

5. INFLAMMATION OF THE LIVER. See HEPATITIS.

6. INFLAMMATION OF THE INTESTINES; *enteritis.* Dr. Cullen places this disease in the class *pyrexiæ*, and order *phlegmasiæ*; defining it a typhus, attended with pungent, tensive, pain of the abdomen, chiefly felt round the umbilicus; a vomiting and obstinate constipation. He distinguishes two species.

1. ENTERITIS PHLEGMONODEA, inflammation of the bowels, with acute pain, strong febrile affection, vomiting, and costiveness.

2. ENTERITIS ERYSIPELATOSA, inflammation of the bowels, with pain and fever, more mild than the former, without vomiting, but with an attendant diarrhœa.

The disease consists in an inflammation of the external coat of the intestines, and differs greatly from an inflammation of the villous coat, or mucous membrane, usually attended with aphthæ or a dysentery. (See DYSENTERIA.) According to the different parts of the intestine in which the inflammation is seated, different names have been assigned; but the treatment is the same in all.

If a sharp pain, with a fever and nausea, is felt above the navel, and below the stomach, the colon under the stomach is the probable seat of the inflammation: if in the right hypochondrium, under the spurious ribs, then that part of the colon which joins the ilium may be affected: if in the middle of the belly about the navel, the small intestines. The different parts affected need not, however, be accurately discriminated, since, as we have observed, the method of cure is the same.

The causes are either those of fever in general, obstructions of any kind in the intestines, intususceptio, or wounds. The usual causes, however, are those of fever.

The symptoms are, a shivering, with an uneasiness in the bowels soon increasing to a violent pain, occasionally, at first, remitting, but soon becoming continual. Generally the whole abdomen is affected at the same time with spasmodic pains, which extend to the loins, apparently owing to flatulency. The pulse is small, frequent, generally soft, but sometimes hard, and at last irregular and intermittent. The extremities are cold; the strength sinks rapidly. Costiveness, which has sometimes preceded, becomes unconquerable, or slight mucous discharges are brought off with great straining. After a short time the flatulency increases to vomiting, and every thing is rejected. The tongue is dry, thirst great, the urine often obstructed, or high-coloured, and discharged with heat and difficulty. The breathing is quick. The patient bends forwards, because the abdominal muscles are spasmodically contracted; great tension and soreness are felt externally; the vomiting increases to violent and incessant retchings, in which at last the fœces are returned, and, after this scene of distress has continued, without relief from stools, the whole commotion ceases; the pain goes off, and the patient appears to be relieved; but his face grows pale, the under eyelid becomes livid; the pulse continues soft, more regular, though small and weak; the extremities are cold; delirium and convulsions come on; and the patient expires, often discharging very fetid stools in the moment of death.

This disorder seldom terminates in an abscess. When this is the case, the pain abates, and is converted rather into a sense of distension, and irregular cold fits, with other symptoms of internal suppuration; the pain, the great frequency of the pulse, and other symptoms, go off. When this abscess bursts, the patient swoons, and seems relieved from a sense of weight in the part where it was, but soon expires in cold sweats.

Inflammation in the external membrane of the intestines is distinguished from the stone in the kidneys or in the ureters, from the pain in the latter cases shooting down the thigh, from spasmodic pains of the belly, from colic, and from other obstructions there in which no inflammation attends, by the external soreness and fever.

The disease, however, with which it is most easily confounded, is the inflammation of the peritonæum, in which there is equal external soreness, and often an equally obstinate constipation. But in the latter, the pain is more pungent, the difficulty of raising the body greater, and when stools are procured the relief is inconsiderable. The passage of a gall-stone sometimes puts on the appearance of enteritis; but in this case the pulse is seldom affected; the pain is confined to the pit of the stomach, and at last shoots through the body to the back, in a manner that cannot easily be mistaken.

If the pain shifts, the vomiting returns only at intervals, and clysters procure a truly feculent discharge, there is room to hope. If the pain abates suddenly, with chillness and shivering, a suppuration is forming. When every thing is rejected, the patient very weak, the pulse fluttering, the countenance pale, the breath offensive, danger is imminent. Clammy sweats, a small intermitting pulse, fetid or black stools, a total abatement of pain, are signs of mortification, and death soon follows.

In the treatment of enteritis there is much doubt. We are ordered to bleed freely, though the pulse is small, and to repeat it till the pulse rises. When the patient is a laborious countryman, and the disease induced by drinking cold fluids in a heated state, this advice may be useful; but it is not generally so. Perhaps bleeding is more seldom necessary in this disease than in any other inflammation; for it rapidly tends to mortification; and, should it not at once relieve, it soon proves fatal. The salutary termination is by a discharge of fæces. If this can be obtained, the patient is safe; but, unless free, copious and truly feculent stools are procured, the most promising appearances in every other respect will deceive. These are procured by laxatives; but the operation of laxatives is assisted by clysters, blisters, and the warm bath. Emetics in this case are inadmissible; for vomiting soon comes on, and prevents the action of the only certain remedy. The cathartics, first used, are the milder kind, as castor oil, salts with infusion of sena and manna; but these are seldom sufficiently powerful, and are soon rejected. We must then have recourse to the more acrid purgatives, and the colocynth pill with calomel is substituted. This medicine is often given in considerable doses without effect; and the end is at last obtained by the former medicine, salts and sena.

In this period the operation of cathartics is greatly assisted by the frequent injection of clysters. These, to be effectual, should be of the most active kind; and the decoction of colocynth with salts, the infusion of tobacco, and the vinum antimoniale, have been employed in this way, often without apparent advantage; but the frequent solicitations downward seem to assist the operation of medicines given by the mouth.

In this course we are almost constantly interrupted by the vomiting, and it has been usual to add opium to the laxatives, to check that irritability of the stomach,

which discharges them. The disadvantage of this plan is, that it delays the cathartic effect of the medicine, till by the powers of the stomach its nature is changed. We have therefore, preferred omitting for a time the laxatives, and giving the opiates freely. If pain is checked, and the inflammatory state relieved by a blister, we have found no inconvenience, if the stools are delayed for a day or two. It is said, indeed, that the disease is fatal in three days; but this is owing probably to the bleeding: where this is omitted, the disease has continued for six or eight days, and at last terminated favourably.

If then the usual laxatives, assisted by clysters, do not procure motions, and violent vomiting comes on, a grain of opium may be given in a single pill. If this is rejected, a tea spoonful of the tinctura opii camphorata may be taken alone, and repeated every hour, till the stomach is quieter. This quantity is lost about the fauces, and its anodyne effect communicated to the stomach. We may, in the mean time, inject clysters; but should give nothing by the mouth, except a very small quantity of toast and water, or a very little peppermint tea. After about eight or ten hours, the colocynth pill with calomel, or the infusion of sena with salts, may be cautiously tried, in small quantities, at short intervals; and stools are often in this way successfully procured.

At any part of this period, if the soreness and tension is considerable, a blister may be applied to the abdomen, or the patient put in the warm bath. Each remedy contibutes to relieve the pain; but we have suspected that the warm bath hastens mortification. At least we have not been so successful, where it has been employed, as in those cases in which it has been omitted.

Dashing cold water against the legs and thighs, a remedy sometimes employed in the iliac passion, has been recommended in enteritis; but we suspect that it is not a safe remedy when inflammation has taken place. Bathing the abdomen with warm water, rendered more stimulant by camomile flowers and wormwood, generally precedes the application of blisters. Tartarised antimony, given in doses of a quarter or an eighth of a grain, and repeated every quarter of an hour, sometimes produces motions, when every other remedy has failed.

It often happens, that, in the moment of approaching mortification, a sudden resolution takes place, and stools are evacuated. The extremities have perhaps already began to grow cold, and languor to come on. In such cases, wine, with warm generous cordials, will prevent the approaching death, if the stools are freely kept up; but, either in this case, or when the relief is obtained at an earlier period, the evacuations from the bowels must be copious, free, and unremitted, while the stools are dark. It is too common to fear the debilitating effects of purging, and, after a few motions, to interpose opiates; but the debility must be indeed great to justify this conduct, for a relapse frequently follows.

See COLICA and ABSCESSUS INTESTINORUM.

The erythematic inflammation of the intestines may be treated as that of the stomach. See INFLAMMATIO VENTRICULI; Cullen's First Lines, vol. i. p. 372, edit. 4; Edinburgh Medical Commentaries, vol. iii. p. 722.

7. INFLAMMATION OF THE MAMMÆ, *mastodynia.* Dr. Cullen places this as a variety of the *phlogosis phlegmone:* and though it may happen at any time, it usually attacks those who give suck. A shivering most frequently precedes, and the inflammation, with more or less fever; a quick pulse, thirst, head-ach, and difficult respiration, follow.

As the usual methods to prevent the afflux of milk in the breast are uncertain; to guard against inflammation, the mother should consent to suckle her child, at least during the first month. After this time, by gradually discontinuing the sucking, keeping the bowels lax, and the breasts as empty as possible, by means of glasses, inflammation may be usually prevented. But if it should actually take place, bleeding, a thin spare diet, laxatives, and applying a sedative or discutient embrocation by means of linen rags, which should be moistened with it as often as they dry, will be generally successful. The lotio ammoniæ muriatæ of Mr. Justamond is prepared in the following manner: ℞. ammoniæ muriatæ ℥i. sps. rorismarini ℔i. In pulverem redige ammoniam, et in spiritu solvatur. In the early stage of this disease, the lotio ammoniæ acetatæ is recommended. ℞. aquæ ammoniæ acetatæ, sps. vin. rectif. aq. distillatæ āā℥iv. m. Some prefer the aqua ammoniæ acetatæ alone; or, a fomentation made of a decoction of poppy heads, in a pint of which an ounce of crude sal ammoniac is dissolved, will often succeed. To each of the lotions above mentioned the tinctura opii may be occasionally added. If the inflammation does not yield to this management, the best method is to encourage a suppuration without delay. See ABSCESSUS PECTORIS, and MAMMÆ; Bell's Surgery, vol. v. p. 396.

8. INFLAMMATION OF THE MEDIASTINUM, *mediastina.* The cause and cure are the same with that of pleurisy, and the symptoms are often similar. The pain, however, is more confined to the sternum, and shoots across to the back. There is a difficulty of breathing, with cough, but not always, attended with spitting. These symptoms are not so violent as in a pleurisy, nor is the pain on inspiration so much increased, or the inflammatory diathesis so great. Suppuration is with difficulty avoided, and generally fatal.

9. INFLAMMATION IN THE MESENTERY. See PERITONITIS.

In this disease there is a languid slow fever, without thirst or other violent symptom; a loss of appetite, a sense of tension, and weight below the stomach, without much hardness, and only discoverable by pressing on it. This tension is without much pain, because the mesentery hath but a small degree of sensibility. The stools are often chylous, and succeeded by a discharge of thin ichor, without any sense of pain; sometimes pure and unmixed, and sometimes mixed with the fæces. These symptoms are mild and gentle, if the mesentery only is inflamed; but if the liver, spleen, or any of the intestines, are also affected, they are more violent, and distinguished by the appropriate symptoms of each disease.

These inflammations generally terminate in abscesses; and the purulent matter is sometimes translated to other parts. The disorder, therefore, is often found to recur, and in this case sometimes the fever returns, or is occasionally changed into a colic. Inflammation of the mesentery is, however, very seldom an idiopathic

disease. It chiefly occurs when the glands are obstructed, and any cause of topical irritation combined.

When the presence of this inflammation can be discovered, the method of cure will be the same as that of an inflamed liver or spleen. Bleeding is, however, scarcely admissible.

INFLAMMATION OF THE MUSCLES OF THE BELLY, *myocoilitis* of Vogel.

When these muscles are inflamed, the skin is greatly distended; and if they are swelled, the figure of each is often preserved; and fever generally attends. Pain is considerably augmented in sneezing, straining at stool, breathing, or any exertion, and is often felt at the origin or insertion of the muscles, which distinguishes this inflammation from any internal one.

The rheumatism sometimes attacks these muscles; and they suffer from pressure, when patients from a stone in their bladder seek for relief, by resting their weight upon some hard body in a prostrate position.

This complaint is easily distinguished from a colic, an inflammation in the liver, or any of the subjacent viscera, by the considerable distension, the very early soreness, and the circumstance just mentioned, viz. the pain shooting to the false ribs and the spine of the ileum.

The myocolitis scarcely in any instance terminates in mortification or abscess. It is very commonly of the rheumatic kind, and yields to general and topical remedies, the latter of which may approach very near the seat of the disease. Fomentations are particularly useful; but the disease is rare.

If the hardness is considerable, and a throbbing pain perceived, an abscess is forming, and should be encouraged by emollients, that the discharge may be external. Heurnius observes, that these muscles are covered with so dense a membrane, that abscesses require the knife; and if the opening is neglected, they sometimes become schirrous. Hildanus thinks that these tumours should be opened more early than is usual in other instances, to secure an external discharge; for the matter is apt to pass betwixt the muscles, and form sinuous ulcers, as bandages cannot easily be applied. The cold air is particularly offensive, and the air in the room should be moderately warm, when the abscess is opened, or the wound dressed.

Bleeding, with purging, and such other means as are used in inflammations of the external parts, should be employed, and steadily pursued.

11. INFLAMMATION OF THE EYE. See OPHTHALMIA.

12. INFLAMMATION OF THE ŒSOPHAGUS sometimes attends ANGINA, q. v.; but is occasionally an idiopathic disease. We have mentioned it under the title of *angina pharyngea*, described by Eller *de Cognoscendis, & curandis morbis*, p. 172. It is the *angina sine tumore* of the ancients, and is relieved by cooling subacid drinks. Eller recommends external cataplasms to draw any matter that may be formed outwardly, but no danger of this kind seems to impend. We have seen it occasionally as the effect of swallowing acrimonious fluids, and once from a pill of calomel sticking in the pharynx; but in each case the inflammation was followed by no disagreeable consequences; nor was the disease obstinate.

13. INFLAMMA'TIO OMENTA'LIS. See PERITONITIS.

14. INFLAMMATION OF THE BONES. The blood-vessels from the periosteum to the bones run between their laminæ, whilst others pass through particular perforations to the diploe of the cranium, and the marrow in the bones; from these arise the separation of the corrupted parts, and the restitution of such as are lost. Inflammation may, therefore, be seated in the bones, and is attended with obstinate and violent pains, seeming to the patient to be deep seated. Hence also arises a spina ventosa, &c. See INFLAMMATIO PERIOSTEI, N° 16.

15. INFLAMMATION OF THE PERICARDIUM, *pericarditis*, which Dr. Cullen considers as synonymous with carditis, or inflammation of the heart; adding, that "the pericardium has been known often to be inflamed, without any other symptoms attendant, except those of a peripneumony." The pain, however, seems to be deeper seated, and is not so much increased upon inspiration. The cure is the same with that of pleurisy or peripneumony.

16. INFLAMMATION OF THE PERIOSTEUM. Besides the other usual causes of inflammation in other parts, the venereal disease and the scurvy induce it in this. The venereal poison is a frequent cause, when the periosteum within the bone is the seat of the disorder.

When the external periosteum is inflamed, a deep-seated pain, heat, and sometimes a pulsation are felt; and, when the part is not thickly covered, the pain will be augmented by pressure: muscular motion, however, always increases it. That the membrane which lines the bone internally is the seat of the inflammation appears probable, from the want of pain on pressure, or motion; by the absence of pulsation; by receiving no relief from any position of the pained part; and particularly by a sensation of the bone outwardly, splitting from within.

Inflammations in both membranes of the bone proceed from the same causes, produce the same effects on the part of the bone to which they adhere, and terminate either in an abscess or a gangrene; but when the inner membrane is affected with gangrene, the marrow and bone are both destroyed.

If inflammations of these kinds are not speedily removed, the periosteum will be destroyed; and cannot be renewed until the bone exfoliates, and is restored. In this period the incumbent parts will be irritated by an acrid sanies, and malignant ulcers produced, especially if a large portion of flesh covers the bone, and hinders a decisive incision on the part.

The cure is as that of all other inflammations; but the matter must be directed outwards by fomentations and incisions, if the inflammation cannot be discussed by bleeding, purgatives, &c. For this purpose, after these general remedies, softening fomentations and poultices may be applied; but if these fail, it remains only to cut down through the flesh to the bone, if the part admits. Amputation is often, however, at last necessary.

When an abscess begins to form, it is known and treated as described in the article ABSCESSUS PERIOSTEI.

17. INFLAMMATION OF THE RECTUM is rarely so acute as that of the small intestines, nor so apt to

affect the pulse or the stomach; nor is there such a stricture as to render the intestines impervious. The cure is the same as inflammation in any of the other intestines: purgatives are equally necessary, and ought always to be employed. Clysters, from the soreness, are inadmissible, and sitting over warm water useful.

18. INFLAMMA'TIO RE'NUM. See NEPHRITIS.

19. INFLAMMATION OF THE SPLEEN, *splenitis*, and *pleuritis splenica*. Dr. Cullen places it among the *phlegmasiæ*; defining it febrile affection, attended with tension, heat, tumour of the left hypochondrium, and pain increased on pressure, without signs of a nephritis.

Lommius observes, that this disorder is rare; that it is attended with a hard and a throbbing tumour, a pain in the left hypochondrium, a continual violent fever, extreme heat, unquenchable thirst, a blackish tongue, a total loss of appetite, with a difficult, and, as it were, imperfect respiration, like that of children when they sob through anger. Aretæus adds, that the pain attending inflammation in the spleen is not considerable. If the distemper continues not accompanied by an ulcer, the patients have an aversion to food, are swollen, have a bad habit, a disagreeable aspect, with many round, livid, hollow, foul, and incurable ulcers over the whole body, and die cachectic; but such as have only a small, hard, and schirrous tumour feel little or no pain, and consequently live longer. A dropsy, a consumption, or a colliquation of the whole body, are its frequent consequences.

The cure is that of other violent internal inflammations; but in India punctures and scarifications are employed by the native practitioners.

20. INFLAMMA'TIO TE'STIUM. See HERNIA HUMORALIS.

21. INFLAMMA'TIO U'TERI, *hysteritis*, and *metritis*. Dr. Cullen defines this disease a febrile affection, attended with heat of the hypogastric region, tension, tumour, and pain; the os uteri painful on being touched, with vomiting.

Women, after child-birth, when the lochia are impeded, are sometimes subject to this complaint: but it does not often occur, except as in adiopathic inflammation; for bruises, external stimuli, obstructed menstrua, or obstructed lochia, in very few instances produce real permanent inflammation. The imprudent use of instruments, or violence in delivery, is not a very uncommon cause. When it occurs from any of the former causes, the symptoms are chiefly those of irritation rather than inflammation. The pain at the bottom of the belly is neither throbbing nor constantly acute; the pulse is, as usual after child-birth, frequent, often small, sometimes irregular; in strong habits, and after early abortions, hard. Subsultus tendinum, and the other symptoms of irritation come on; the womb mortifies, and the patient sinks. In the unimpregnated state the pain is more constant, circumscribed, and throbbing; the pulse hard, full, and strong, with other symptoms of general inflammation; or, if the disease rises to a greater height, the pulse is small and frequent, and suppuration is more frequently the consequence.

In both, as different parts of the womb are affected, there is a strangury, or a suppression of urine, and the urine discharged is fetid and hot; or a tenesmus attends, with a pain in going to stool; there is pain in moving the lower extremities, or swelling, with heat, to be felt at the os tincæ, which is usually shut. The belly is tense; a soreness is felt on pressure; a red stain sometimes extends up to the navel, and turns black when fatal: if it occurs in an impregnated uterus, an abortion follows.

It often happens that the woman can only lie on her back; and on turning on either side, she feels a painful heavy mass fall to that side; with an excessive pain in the loins, kidneys, and groin, of the opposite side. The pain sometimes extends to the thighs.

This disorder may be removed by a spontaneous eruption of the menses, or of the lochia; or, after an abortion, or child-birth, by the patient's falling into a constant, equable, gentle, long-continued sweat. If it terminate in an abscess, or a mortification, both are fatal; but a metastasis may be a means of relief.

Bleeding is useful at the first attack, and if the discharge is then copious, it is found to be salutary; but, if at a later period, it sinks the patient with marks of debility, or hastens gangrene.

In abortions and labours, where the patient is not greatly debilitated, if the pulse is hard, and not very frequent, the loss of blood by the arm is borne with advantage; but it cannot be repeated; and the general method of cure will always depend on mild diaphoretics, as the pulvis antimonialis and haustus salinus, carefully avoiding irritating purgatives. To these may be added anodyne and antispasmodic fomentations.

In delicate or feeble constitutions, after child-birth, and where there is no hardness, but great frequency of the pulse, this disorder too often proves fatal. All that can be done is to keep the patient moderately warm, exciting, if possible, a gentle perspiration by farinaceous decoctions, in small quantities, frequently repeated, and applying fomentations and poultices, supporting the strength by the moderate use of wine, and occasionally the bark. All extraordinary evacuations are dangerous. Even the perspiration must be the gentle diapnoe formerly described.

Every irritation, as external pressure, urine in the bladder, or from fæces in the rectum, must be avoided. Urine, if necessary, may be drawn off with the catheter, and the bowels may be emptied by repeated clysters, which are useful also as internal fomentations, and these are particularly necessary when the irritation is communicated to the rectum. Blisters are dangerous remedies, as their irritation may be conveyed to the neck of the bladder. Opiates, however, may be freely given, and, indeed, to a considerable extent, if costiveness is avoided by mild laxatives.

If suppuration comes on, we are told to direct it to the perinæum. We may do so, but our success will be inconsiderable. Abscesses in the uterus are rare, but they are very generally fatal. See Fernelius; Fordyce's Elements of the Practice of Physic, part the second; and Hamilton's Outlines.

22. INFLAMMA'TIO VAGI'NÆ may occur from any cause which produces inflammation in other parts, and must be cured by the same means; but emollient, saturnine, and anodyne injections are particularly useful. When it happens after delivery, it is occasioned by the head of the child being long retained in the pelvis.

If the swelling and inflammation be not very great,

they are generally removed by the discharge of the lochia; but if the internal membrane of the vagina is inflamed, emollient injections must be thrown up from time to time, and a piece of prepared sponge should be introduced, to prevent the effects of the adhesive inflammation. Soak a piece of sponge, of a proper size, to keep the vagina open, when expanded, in warm water; then bind it tight with a string, cutting off any irregularities or lumps. When dry, take off the string, and the sponge will remain in the same form; anoint it with lard, and introduce it into the vagina, the moisture of which will expand it.

If the pressure was so long continued as to obstruct the circulation, a mortification will ensue, which if partial only, the mortified parts will slough off. This is probably the case, if the woman complains of great pain after delivery, a fetid smell, and a discharge of sharp ichor, or of pus and matter from the vagina. Emollient fomentations may be thrown up in such circumstances; dossils of lint, dipped in any warm balsam, may be applied; and when the sloughs are separated, great care should be taken to prevent the vagina from coalescing, either by introducing dossils of lint or pieces of sponge. Inflammation and sloughing of the vagina occasionally happens from violence of any kind.

23. INFLAMMA'TIO VENTRI'CULI, *gastritis, cardialgia inflammatoria*. Dr. Cullen places this, as usual, in the order *phlegmasiæ*, defining it a typhoidal pyrexia, attended with anxiety; heat and pain in the epigastric region, increased on taking any thing into the stomach; a propensity to vomit, and immediately throwing up what is taken, with a hiccough. He distinguishes two species:—1st, *Phlegmonodea*, when from internal causes, in which the pain is acute, and the febrile affection violent. 2d, *Erythematica*, when from external causes, and the pain with the febrile affection is of a milder nature, with an erysipelatous inflammation appearing in the fauces. He is certain, he adds, from many observations, that of the gastritis, as well as the enteritis, there are two species, of which one is phlegmonous, and the other erysipelatous; and, therefore, he has distinguished them: though he confesses that the symptoms of the erysipelatous inflammation of the stomach, and more so those of a similar affection of the intestines, are often obscure and uncertain; but of these he has spoken, that posterity may investigate the subject more diligently.

It is produced from nearly the same causes as the inflammation of the intestines, except introsusception and hardened fæces, and it is more liable to be excited by acrid substances. It rarely occurs from external causes, though we have seen three instances in which it has arisen from external cold.

When the stomach is inflamed, there is soreness externally; a pungent, fixed, burning pain, with a distension and tumour, sometimes a pulsation in it: the mildest drinks increase the pain, bring on sickness, vomiting, purging, or hiccough. A continual uneasiness is felt about the præcordia, a difficulty of breathing and swallowing, with a pain in sneezing: the pulse is small, quick, hard, and intermitting; the extremities cold, with clammy sweats and faintings; sometimes a temporary mania, and, in one case, a hydrophobia. When from a wound in the stomach there is frequently little or no pain; but the patient sinks with all the symptoms of irritation.

Inflammation in the stomach must be distinguished from a cardialgia, a circumstance by no means difficult, as neither vomiting nor fever attend; and from an inflammation in the convex part of the liver; which, however, seldom occurs without some inflammation of the stomach.

This disorder is seldom so dangerous as is represented. Indeed it seldom occurs in its acutest form; but mild nutritious drinks, in very small quantities, nourishing clysters, with a blister externally, has generally relieved. Bleeding, we are told, must be freely used: it may be so, but we have never found it necessary. All stimulants are undoubtedly injurious. When highly acute, a metastasis takes place to the head, and violent phrenitis supervenes: in other circumstances it quickly terminates in gangrene, a change known by a cessation of pain, a coldness about the præcordia, a languid or an intermitting pulse, with a calm serenity, without hiccough.

The drink should neither be cold nor hot, but gently warmed. Demulcents and emollients are best adapted for the common drink, with small portions of nitre, or of the rob of currants.

A solution of gum arabic, or spermaceti made into draughts, in each of which may be gr. v. of nitre, and about a dram of the syrupus è meconia, may be repeated as often as seems necessary for moderating the pain, and checking the vomiting.

If acrid poison, or an excess of eating, is the cause, an active emetic may be given; but on all other occasions avoided. The emetic preferred is sweet oil; but one that acts with effect and quickly is more effectual: of this kind is the vitriolated zinc.

If an abscess bursts, a milk diet, with the mildest food, in small quantities at once, is only necessary.

The erythematic inflammation of the stomach comes on insidiously; but sometimes it is evident by the inflammation appearing in the pharynx, as well as on the whole internal surface of the mouth. When, therefore, an inflammation of this kind affects the mouth and fauces, with a frequent vomiting, and an unusual sensibility in the stomach, we may suspect that the same affection extends downward. Even when no inflammation appears in the fauces, yet if a pain be felt in the stomach, with a want of appetite, anxiety, frequent vomiting, an unusual sensibility to acrids, some thirst, and frequency of pulse, we may suspect the existence of this disease in the stomach. The inflammation often extends farther, occasioning diarrhœa and mucous discharges from the rectum.

The treatment will vary according to the causes, &c. When from an acrid matter taken in by the mouth, it must be evacuated by a quick emetic; by large draughts of warm mild liquids; or by the proper antidote, if the nature of the poison is known. If symptoms of inflammation are manifest, bleeding, blisters, fomentations, and frequent emollient laxative clysters may be used. But as the affection often arises in putrid diseases, all that can be done in such circumstances is to avoid irritation, and to throw into the stomach as much of mild and of acescent aliments as it can bear. When the disease is a little alleviated, a light infusion of bark, with a few drops of any mineral acid, is borne with ease, and is highly beneficial. See Cullen's First Lines, vol. i. p. 356, &c. ed. 4.

24. Inflamma'tio ve'sicæ, *cystitis*, and *cystiphlogia*. This disease is also placed by Dr. Cullen in the order *phlegmasiæ*, and defined a febrile affection, attended with pain and tumour of the hypogastric region; frequent and painful micturition, or ischury and tenesmus. He distinguishes two species. 1. Cystitis from internal; and, 2. from external causes.

It is produced by the usual causes of internal inflammation, or from topical irritation; as acrid diuretics, or a calculus.

A pressing and burning pain, with external soreness, is perceived in the region of the bladder above the pubes, and in the perinæum, soon after a febrile attack. If the neck of the bladder be inflamed, the urine is retained, with frequent stimulus to its evacuation;—if the fundus, there is a continual discharge, with great efforts to throw out a larger quantity, which the patient conceives to be contained in a bladder. Frequent attempts to expel the fæces, with which the rectum appears to the patient to be always loaded, increase the pain very much, particularly when any hard fæces are contained in it. The pulse is frequent, but seldom hard; the extremities cold, with restlessness, sickness, vomiting; sometimes delirium, and other symptoms of irritation.

This disorder, if very violent usually terminates soon, either in a recovery or death; frequently the latter, generally from a gangrene. So violent an inflammation of the bladder seldom, however, occurs. We have often seen it without considerable danger, chiefly from topical irritation, and once only from catching cold.

This disorder is sometimes relieved by an increased secretion of mucus from the internal membrane, resembling, in appearance, pus, but much lighter, and more uniform; or by a metastasis. When suppuration follows, pus is discharged with the urine, passes externally through the perinæum, or into the cavity of the abdomen, where it proves fatal. The ulcer in the bladder and perinæum are difficult of cure.

Inflammation in the external coat of the bladder should be distinguished from that of the internal; and inflammation in any part of the bladder should be distinguished from inflammation in the adjacent parts, as well as from that retention of urine which proceeds from other causes. The distinction is, however, by no means difficult, as, when the external membrane is affected, the pulse is hard, and the external soreness considerable; nor is the great irritation to make water so painful or frequent.

In the cure, bleeding is seldom necessary to any considerable extent; but the bowels should be kept freely open by such laxatives as do not irritate the rectum.

Relaxing medicines, such as the pulvis antimonials and haustus salinus, should be given early, and repeated frequently. Fomentations to the pubes and perinæum are highly useful; and mild clysters, which act as such, should be frequently injected.

If the urine is retained, decoctions of mucilaginous herbs may be taken; but we should always reflect, that, though we abate the acrimony of the urine in this way, we increase the disease. Such decoctions should not be drank in too large quantities, and gum-arabic kept in the mouth will sheath the inflamed parts without adding to the quantity of urine. If necessary, the catheter must be introduced; though much care is required in the attempt, which often fails.

If, notwithstanding due evacuations, spasmodic contraction with much pain continues, opiates in considerable doses, such as tinct. opii gt. xx. every three or four hours may be given, taking care that no accumulations take place in the bowels.

The patient may be placed in the warm bath two or three times in the day. Blisters are sometimes applied to the perinæum, and with advantage; the plaister should, however, be covered with thin gauze, and removed as soon as a vesication has taken place. In this way we have often applied them with success. The rubefacients promise greater utility with less inconvenience, but we know not that they have been tried.

If by irregular shivers, and the diminution of pain, a suppuration is suspected, we must wait its progress, and the disease will then become an ulcer of the urinary passages, which must be treated accordingly.

25. Inflammato'ria fe'bris. Dr. Cullen places it in the class *pyrexiæ*, and order *febres*; and as a synonym of synocha; defining it heat, greatly increased; a frequent, strong, and hard pulse; high-coloured urine; the functions of the sensorium somewhat disturbed. This fever is the *continua non putris* of Boerhaave; and the *febris acuta sanguinea* of Hoffman.

When fever is attended with an inflammatory diathesis, or when actual inflammation affects any part during the existence of fever, the patient is said to labour under one of an inflammatory kind: but according to the different parts in which the inflammation is seated, different denominations are given to the disorder, as we have seen in the preceding articles.

In strong constitutions it is produced by any of the causes of fever; but it has been doubted whether inflammatory fever exists, independent of topical inflammation There is little doubt but that it is most commonly attendant on topical inflammation, though it certainly exists alone. When we consider the distinctions of fever, we shall find that they have been too curiously subdivided; and that fever is a more simple disorder than pathologists have represented it. At present we shall only remark that this disease is distinguished by a hard pulse and more considerable heat than usual, generally owing to the strength and tone of the habits it attacks.

The horror and rigor of the attack are violent, but short in their duration, and are followed by a violent hot fit, in which all the symptoms indicating increased action of the arterial system are very conspicuous. The fever is often terminated by topical inflammation, or a hæmorrhage, and is alone fatal, though it may become rapidly so, when the inflammation falls on the brain, lungs, or intestines. If none of these consequences happen in the second week, the strength diminishes, and the fever goes off with a perfect crisis, or changes to a typhus. When attended with local inflammation, and this is removed, the same change sometimes takes place, and the typhus is rendered more dangerous, by the weakness induced from the necessary evacuations. This has been the reason of nosologists introducing the genus *synochus*; but *synochus*, the real disease, is very generally a typhus, and the previous inflammatory symptoms are accidental only. The cause of symptoms so dissimilar is not easily assigned. In some cases the infectious miasmata are only excited to action by the

previous inflammatory fever, and in others the irregular action subsequent to the spasm is directed to a particular organ, and the irritation excited by its inflammation increases the force of the circulation, so as to produce the symptoms described. See FEBRIS and INFLAMMATIO.

The causes of inflammatory fever are chiefly cold when the body is heated; but it may also arise from accumulations in the stomach, or topical irritations. The stomach and bowels are the chief sources of this disease in children; and, indeed, the most common causes, when it appears independant of topical affections. The other sources of irritation are obscure.

Bleeding, the common remedy with indiscriminating practitioners, must be employed with caution. If an inflammatory fever attacks a young, strong, robust labourer, it may be employed with freedom; but we should always recollect, that though pneumonia, phrenitis, or any active inflammation, may come on, a typhus may be also at the bottom. The pulse may direct; but, as we have often observed, it requires peculiar judgment to distinguish between a strong and an irritated pulse, as well as between an apparently low and a labouring one. We have found the countenance a good criterion; and if the features are sunk, with any apparent anxiety in the countenance, whatever are the other symptoms, bleeding must be avoided. On the contrary, strong rigor, soon succeeded by violent heat, flushed face, a sparkling and a full eye, will require a free and active evacuation from the arm, which may be repeated according to circumstances.

Emetics are remedies of the utmost importance, and in children, where a foulness of the stomach is the principal cause, they will often carry off the fever. In general, the headach and fulness of the vessels appear to contraindicate this remedy; but we have already observed, that the increased fulness is temporary, the advantages permanent. Yet where the determination to the head is very violent, and the vessels have not been depleted by venesection, emetics should be avoided.

Cathartics are still more necessary than emetics, and less dangerous. They not only relieve the head, but they prevent determinations to the lungs and liver, and lessen the violence of typhus, should its fomes be latent. The saline purgatives, with sena, are, in this case, preferable.

The cooling sedatives and inirritants must be freely employed. The antimonials, nitre, with all the other neutrals, are valuable remedies; and, where the head is affected, camphor, united to vinegar, has been employed with advantage. (See PHRENITIS.) Opiates are often necessary when violent irritation and restlessness prevent sleep. They should be given with camphor and the antimonial powder.

When local pains come on, they are occasioned by topical inflammation, and must be treated according to their nature. See INFLAMMATIO.

The diet should be chiefly gruel, or barley-water, subacid fruits, water acidulated with lemon, the jelly of currants, or similar sharp fruits. It may be drank warm or cold, as is most agreeable to the patient. Half a dram of nitre may be dissolved in every pint of liquor in which no acid juice is mixed. The room should be high, large, and airy. The patient may sit up a little each day, according to his strength; for this will lessen the fever, headach, and delirium: but when a salutary perspiration comes on, it should be indulged in bed. The sheets may be changed every two or three days, and all putrid matters should be removed.

See Fordyce's Elements of Physic, part ii. Fordyce's Enquiry into the Causes, &c. of putrid and inflammatory Fevers.

INFLA'TIO, (from *inflo, to puff up*). See EMPHYSEMA.

INFLA'TUS, (from the same), is applied botanically to the perianthium, when blown up like a bladder.

INFLO'RESCENTIA, (from *in*, and *floreo, to blossom*); the mode in which flowers are joined to the plant by the foot-stalk.

INFLUE'NZA. INFLUENCE. (Spanish). See CATARRHUS EPIDEMICUS. The same principle which induced Hippocrates to attribute epidemics to the το θειον, gave this general epidemic catarrh the name of *influenza*. From Sydenham, upwards to Hippocrates, it was known by the name of *catarrhalis febris epidemica*; but Sydenham chiefly calls it *tussis epidemica*: it hath been since variously named, but is now styled *influenza*.

In Dr. Cullen's system it is a variety of *catarrhus à contagio*.

In the year 1673 Sydenham treated of the nature and cure of the putrid fever, which he called *variolous fever*; he found that this fever returned every summer afterwards, and was succeeded by the *cholera morbus* and *bilious fever* (by him called the new fever). In 1675 these fevers were attended by a new symptom, viz. an uncommon degree of stupor, which frequently ended in a coma, and was for that reason by Sydenham called the comatous fever. In the beginning of November of the same year this fever was complicated with a cough, and was described by Sydenham nearly as follows:

"The fever proceeded in this manner during the autumn, sometimes seizing the head, at others the bowels, every where raging under the appearance of symptoms peculiar to those parts till the end of October; when the weather, which till now had continued in a manner as warm as summer, changed suddenly to cold and moist; whence catarrhs and coughs became more frequent than I remember to have known them in any other season. But it is of most moment to observe, that the stationary fever of this constitution usually succeeded these coughs, and hence became more epidemic, and likewise varied some of its symptoms. For whereas, some little time before, it attacked the head and bowels, now it chiefly seized the lungs and pleura, whence arose peripneumonic and pleuritic symptoms; though it was still precisely the same fever that began in July 1673, and continued without any alteration of its symptoms till the rise of these catarrhs.

"These catarrhs and coughs continued to the end of November, after which they abated, but the fever still remained the same as it was before the catarrhs appeared; though it was neither quite so epidemic, nor accompanied with quite the same symptoms, these depending accidentally upon the catarrhs.

"1675, the season having continued unusually warm, like summer, till towards the end of October, and being suddenly succeeded by cold and moist weather, a cough became more frequent than I remember

to have known it at any other time; for it scarce suffered any one to escape, of whatever age or constitution he were, and seized whole families at once; nor was it remarkable only for the numbers it attacked (for every winter abundance of persons are afflicted with a cough), but also on account of the danger that attended it; for as the constitution, both now and during the preceding autumn, eminently tended to produce the epidemic fever above described, and as there was now no other epidemic existing, which by its opposition might in some measure lessen its violence, the cough made way for, and readily changed into, the fever. In the mean while, as the cough assisted the constitution in producing the fever, so the fever on this account attacked the lungs and *pleura*, just as it had affected the head even the week preceding this cough; which sudden alteration of the symptoms occasioned some, for want of sufficient attention, to esteem this fever an essential pleurisy or peripneumony, though it remained the same as it had been during this constitution, i.e. since July 1673.

"For it began now, as it always did, with a pain in the head, back, and some of the limbs; which were the symptoms of every fever of this constitution, except only that the febrile matter, when it was copiously deposited in the lungs and *pleura*, through the violence of the cough, occasioned such symptoms as belong to those parts. But, nevertheless, as far as I could observe, the fever was the very same with that which prevailed to the day when this cough first appeared: and this likewise the remedies to which it readily yielded plainly showed. And though the pungent pain of the side, the difficulty of breathing, the colour of the blood that was taken away, and the rest of the symptoms that are usual in a pleurisy, seemed to intimate that it was an essential pleurisy; yet this disease required no other method of cure than that which agreed with the fever of this constitution, and did no ways admit of that which was proper in the true pleurisy, as will hereafter appear. Add to this, that when a pleurisy is the original disease, it usually arises betwixt spring and summer; whereas the distemper we now treat of began at a very different season, and is only to be reckoned a symptom of the fever which was peculiar to the current year, and the effect of the accidental cough.

"Now, in order to proceed in a proper manner to the particular method of cure, which experience shows to be requisite both in this cough and in those which happen in other years, provided they proceed from the same causes, it is to be observed that the effluvia which used to be expelled the mass of blood by insensible perspiration are struck in, and thrown upon the lungs, from the sudden stoppage of the pores by cold; these by irritating the lungs immediately raise a cough; and the hot and excrementitious vapours of the blood being hereby prevented from passing off by perspiration, a fever is easily raised in the mass; namely, when either the vapours are so copious that the lungs are unable to expel them, or the inflammation is increased by the adventitious heat arising from the use of overheating remedies, or too hot a regimen, so as suddenly to cause a fever in a person who was already too much disposed to one. But of whatever kind the stationary fever be, which prevails the same year, and at the same time, this new fever soon assumes its name, becomes of the same kind, and in most particulars resembles it; though it may still retain some symptoms belonging to the cough, whence it arose. In every cough, therefore, proceeding from this cause, it is sufficiently manifest that regard must be had not only to the cough, but likewise to the fever that so readily succeeds it.

"Relying on this foundation, I endeavoured to relieve such as required my assistance by the following method: if the cough had not yet caused a fever, and other symptoms, which, as we said, usually accompany it, I judged it sufficient to forbid the use of flesh meats, and all kinds of spirituous liquors, and advised moderate exercise, going into the air, and a draught of a cooling pectoral ptisan to be taken between whiles. These few things sufficed to relieve the cough; and prevent the fever, and other symptoms usually attending it. For as by abstaining from flesh and spirituous liquors, along with the use of cooling medicines, the blood was so cooled as not easily to admit of a febrile impression, so by the use of exercise those hot effluvia of the blood, which strike in, and occasion a cough as often as the pores are stopped by sudden cold, are commodiously exhaled in the natural and true way, to the relief of the patient.

"With respect to quieting the cough, it is to be observed that opiates, spirituous liquors, and heating medicines used for this purpose, are equally unsafe; for, the matter of the cough being entangled and stiffened thereby, those vapours which should pass off from the blood, in a gentle and gradual manner, by coughing, are retained in the mass, and raise a fever: and this frequently proves very fatal to abundance of the common people, who, whilst they unadvisedly endeavour to check the cough, by taking burnt brandy, and other hot liquors, occasion pleuritic or peripneumonic disorders; and by this irrational procedure render this disease dangerous, and often mortal, which of its own nature is slight, and easily curable. Neither do they err less, though they seem to act more reasonably, who endeavour to remove the cause of the disease by raising sweat; for though we do not deny that spontaneous sweats frequently prove more effectual than all other helps in expelling the morbific cause, yet it is apparent that whilst we attempt to force sweat we inflame the blood, and may possibly destroy the patient, whom we desire to cure.

"But it happens sometimes, not only when the disease has been unskilfully treated, in the manner above described, but also spontaneously, at the beginning of the illness, or in a day or two afterwards, especially in tender and weakly persons, that the cough is succeeded by alternate intervals of heat and cold, a pain in the head, back, and limbs, and sometimes a tendency to sweat, especially in the night; all which symptoms generally followed the fever of this constitution, as it were, of the lungs, which occasioned a difficulty of breathing, stopped the cough, and increased the fever.

"According to the best observation I could make, the fever and its most dangerous symptoms were best relieved by bleeding in the arm, applying a blister to the neck, and giving a clyster every day. In the mean time, I advised the patient to sit up some hours every day, to forbear flesh meats, and sometimes to drink small beer, sometimes milk and water, and sometimes a cooling and lenient ptisan. If the pain of the side abated not in two or three days, but continued very vio-

lent, I bled a second time, and advised the continuance of the clysters. But with respect to clysters, it must be carefully observed, either in this or other fevers, that they are not to be long and frequently used when the disease is in its decline; especially in hysteric women, and in men that are subject to the hypochondriac disease; for the blood and juices of such persons are easily changed, and soon agitated and heated; whence the animal economy is disturbed, and the febrile symptoms continued beyond the usual time.

"But to return to our subject: whilst by these means we allowed time that the blood might gradually free itself from those hot particles that were lodged in the pleura and lungs, all the symptoms usually went off in a gentle manner; whereas, when the disease was treated in a rough way, by giving abundance of remedies, it either destroyed the patient, or rendered it necessary to repeat bleeding oftener than the disease required, or would safely bear, in order to save life. For though repeated bleeding answers every purpose in the true pleurisy, and is alone sufficient for the cure thereof, provided there be no hindrance from a hot regimen and heating medicines; yet, here, on the contrary, it sufficed to bleed once, or at most twice, in case the patient refrained from bed, and drank cooling liquors. And I never found it necessary to bleed more frequently, unless the symptoms relating to the *pleura* and lungs were much increased by some adventitious heat, and even in this case the practice was not wholly void of danger.

"Upon this occasion, I shall briefly deliver my sentiments with respect to a very trite and common opinion, viz. that a pleurisy is found to be of so malignant a nature in some years that it will not then bear bleeding, at least not so often as this distemper ordinarily demands. Now, though I conceive that a true and *essential* pleurisy, which, as shall hereafter be observed, happens indifferently in all constitutions, does in all years equally indicate repeated bleeding; yet it sometimes happens that the peculiar epidemic fever of the year, from sudden alteration of the manifest qualities of the air, readily throws off the morbid matter upon the *pleura* and lungs, while the fever notwithstanding continues exactly the same. Wherefore, in this case, though bleeding may be used to abate this symptom when it is very violent, yet, generally speaking, little more blood ought to be taken away than is required by the fever whereon this symptom depends; for, if the fever be of a kind that will bear frequent bleeding, it may likewise be repeated in the pleurisy, which is a symptom thereof: but if the fever will not bear repeated bleeding, it will be prejudicial in the pleurisy, which will go off with, or last as long as the fever does. And in my judgment this was the case in the symptomatic pleurisy that accompanied the fever which prevailed here at the time the cough began, namely, in winter, 1675; and therefore I must observe, that whoever, in the cure of fevers, hath not always in view the constitution of the year, inasmuch as it tends to produce some particular epidemic disease, and likewise to reduce all the contemporary diseases to its form and likeness, proceeds in an uncertain and fallacious way.

"In the month of November of the above-mentioned year I attended the eldest son of sir Francis Wyndham in this fever. He complained of a pain in his side, and the other symptoms that attended those who had this disease. I bled him but once, applied a blister to his neck, injected clysters every day, gave him cooling ptisans and emulsions, and sometimes milk and water, or small beer, to drink; and advised his sitting up a few hours every day: and by this method he recovered in a few days, and a purge completed the cure.

"But it must be remarked, that though these were the symptoms which succeeded the cough, during this winter, yet the cough, unattended with these symptoms, was more prevalent at the same time. But this required neither bleeding nor clysters, provided a fever was not occasioned by a hot regimen or heating medicines; it sufficed to allow the benefit of the open air, and to forbid the use of flesh, wine, and such spirituous liquors which are apt to cause a fever." Wallis's Sydenham.

In the month of July, 1775, the putrid fever came on; was succeeded by the cholera morbus in August, and the bilious fever in September, as usual; this bilious fever, however, was attended with a degree of stupor, which went off with the other symptoms when properly treated; but was easily turned into a coma, when improperly treated at any period of the disease. See Dr. Grant's Account of the Epidemic Cough and Fever, 1775, from Sydenham.

This subject hath engaged the attention of many since the year 1775; and in 1782, Dr. J. C. Smyth gave his observations of this disorder, in the first volume of Medical Communications, p. 71, &c. the substance of which is as follows.

"The late influenza was very generally accompanied not only with the usual catarrhal symptoms, but with others no less distressing to the patient, and which were still more alarming to the physician; such as great languor, lowness, and oppression at the præcordia; anxiety, with frequent sighing, sickness, and violent headach. The pulse was uncommonly quick and irregular, and the sick were frequently delirious, especially in the night. The heat of the body was seldom considerable, particularly when compared with the violence of the other symptoms; the skin was moist, with a tendency to profuse sweating; the tongue white or yellowish, but moist. Some persons complained of severe muscular pains either general or local, others had erysipelatous patches or efflorescences on different parts of the body, which in one instance terminated in gangrene and death. I observed petechiæ but once, and then only two days before death. Those attacked with the influenza were in general taken suddenly ill, and the symptoms in the beginning, or for the first twenty-four or forty-eight hours, were extremely violent, bearing no proportion either to the danger or duration of the distemper. Children and old people either escaped entirely, or were affected in a slighter manner. Women with child, when seized with the disease, were apt to miscarry; or, if far advanced in their pregnancy, to be delivered before their time; in either case the hæmorrhage was considerable, and several died. Patients subject to pulmonic complaints suffered much from the cough, difficult breathing, and other peripneumonic symptoms, and to them also the disease proved dangerous or fatal.

"The head-ach which accompanied the influenza may be distinguished into three kinds.

"1st. The uneasy weight, soreness, and distension, of the forehead, usual in common colds.

" 2dly. The violent sick head-ach, arising from the affection of the stomach, and relieved by vomiting.

" 3dly. The head-ach, during which the patients complained of a sensation as if their head was splitting, with a severe shooting pain at the vertex; this last head-ach was most usual in peripneumonic cases, and seemed chiefly occasioned by the violence of the cough.

" The fever began with irregular chilliness, had considerable exacerbations and remissions, and was always greatly increased towards night; but even then the heat of the body and thirst were seldom so great as might have been expected, and the accessions of fever were chiefly marked by the increased quickness of pulse and delirium. The frequency of the pulse was greater than is common in fevers (it was often 120, even in the remissions of fever, in the accessions 140, and sometimes so frequent that it was impossible to reckon it; in many instances it was irregular and intermitting); nor do I remember to have felt so frequent, and at the same time so irregular, a pulse (the irregularity of the pulse is in a great measure characteristic of malignant contagious fevers), in any fever attended with so little danger, and of so speedy and easy a termination; the violence of this being commonly over in twenty-four or forty-eight hours. Many, from the beginning, were delirious in the night-time and during the exacerbation of fever, who were perfectly recollected and distinct in the day and during the remissions; but even where the delirium continued, it was not a constant one, as the sick knew those who spoke to them, would answer some questions distinctly, and a few minutes afterwards talk incoherently; a fixed stare of the eyes at the time, and a kind of wildness in the countenance, were also very expressive of this state or condition. The delirium which we have just now described, though unnoticed (so far as I know) by any practical writer, is not unusual in the putrid fever, and differs as materially from the low delirium incident to the last stage of that disease, as it does from the phrenetic delirium of the febris ardens, or of any inflammatory fever. During the whole of the influenza, I met only one instance of true phrenetic delirium; and it may not be foreign to the purpose to remark, that it happened to a patient who had been three times bled, had swallowed no heating cordials, and who was taken every day out of bed, conformable to the judicious practice of Sydenham (vid. De Febre Comatosa), expressly with the intention of preventing this termination of the disease. Respecting the danger of the influenza, physicians, I find, have entertained somewhat opposite opinions; possibly owing to the difference of place and situation. In London, although the distemper doubtless proved fatal to many, yet it could hardly be accounted a dangerous one, if the number who died be compared with the prodigious number of those who recovered.

" The late influenza might very properly have been named the sweating-sickness, as sweating was the natural and spontaneous solution of it, and rest, abstinence, and warm diluents, were, in most instances, all that were necessary for the cure; yet, amidst such an amazing number and variety of cases, many occurred which required some further medical assistance, and when that became necessary, it was of the utmost importance that it should be procured early; for the disease, when neglected or improperly managed in the beginning, sometimes ended in a malignant fever of difficult treatment, and of very doubtful termination. And although the tendency to profuse sweating often continued, it now only weakened the patient, and a critical or salutary solution of the disease, in consequence of this evacuation, was no longer to be expected; nor do I recollect a single example of profuse sweating being attended with any advantage after the first forty-eight hours.

" The medicines which I found most serviceable in abating or carrying off the fever were small doses of an antimonial powder, composed chiefly of tartar. emet. the julep e camphora, with about a fourth part of the spt. Mindereri; the common saline draught, with ten or fifteen grains of the pulv. contrayerv. c. or, what I commonly preferred, from twenty to forty drops of the liquor anod. min. Hoffmanni, adding occasionally a small quantity of the paregoric elixir.

" In cases of great lowness, besides the drinks and nourishment usual in fevers, I allowed the sick white-wine whey, wine and water; and weak veal broth.

" For removing the oppression at the præcordia, sickness, and head-ach, no means were so certain as vomiting with tart. emet. giving it in small doses, largely diluted, and repeated every ten or fifteen minutes, until it produces the desired operation. This medicine, administered in this manner, had also a very remarkable effect in bringing on a remission of the febrile symptoms, and in accelerating the termination of the disease. It likewise commonly opened the body; when that was not the case some gentle laxative was given.

" The cough required not only plentiful warm dilution, but opiates and blisters were also very necessary; and where the sick were attacked with stitches, or acute pains about the chest, with difficult or laborious breathing, and other peripneumonic symptoms, the propriety of bleeding was, in my opinion, clearly and evidently pointed out; nor can I think any physician justifiable in neglecting the use of the lancet under such circumstances. At the same time, I am ready to acknowledge, that bleeding, though necessary to obviate the fatal consequence of a particular symptom, was by no means conducive to the general cure of the disease; that, on the contrary, the lowness and dejection were often increased by it; that the blood taken away had not always an inflammatory appearance, but was sometimes florid, and the crassamentum tender; that the relief afforded by bleeding was neither so considerable nor so certain as in other similar cases of peripneumony, and that in the course of the disease there frequently appeared unequivocal signs of a putrid tendency. But admitting the whole of these facts, and granting that they ought to make a physician cautious of taking away blood so freely, perhaps, as he otherwise would do, and as the urgency of the symptoms might seem to justify, yet they surely do not lead to an entire prohibition of the use of the lancet, at least in those cases where there was evidently no alternative, and where, although the effects of bleeding might be doubtful, the consequence of omitting it was certain. Upon such occasions, the advice of Celsus is the voice of reason, " Satius est enim anceps auxilium experiri quam nullum." Besides bleeding, blisters applied as near as possible to the parts affected were here, as in similar cases, of very essential service in removing the stitches in the side, and in relieving the difficulty of breathing; so that we may

justly apply to them what an eminent author said of the Peruvian bark, that he found it most serviceable where it was most wanted; for in cases purely inflammatory, where bleeding of itself will commonly do every thing, blisters are less necessary; but in those of a mixed nature, where the assistance of blisters is more immediately required, the relief afforded by them is in general more certain.

"Some may think it strange, that amongst the remedies employed in the treatment of this disease I have made no mention of oily medicines, such as emulsions, linctuses, &c. nor of the Peruvian bark. In regard to oily medicines, I have often observed that the advantage derived from them in cases of catarrh, attended with heat and fever, was extremely equivocal; and that wherever there were nausea, oppression, and uneasiness at the stomach, with a bitter taste in the mouth, and nidorous eructations, they did more harm than good: as these symptoms so frequently occurred in the influenza, I thought it safest to omit their use entirely.

"As to the bark, I shall only remark, that in the influenza, the cough, affection of the breathing, and oppression at the præcordia, where they occurred, were to me sufficient reasons for not employing it; and that even where these symptoms were not present, and in cases where the great lowness, and apparent putrid tendency, seemed not only to justify but even to demand the use of the bark, I never was so fortunate as to see one single instance where it produced any sensible good effect, either in moderating the fever, supporting the strength, checking the disposition to gangrene, or in preventing the fatal catastrophe that ensued.

"When the fever, and other immediately alarming symptoms of the influenza had ceased, there frequently remained a teasing cough; and convalescents in general complained of languor, want of appetite, and that their sleep was interrupted and unrefreshing. For removing these complaints, and completing the recovery of the patients, change of air, and riding on horseback, were the most effectual remedies; and to some they were absolutely necessary. A milk diet was recommended where the cough was obstinate; but I did not find it either necessary or of advantage to enjoin so strict an antiphlogistic regimen as is usually done in similar complaints. Neither do I know of any instance where the cough terminated in a phthisis pulmonalis, and I am much inclined to believe that this fatal termination was much less frequent after the influenza than after a common cold. For the lowness and want of appetite, chalybeate waters, especially when drunk at the spring, were of singular service. I also frequently prescribed, and I think with advantage, the elix. vitr. cum liquor. anod. Hoffmanni, taken to the quantity of thirty or forty drops in a bitter infusion, or in a decoction of the bark.

"In this short account of the late influenza, I have offered no conjecture with regard to the original cause of the distemper, or the manner in which it was propagated. I apprehend, from the present state of our knowledge, that we can hardly venture to say even what it is not; still less to affirm, with any probability, what it is."

Having thus inserted the best accounts, both ancient and modern, we shall refer to our own opinions and experience to the article CATARRHUS EPIDEMICUS.

See also Observations on the Influenza by A. Broughton, M. D.; a Description of the Influenza, by R. Hamilton, M. D.; Fothergill's Works, by Lettsom, 4to. p. 615; Medical Observations and Inquiries, vol. vi. p. 340, &c.; Medical Transactions, vol. iii. p. 54, &c; Medical Communications, vol. i. p. 1, &c.; Edinburgh Medical Commentaries, vol. ix. p. 393; Memoirs of the Medical Society, vol. i. to vi.

INFRASCAPULA'RIS, MUSCULUS, (from *infra, below*, and *scapula, the shoulder-blade*); *infraspinatus, superscapularis inferior, subscapularis*, or *immersus*, rises from the whole inner surface of the scapula, passes under the coracoid process, runs over the capsular ligament, and is inserted into the outer tuberosity of the os humeri, carrying the arm round, and partly raising it, being the reverse of the supraspinatus.

INFRASPINA'TUS, (from *infra*, and *spina*). See INFRASCAPULARIS.

INFUNDI'BULUM, (from its shape); *choana, pelvis, chone*. Between the basis of the anterior pillars of the fornix, and the anterior part of the union of the optic thalami, lies this funnel-like cavity. It runs down towards the basis of the cerebrum, contracting gradually, terminating in the glandula pituitaria, and communicating with the lateral ventricles. (See CEREBRUM.) The name also of the pelvis of the kidneys (see RENES); and of the pharynx.

INFU'SIO, (from *infundo, to pour in*). INFUSION. It signifies either the action of the fluid, or the medicine prepared by it.

By infusion in water, the gummy, the extractive, and the saline parts of vegetables, are separated: and by the intervention of the gum, the resin and oil are in part taken up by the same menstruum, so that in many instances the whole virtue of a plant is obtained. In general, water takes up more by infusion from dry herbs than from fresh ones, particularly the newly dried ones. From animal substances, water extracts the gelatinous and nutritious parts; and by this means glues, jellies, and broths, are prepared; and along with these it sometimes takes up principles of more activity. Water also generally suspends some portion of calcareous and aluminous earth; the quantity it dissolves of either is truly inconsiderable.

In making infusions, whether in cold or hot water, the ingredients are only steeped in it, without boiling. It is the same, whether proof spirit, rectified spirit, or any other menstruum, is employed, though these preparations have a different title. This form is preferred where the medicinal portion is soluble and easily separated; when it is volatile, and would fly off by boiling; or where it would be lost or destroyed by long maceration.

In nervous disorders, infusions are best made in a vinous, a spirituous, or an alkaline menstruum. Stomachic infusions should be moderately spirituous. Cathartic ones, whether saline or resinous, if for extemporaneous use, are best made with hot water.

Infusions should not, if possible, be so fully impregnated with the ingredients as to make the medicine unpalatable: though the infusions of many of the fetid plants must be necessarily unpleasing.

Many infusions are most agreeable when made with cold water, though probably weaker than when heat is employed. The cold infusion of camomile flowers and the carduus benedictus are pleasant, and will not excite vomiting.

INFU'SIO. See TRANSFUSIO.

INFU'SUM. An INFUSION. Sometimes styled *dilutum*; at others it means a clyster or an injection

INGE'STA, (from *ingero, to throw in*). The contents of the stomach; generally alimentary, sometimes medicinal.

INGRAVIDA'TIO, (from *ingravidor, to be great with child*). See IMPREGNATIO.

IN'GUEN, (from *εγκυω, to bring forth*). The GROIN. The two groins are the lateral divisions of the hypogastric region.

INGUINA'LIS, (from *inguen, the groin*; so called from its supposed efficacy in diseases of the groin). See ERYNGIUM.

INHALA'TIO. See FUMIGATIO.

INHA'LER. An instrument recommended by Dr. Mudge for the cure of catarrhs, but now disused, though it may be in many cases probably advantageous.

I'NHAMÆ ORIENTA'LES. See BATATAS HISPANICA.

I'NHAME. See CARA BRASILIENSIBUS.

INHUMA'TIO, (from *inhumo, to bury in the ground*). A method of digesting, by burying in horse-dung the vessel which contains the chemical ingredients to be digested.

INIMBOI'A. See BONDUCH INDORUM.

I'NION, (the place whence *ινες, the nerves*, originate). See OCCIPUT.

INJACULA'TIO, (from *injaculor, to shoot into*). A violent spasmodic pain in the stomach, feeling as if darts were shot into it, with an immobility of the body. Van Helmont.

INJE'CTIO, (from *injicio, to throw into*). An INJECTION, called also *eisbole*. Fluids used for injection should be used lukewarm; and may be applied either by a syringe or clyster-pipe.

When used in gleets or gonorrhœas, Dr. Swediar advises that the syringe should have a short but wide pipe, so large that its orifice may enter the urethra, and the piston be close to its sides. If the whole pipe of the syringe be much smaller than the orifice of the urethra, it may wound the inside of the canal, and admit the poison by absorption, or the liquid run out sideways, instead of passing into the urethra. If the piston itself does not apply closely to the sides of the syringe, even if the pipe is sufficiently large, so that it perfectly closes the orifice of the urethra, the liquor will still regurgitate between the piston and the syringe, and very little of the fluid will pass. The syringe being properly made, should be applied closely and exactly to the orifice of the urethra; so that, by the conic form of its pipe, all passage may be denied to the liquid betwixt it and the sides of the urethra. If the disorder lies in the usual original seat of gonorrhœas, viz. just under the frænum, the patient should, with one hand, compress the urethra at the first curvature of the penis, where the scrotum begins, while he holds and manages the syringe with the fingers of the other. The piston, which should always go close and easy, ought then to be pressed softly and slowly, till he feels the urethra gently dilated, and thus keep the liquid injected for a minute or two in the passage, repeating the same operation three or four times. By a rash or longer continued pressure of the piston, the irritation often does considerable injury. By attending to these directions, the liquid is properly applied to the part affected, and no danger is incurred of carrying some of the venereal poison farther into the urethra with the injected liquid. This precaution is, however, not very necessary, as the dilution will prevent any injury. The liquid should always, in cases of virulent gonorrhœa, be lukewarm; but in gleets, cold. In gonorrhœas, if the liquid is too cold or too warm, it is supposed likely to hurt the patient, either by the retropulsion of the matter, or increasing the inflammation. In all cases, before an injection is applied, the patient should attempt to make water. There are a variety of injections made use of in this complaint; among the most efficacious are the following:

INJECTION OF ACETATED AMMONIA. To three ounces of distilled water add one ounce of acetated ammonia.—OF ACETATED LITHARGE. To four ounces of rose-water add eight drops of acetated litharge.—MURIATED INJECTION. To four ounces of distilled water add eight drops of muriatic acid.—OILY INJECTION. To four ounces of oil of almonds add eight drops of acetated litharge.—OPIATE INJECTION. To four ounces of distilled water add forty or sixty drops of tincture of opium.—INJECTION OF GREEN TEA. Infuse half an ounce of green tea in four ounces of boiling water, and let it stand till cold.—COMPOUND INJECTION OF CERUSSA, see PLUMBUM.—INJECTION OF MURIATED QUICKSILVER. To four ounces of distilled water add two drops of the liquor of muriated quicksilver. This must be weakened if the inflammation in gonorrhœa is great: or, should there not be any, it may be strengthened. Any of these may be used in the inflammatory stage of a gonorrhœa; but the muriated is considered as the most eligible, where the scalding of urine is very troublesome.—INJECTIONS OF VITRIOL OF ZINC. Dissolve ten grains of vitriol of zinc in five ounces of water.—COMPOUND INJECTIONS OF VITRIOL OF ZINC. Add to the above ten drops of acetum lythargyri, or half a dram of white vitriol, with as much acetated lead, a dram of camphor, and two scruples of opium, are dissolved in sixteen ounces of boiling water, and strained.—MERCURIAL INJECTIONS. Mucilaginis gum arab. ℥iv calomelanos ʒss. or hydrargyri purificati ʒi mucilaginis ℥iss. aq. ℥iss. As astringent injections the following are recommended: INJECTION OF ALUM. Dissolve four grains of alum in four ounces of rose-water.—OF COPAIBA. Mix two drams of balsam of copaiba with six ounces of rose-water, by means of the yolk of an egg; or with four ounces of lime-water, by means of the mucilage of gum arabic; —of ACETATED COPPER;—of AMMONIATED COPPER; of VITRIOLATED COPPER; COMPOUND INJECTION OF VITRIOLATED COPPER. (See CUPRUM). These are beneficial in the last stage of gonorrhœa; gleets; fluor albus; and, perhaps, with small portions of their active ingredients may be employed in the inflammatory stage as sedatives. INJECTION OF GALLS. See GALLÆ.

Patients who labour under gleets, after having used injections with some advantage, grow careless in the application, and even sometimes neglect them for a day or two. The consequence of this has been that the discharge has increased, as if it had been a fresh disease; and the relapse being more obstinate than the original complaint, the patients have been obliged to continue the injections for more weeks than it might have required

days had their use not been interrupted. In general, to prevent all danger of a relapse, it is proper to employ the injections three, four, or, according to circumstances, six times a day during the disease, and to continue the same regularly for ten or twelve days after the running has entirely ceased.

In ANATOMY great improvement hath been made by means of injections. Ruysch first employed them with success, and it is said that the Czar Peter, seeing an injected boy, whose appearance nearly resembled life, ran and kissed it.

Injections, which unite with water, and consequently with the animal fluids, consist of isinglass and common glue. These succeed with the finer vessels, in membranes; but, if employed to fill the larger, they take too long time in coagulating. If coagulated by alcohol, they become brittle; and, when the water is carried off by evaporation, the veseels are not properly filled. It has been attempted to remove these inconveniences, by first injecting the solution of glue; and when the capillary vessels are filled, a coarser wax injection; but the wax either hardens too soon, mixes irregularly with glue, or the parts separate where the two fluids are in contact.

Alcohol mixes both with water and oil, and consequently has been employed to fill the capillary vessels, but it coagulates the animal fluids it meets, and often blocks up the canal. It will not suspend durably-coloured powders, and, at last, evaporates, leaving little more than the colours of those to which it had been united. Melted tallow with a little mixture of oil, is often useful; but it sometimes stops too soon, where it meets with animal fluids, and becomes, by time, very brittle. Oil of turpentine, recommended by Dr. Monro, is generally employed to fill the finer vessels. It suspends the colouring matter; and, when the more volatile parts are evaporated, enough of the grosser particles remain, to retain the powder, and keep the vessels sufficiently full. After this is injected, it is confined by filling the larger vessels with a coarser injection, with which it unites very accurately.

Anatomists have preferred for the colour of their injections such pigments as most nearly imitate the natural contents of the vessels; the red for the arteries, and the blue for the veins. The vegetable colours are apt to concrete, and are destroyed by insects. The mineral are therefore preferred. The red is generally vermilion, a substance which in a small proportion gives a very considerable body of colour; and the green consists of distilled verdigris, which is brighter than the common sort, and dissolves in oil; the blue of verditer or smalt; the yellow of king's yellow; the black of lamp-black or burnt ivory are used.

The properties required in the injecting matter are fluidity; and they must likewise grow stiff, but tough and flexible when cold; for were they too hard, the smaller vessels would be frequently broken. The following possess these properties:

FINE INJECTION. *By Dr. Nicholls.*—Take hard white Spanish varnish, and hard brown Spanish varnish, of each equal parts; turpentine varnish, and vermilion, of each a sufficient quantity. Mix them.

COARSE INJECTION. *By Dr. Nicholls.*—Take of yellow resin two pounds; of yellow wax one pound; of turpentine varnish a sufficient quantity.

These injections may be coloured with vermilion or with verdigrise. Whatever colouring matter is used, it must be ground extremely fine.

Dr. Monro recommends for the fine injection a pound of oil of turpentine, gradually poured on the colouring matter finely powdered. To procure the vermilion or verdigrise very fine, it may be agitated with the oil; and, after standing at rest a little time, poured off: the coarser parts will by that means be separated, as they will have subsided.

Dr. Monro's coarser injection consists of tallow one pound, white wax five ounces, common oil three ounces, melted over a lamp, adding Venice turpentine two ounces. When this is dissolved, the whole must be strained through a warm linen cloth; and, if designed to run far, some oil of turpentine must be added when it is used. The fine injections, it is said, should be thrown in so warm as the finger can well bear; the coarser nearly at the boiling point. In general, however, these directions are erroneous; for, by such heats, the colour will be changed, and the coats of the vessels injured. It will be safer to give them only so great a degree of heat as is sufficient to render them perfectly fluid.

Quicksilver is frequently used for injections, and it is excellently adapted for this purpose, from its admitting of the minutest division. Were it possible to render it solid, and to impart to it any given colour, its advantages would be very considerable. May it not be possible to oxidate it within the vessels? Its great fluidity is, however, inconvenient, as the slightest puncture empties all the vessels filled with it; and its weight renders the preparation so heavy, that it is liable to strike against the glass, and to rupture the distended vessels. In injecting with quicksilver no impulse of a piston is necessary, for its own weight is sufficient; but the operator must recollect, that the momentum is in proportion to the perpendicular height of the column, not its diameter. Quicksilver is chiefly used in injecting the lacteals and lymphatics, the vessels of the parotid glands, of the testis, and of the mammæ, sometimes the arteries and veins of the hand.

In general, the younger the animal is the injection will go farther, and the same will happen when the fluids have been exhausted by disease. In the first case, the small vessels are larger; in the second, they are more empty. The less solid the part is, more vessels will be filled; and the more membranous, the brighter and more beautiful the preparation will appear. The great object in injections, therefore, is, to empty the vessels, to relax the solids, and prevent the too rapid coagulation of the injected fluids. Water is, therefore, first injected, till it returns colourless by the veins; the water is propelled by injecting air, and the air is afterwards squeezed out. But the water cannot be wholly separated, and the particles of this fluid interposed between those of the injection, occasion its breaking. It is, therefore, more common to trust to maceration for some time in the water, and squeezing the vessels, so as to evacuate the fluids by the divided end.

It is not easy to detail with advantage, in this place, the minuter regulations of this operation. It must be learnt from the works of practical anatomists, and from experience. The arterial system, after death, is usually empty; and the injection runs freely through it. To

inject the veins from the trunks, the valves must be forced, which is difficult, and generally impossible; for the coats will yield rather than the valves, so that one of the smallest branches which will admit the pipe must be opened. It must be recollected, however, that the veins of the abdominal viscera have no valves, so that they may be injected in any direction.

The subjects to be injected, after having their vessels cleared of their contents, should be warmed in water.

A fœtus may be injected by the umbilicus; a child by the aorta ascendens from the left ventricle; an adult in the same manner as a child. Injection by the aorta fills only the arteries; but by the umbilicus of a fœtus both arteries and veins are injected. When the arteries in the cornea are filled, the injection should not be pushed farther. When finished, the subject should be cooled suddenly in cold water.

If the body is macerated a day or two in cold, before it is put into warm, water, the blood will be more effectually dissolved, and the vessels more effectually emptied than by any other method. When put into warm water it may continue thirty-six or forty-eight hours, the water being kept as hot as one can bear a hand in it.

A preparation is best dried by a current of free air, avoiding dust; when dry, it must be varnished. The shining varnish may be laid on it with a brush. While drying, if animalcules appear, the part may be wetted with a solution of hydrargyrus muriatus dissolved in rectified spirit of wine.

Muriatic or nitrous acid diluted are proper for destroying the soft parts of injected preparations.

The rectified spirit of malt is the best for preserving these or any other anatomical preparations.

INIRRITA'NTIA. This is a class of medicines not hitherto introduced into the systems of therapeutics, though described, we apprehend, by Dr. G. Pearson, in his course of the materia medica, under the appellation of *acentropoetics*, from α, a privative, and κεντρον, stimulus, a term we might have adopted had it occurred to us in an earlier stage of the work. The great doubt which remains is, whether this be not properly a subdivision of sedatives. We think that strictly it is so; and we noticed these medicines in the article ANODYNES, q. v., but thought it would be useful to the younger student to bring the whole subject into one view, as its application is extensive, and utility considerable.

The sources of irritation in the human body are numerous. Of this kind are external stimuli; acrimony in the first passages, or the secreted fluids; inflammatory stimulus, particularly of the mucous membranes; schirri, or other indurations; extraneous substances lodged in the cellular membrane, or among the fibres of the muscles; worms, ossifications, or extravasated blood. The remedies of these irritations occur under their proper heads; and it is rather the object of this article to speak of the nervous irritations more generally, whose source is less obvious.

Nervous excitement often arises from a particular state of the nervous power, or, as we may be allowed to style it, the nervous fluid. Whatever be the state which causes animation, the increase of that energy is irritation. This irritation, according to its different circumstances, is allayed by cold, by heat, by exhausting the nervous power, or, more directly, destroying its activity; by diluting, and thus diminishing the activity of its cause; by sheathing the nerves from its action, or discharging it.

Cold we have already spoken of; and the sedative power of this remedy, either by its continued effect or its repetition, has been already explained. It properly belongs to a subsequent head, but it is distinguished in this place in consequence of its application. It is particularly adapted to the increased excitements which produce a more active circulation, either in general or in particular organs; in general, chiefly in hæmorrhages, and locally, in those inflammations which rapidly destroy the texture of the part, or produce atony, from excess of stimulus. It is thus one of the most ready and powerful inirritants that we employ.

Heat. The regulation of temperature, in a different way, is often effectual in lessening irritation, viz. by the continuation of a degree somewhat lower than that of the body, and much lower than that of the affected part. Thus water of the heat of 92° to 95° gradually sooths the irritated nerve, and lessens its excitement. Air acts more slowly, and, of course, less effectually; for the application even of the water must be long continued before it produces any effect. To their warmth a variety of demulcent remedies owe their efficacy, but often to their other qualities, which we shall soon notice.

Exhausting the nervous power, by stimulants, somewhat below in their effects those of the irritating cause, is often effectual. By this our object is to continue the excitement, not in a morbid degree, but by diminishing its power to exhaust safely the irritability of the nerve. Thus volatile alkali and eau de luce succeed in lessening the fatal effects of the viper's poison; alcohol and turpentine relieve burns; mercury sometimes lessens the irritation of the hydrophobic poison, and perhaps partly in this way of the lues venerea. We were long since taught to prevent the trismus expected to arise from the puncture of a nerve, by applying etherial spirit of turpentine. Many similar remedies are employed, and this is one of the most successful refinements of modern practice.

In a similar way *we destroy the activity of the nervous power* by sedatives; by tonics, which lessen irritability; and by narcotics. We lessen irritation by opium and by vinegar; by bark, and other vegetable astringents; by lead, copper, zinc, and silver. The narcotics we employ are tobacco, belladonna, hemlock, and digitalis. Each is useful in this way.

We sometimes lessen irritation by *diluting the stimulus*, and this is necessary when acrid poisons are carried to the excretories, as cantharides to the bladder, or when saline acrimony abounds in the blood. Dilution is, however, most often necessary when acrimony abounds in the primæ viæ; a more frequent occurrence than any other of this kind.

The diminution of irritation by *sheathing the parts*, and thus defending them from acrimony, includes the class of demulcents. This class is of considerable extent, and the medicines we shortly enumerated in that article. They are the oils and fats in all their variety, including spermaceti and bees-wax; the pure mucilages, including the gums and althœa; the farinaceous mucilages, as the lint and hempseed, the quince and fœnugreek seeds; the fecula of wheat, and some miscella-

neous vegetables, as the branca ursina, the melilot, the white lily, &c. We can easily conceive that these can sheath the fauces, the epiglottis, the stomach, and intestines; but it is more difficult to suppose that they can be carried into the blood, and again act on the excretory vessels. This is, however, undoubtedly true, and we see it certainly in the urinary organs, probably in the lungs. These demulcents, like warm water externally, seem to sooth irritation beyond the part to which they are applied; for such is the consent of the small vessels on every portion of the surface with each other, that changes produced in one part are, by sympathy, communicated to the whole.

The medicine which *discharge* the acrid matter can scarcely be enumerated among these; for puncturing a furunculus cannot be styled an inirritant. It was mentioned, however, to connect the whole, and to suggest that a source of irritation in distant parts is often productive of great inconvenience. When violent symptoms of irritation, therefore, appear, of which the immediate cause is not perceived, it will be necessary to extend our views to every part of the body; and we may thus be able to discover and discharge substances which have been unnoticed, and produced, without suspicion of the cause, the greatest inconveniences.

We have confined, in this view, the action of inirritants to cases of excitement; yet we shall find other sources of irritation from privations. Thus, hunger produces symptoms of irritation; the want of the usual distension in any of the cavities, and fatigue, have a similar effect. The only remedy in common to both these causes of irritation is warmth, or particularly warm water: but it is unnecessary to enlarge at present on this subject; since to add the remedies of this kind would render the class less natural, and we should anticipate what will occur under another article. See IRRITATION.

INNOMINA'TA ARTE'RIA, (from *in*, *non*, and *nomen*, *a name*). This word is applied to any part that has no specific denomination. It is the external branch of the external iliac artery at its division, near Poupart's ligament, ascends outwardly to the inside of the spine of the ilium; is lost in the muscle of the belly, and sends branches to the ilius internus.

INNOMINA'TI NE'RVI. A name of the fifth pair. See TRIGEMINI NERVI.

INNOMINA'TUM OS. *Coxæ ossa*, *os ilii*, or *coxendix*. The principal bone of the pelvis.

INNUTRI'TIO, (from *in*, *not*, and *nutrio*, *to nourish*). See ATROPHIA.

INOCULA'TIO, (from *inoculo*, *to engraft*). See VARIOLA and VACCINA.

INOSCULA'TIO, (from *in*, and *osculum*, *a little orifice*). See ANASTOMOSIS.

INPINGUE'DO PO'RCI. See COSTUS.

INSA'NIA, (from *in*, *not*, and *sanus*, *sound*). DELIRIUM, or MADNESS. See MANIA.

INSE'CTA, (from *in*, *into*, and *seco*, *to cut*). An INSECT. These animals are thus named from their being almost wholly divided in the middle.

We deferred considering this class of animals in a physical or a medicinal view when we treated of the ANIMAL KINGDOM, q. v., because we had not received the last labours of Cuvier and La Treille. Insects were most strictly distinguished by Lyonnet, who styled them animals without any vertebræ, with articulated paws or limbs. The flesh is soft, but the skin hard, scaly, or crustaceous, to which the muscles are attached; though the true crustaceous animals should be separated from insects, as having a muscular heart, and breathing by means of gills. See CRUSTACEA.

Another distinction of insects is their colourless blood. If some insects are bruised, a red fluid is discharged; but this has, in general, no relation to blood, except when blood has been previously swallowed; and in some insects it is a secreted fluid under the eyes. Yet, from the late observations of Cuvier, red blood seems to occur in some animals of this class.

The arrangement of insects is scarcely the object of this work. We may, however, remark, that they have been considered for this purpose in all their varied relations. Swammerdam has preferred, as the basis of his classification, their metamorphoses; Linnæus the organs of motion; Fabricius those of nutrition. The system of Linnæus is certainly the best and most natural; yet later observators have found some inaccuracies in his characters, and less exact distinction in his apterous insects. De Geer and Olivier have lessened these inconveniences by stricter discriminations, and forming a new order, the *orthopteræ*, taken from the *hæmipteræ*. Indeed we consider Olivier's arrangement as the best and most natural; more simple than Latreilles, more correct than that of Fabricius.

Insects may be considered in a work like the present as articles of food, as medicinal bodies, as either useful or detrimental to mankind. If we except the crustacea, we shall find few species used at any time as aliment. The locust (*gryllus cristatus* Linnæi) is used in the east as food. It is said to taste like a pigeon, but more insipid, and is seldom eaten but when other food is scarce. Its price is high only in times of famine. The wings and feet, sometimes the intestines, are separated. The Bedouins of Egypt eat them roasted alive; the Arabians roast and eat them with butter; or when they wish for a dish of peculiar delicacy, they parboil, and then fry them in butter. The inhabitants of Morocco dry them, and those of Barbary pickle them. Forskal, however, tells us that they have very little flavour, and that they are far from nutritious, and occasion melancholy, or cutaneous affections. In different parts of India and America the larvæ of coleopterous insects, bred in the internal parts of trees, as the weevil, a species of lucanus, the passalus of Fabricius, the prionus cervicornis, &c.; but these can only be procured with much trouble, and can never form an article of food. We have heard of the worms of filberts being eaten as a delicacy, and said to be rich, like marrow, with the taste of the nut, and that the maggots of every fruit have its peculiar flavour. The Romans used to eat the larva of an insect which they styled *cossus*, supposed to be the same which is found under the bark of the willow or the ash; but this larva, which is a true caterpillar, has an insupportable smell, and probably a disagreeable taste; so that it is certainly not the same. In Africa the inhabitants eat the white ants. The galls formed by a cynips on a species of sage in the isle of Crete, and on the *glechoma hederacea* Linnæi, are accounted by children a peculiar delicacy. The honey of the bee is too well known as a

nutritious substance, and a medicine to be particularly noticed. The honey of some districts in America is, however, poisonous (see American Transactions); and new honey will often disagree with the bowels, when these are peculiarly tender and irritable.

If, with much trouble, we have collected a scanty catalogue of nutritious insects, we shall not find the materia medica greatly enriched from these minute animals. The cantharides are, however, of considerable importance in medicine (vide in verbo); and the ants are said, by infusion, to furnish a pleasant and salutary acid drink in fevers. (See FORMICA.) The galls of the oak and the bedaguar of the rose tree, though the effects of insects, derive all their virtues apparently from juices of the tree and vegetable. The carabus, chrysocephalus, two species of the sphæx of Linnæus, two of the chrysomela and coccinella, three of the curculio, have been recommended in tooth-ach. The insects are to be bruised between the fingers, and the tooth and gums rubbed with the same fingers. The meloe majalis and proscarabæus are of the nature of cantharides, but less powerful. The oniscus asellus (millepes) was formerly much employed as a stimulating expectorant in dropsy, in obstructions of the liver, in asthma, and cynanche. Its nauseous acrimony points it out as a medicine of importance; but its disgusting appearance has occasioned its neglect. The coccus of the cactus coccinelliferus (cochineal) is said to be stimulant and diuretic; the same insect of the ficus Indica, and quercûs ilicis, the lac, and kermes, to be astringent; but modern practice neglects both. We have said that the more refined naturalists had separated the spiders from the insects; but we may mention here, without an apology, the use of the spiders' webs in external hæmorrhages, which act in assisting the concretion of the blood. We mention it also to add, that an ant found in Cayenne, the formica fungosa of Fabricius, composes its bed of a down so fine, that it generally succeeds in stopping arterial hæmorrhages on the same principle. The ancients used the horns of the cervus volans as an absorbent; and Linnæus tells us, that in Sweden a species of gryllus is irritated so as to bite warts, and that the fluids from its mouth destroys them. The trivial name is assigned from this property.

Among the advantages derived to mankind from insects, we need not name the silk, and the scarlet dye from the cochineal. Many insects, besides that of the mulberry, spin a silken pod; and from many of the cocci, a brilliant colour, though inferior to that of the cochineal, may be obtained. From the silk-worm's pod, the Chinese, it is said, prepare a brilliant and durable varnish. This worm affords also the Bengal root, styled in England Indian grass, so useful to the fisherman. We need not add Reaumur's attempt to make silk from spiders' webs, in which it has been supposed he would have succeeded, could he have induced them to live peaceably with each other. The gum-lac and bees-wax are well known, and some naturalists have attributed amber to these animals. Among the advantages of insects to mankind, we may also reckon their furnishing birds with a copious supply of nourishment, and their destruction of putrid matter and of each other.

The chief disadvantages are derived from their destructive ravages on books and furniture, and, above all, from the diseases which they occasion. (See ANIMALCULA.) The very troublesome itching produced by many species of acarus is well known. The louse, the flea, the bug, and the mosquito, are the common enemies of our repose; and in warm climates are far more numerous and fatal. The locusts, which destroy our harvests, the insects so fatal to vegetables of every kind, are scarcely objects of our attention at this time. They must be watched in their state of larvæ, when they may be at once extirpated. The most destructive flies escape our attention by their harmless or pleasing appearance in this state of disguise.

INSERTIO. The union of parts so close that one seems to penetrate the substance of the other, as the insertion of muscles into a bone. It sometimes means the insertion of any instrument into a cavity of the body.

INSE'SSIO, *incessus*, (from *insideo, to sit upon*). Sitting over relaxing vapours.

INSIDENS, (from the same); applied in botany to that which rests upon another part.

INSIDE'NTIA, (from the same). See EPISTAXIS.

INSI'DIANS, (from *insidior, to deceive*). INSIDIOUS, LATENT; an epithet of diseases which betray no evident symptom, but are ready on any exciting cause to appear; or which, on their first attack, do not show their peculiar or dangerous nature.

INSI'PIDUS, (from *in, non,* and *sapidus, savoury*). TASTELESS. See APÆUM.

INSITIO. ENGRAFTING.

INSIPIE'NTIA, (from *in,* priv. and *sapientia, wisdom*). Childishness; a low degree of delirium.

INSOLA'TIO, (from *in, upon,* and *sol, the sun*). INSOLATION; exposing any thing to the sun. See ICTUS SOLARIS, of which this word is a synonym.

INSO'MNIUM. A DREAM. *Quod in somno videtur.* Dreaming is a subject of considerable importance, not only in a physiological view, but as often affording useful prognostics, particularly in fevers; and it has been considered with great attention both by physiologists and metaphysicians; but whether the culture has been erroneous, or the soil stubborn, it is at least certain that the harvest has failed of producing that satisfaction which, from the labour and care, might have been expected. It remains to be determined whether we shall be more successful.

A dream is a series of images either sensible or intellectual, presented to the mind during sleep, more or less vivid, and sometimes so lively as to impress the mind with the fullest conviction of their real existence. They are evidently distinct from the mind, since fear and joy, despair and admiration, are excited by them; since the immaterial principle can decide on the propriety of the actions they may suggest, or can excite volition in consequence of their being presented. The images, however, thus passing before the mental eye are often incongruous, disjointed, and absurd; but whatever forms they may assume, we believe it to be a well-established fact, that every part is derived from sensible ideas formerly received. The physiologist who has not particularly attended to this subject may start at so positive an assertion; but after the examination of our own dreams during a series of many years, after the most extensive inquiries, we have never, in a single instance, been able to trace any image, or any

portion of a new combination, which was not previously conveyed to the mind by the senses. So extensive, however, is the power which suggests these sleeping scenes, that their objects are as various as our ideas; and the

Quicquid agunt homines votum, timor ira voluptas
Gaudia discursus

form the farrago of this drama of the fancy. Our passions are excited as by reality; our reasoning, however, is weak and imperfect.

In dreams we seem to reason, to argue, to compose; and in all these circumstances, during sleep, we are highly gratified, and think that we excel. If, however, we remember our dreams, our reasoning we find to be weak, our arguments inconclusive, and our compositions trifling or absurd. Some metaphysicians have supposed that from age and reflection our dreams become more consistent and philosophical, and have even supposed that the mind can, during sleep, retain its wonted powers. We are willing to believe that, from age, our minds wander less in this state of repose; but we suspect that it arises from the sleep being less perfect, and not from any experience in the "art of dreaming." We certainly fancy in our dreams that a given image is new; but if we can retain it when awake, we find that this opinion arose from our imperfect recognition, and we shall then be able to recollect its prototype. We seem to think, also, some place which in fancy is seen in our sleep, to be more beautiful and glorious than any which has before occurred. Yet on awaking we shall find this splendour a thing of shreds and patch-work, made up of heterogeneous and disjointed vestiges before offered to the senses.

It has been supposed that the fancy pursues the images of the foregoing day, and that Queen Mab sports "on lovers' lips, who straight on kisses dream." This general opinion we dare not deny, especially when sanctioned by the magic of Shakspeare's poetry. Yet our experience does not support it; and when the mind has been exhausted by joy or sorrow, we have often found the sleep sound and refreshing. When less exhausted, the fancy seems to play with various images, not always connected with the previous state of mind. We have even thought that when the mind has been very deeply impressed with any peculiar images, that such have less seldom occurred in dreams than their opposites. That dreams ever offer any foreboding of future ills or benefits; that we ever, in this state, receive information from preternatural sources; are opinions which we leave to the childishness of the nursery, or the wandering fancies of superstition and dotage.

The ægri somnia have been proverbial, as descriptive of disjointed incongruous images; and what may be considered as the pathology of dreams, will perhaps more fully illustrate their nature. In fevers the dreams are often highly distressing; from indigestion they are equally so, but of a different kind. In the former, the mind is hurried from one object to another with inconceivable rapidity; in the latter, chained down and oppressed with a heavy weight. Should it happen that the patient is relieved of his load during his dream, the complexion of these airy nothings immediately varies. Aversion is changed to liking, disgust to complacency, oppression to freedom. If the heat of fever is relieved by a salutary perspiration, the patient is no longer hurried through the trackless air, but reposes in a verdant meadow, or more often drinks of the cool stream, for the thirst vanishes. In general, very deep sleep is oppressive; light sleep salutary and refreshing. The senses no longer convey the usual impressions, but images are excited which, though not wholly similar to the usual ones, are not very different. Thus violent heat will suggest a dream of scorching fire; throwing off the clothes in winter, of walking through a river. The effects of opium on our dreams are singular. In those with whom it agrees it excites the most pleasant images; when it disagrees, the most frightful: in all it greatly influences the ideas of the duration of time. A man of genius and an artist, under the influence of opium, fancied Holbein's Dance of Death realised, and that each figure assumed a real form, and was presented to him in all its horrors. He suffered, in his opinion, from this exhibition, for many hours; and, at last, awaking in terror, heard the clock strike twelve, when he recollected that he did not sleep till after eleven. The author of this article, in whom opium excites the most agreeable images, has experienced the same change in his ideas of time. We have sometimes thought the nature of dreams influenced, in a certain degree, by the temper and disposition of the dreamer. Thus the sanguine cheerful temper finds, in all his distresses, a means of escape; where the more gloomy melancholic disposition perceives no resource till he awakes in horror. But in this *we* may be styled dreamers. The other facts recorded in this article have been verified by repeated observation.

The cause of dreams has excited various speculations. This waking sleep, or sleeping activity, appeared to Baxter so inconsistent, that he supposed immaterial spirits were amused, or engaged in suggesting these plays of fancy, and sometimes, perhaps, conveying important information. We cannot deny the existence or employment of these spiritual agents; but can scarcely conceive, in the whole circle of creation, beings so useless. They are, however, wholly unnecessary; for, in the pathology of dreaming, we have seen that the cause is purely corporeal; and, indeed, Baxter's opinion is, we believe, consigned to the same oblivion with that which looks to dreams as foretelling future events.

Wolfius supposed a previous excitement of some part necessary to suggest to the fancies during sleep; and, in fact, delivers the fictions of Shakspeare in the garb of sober sound philosophy. This opinion is, however, inconsistent with the phenomena of dreaming; and we have no modern idea on this subject which need detain us, except the opinion we are about to explain, originally derived from Dr. Cullen.

In sleep, Dr. Cullen observes, that there is a partial collapse of the brain, at least so far as respects the animal functions; and this partial diminution of excitement is shown by the delirium which occurs in the interval between the sleeping and waking state. To different degrees of the collapse, dreams, more or less vivid, appear to be owing. Dreams, indeed, are of the nature of delirium. Similar heterogeneous or disjointed ideas constitute both; and the whole must be resolved into that unequal balance of the nervous power in the brain arising from diminished energy. The proof of this is the want of the usual associations; another, the

deficiency of judgment; a function, when perfect, which arises, as we have seen, from a free communication between the different parts of that organ. The defect of judgment is seen from a high opinion we form of what we suppose we have written or said in our dreams, which is often ridiculous, and strangely heterogeneous.

Yet, it may be asked, are no ideas suggested in our dreams which deserve the attention of our awakened judgment? We have heard of some such suggestions, and suspected that we have experienced them; but they consist only of a happy recollection, or a new combination, which we are sufficiently awake to be pleased with, and rouse ourselves to recollect. We remember dreaming of being asked for a motto for an air balloon, and immediately suggested the following:

Tentanda via est qua me quoque possum
Tollere humo victorque virum volitare per ora.

Every instance of peculiar genius or supernatural information in dreams may be referred to one of the sources just mentioned.

Though this partial collapse explains, in some degree, the heterogeneous combinations of dreams, it does not show us how the images are excited. It will be at once obvious that this question includes one to which no answer can probably be given, viz. in what manner do sensible impressions act on the mind to produce ideas, or how, in turn, does the mind act on the brain, by means of volition, to excite action? We may hazard a few speculative remarks, which, if ill founded, will detain the reader but a short time. We have seen that the power which resides in the brain and nerves is probably a subtile fluid, capable of vibrations, and that its action consists in these vibrations. If, then, such have been excited by sensible impressions, we know that they may be renewed by powers more inconsiderable; and it is not impossible even that the motion of the blood, in those parts of the brain where the mobility of the fluid is considerable, may excite vibrations, and these be attended with the same ideas which originally followed them. In constitutions where the nervous fluid is particularly mobile, or in cases where the circulation is hurried, dreams will be more frequent, more vivid, and often more troublesome.

Dreams, we have said, are useful in affording prognostics in various diseases. When the dreams are hurried and violent, we have often reason to expect delirium: when the mind in fevers is gloomy and distressed, and the dreams frightful, the fever soon becomes dangerous; but when, in sleep, the fancy is soothed by pleasing images, the disease is seldom alarming. In these cases, the consequences are probably those of terror on one side, and complacency on the other; and the peculiar states of fever may not be the causes of the dreams. Yet, when we recollect that, in other instances, diseases of the body excite dreams of distress and horror, we must think that the more violent corporeal affections are really the causes of the terrific visions. In either case they are often useful prognostics.

If any part of the brain is more easily excited to action by having been previously impressed, the mind, on the contrary, becomes more insensible. Thus, the person used to distress is comparatively calm in witnessing the most painful scenes: the mind once harrowed with horror, will bear common trouble without emotion. This will account for the fancy not always pursuing, in sleep, the painful scenes of the day, or rather for their not being followed by pungent distress, so that they escape the recollection when we are awake.

Is it a fact that the dreams of children are more terrific than those of adults? Infants certainly dream, and seldom awake in terror; in fact they know not the tendency of objects, and are not capable of appreciating their effects so as to be terrified. When they are farther advanced, the tales of the nursery often inspire horrible images, which may again return in their dreams, or their systems, more mobile and irritable than those of adults, may be more susceptible of violent impressions. We could wish, however, that the fact were more decidedly ascertained.

Animals dream, particularly dogs; but in these visions they are more often pleased than terrified, though sometimes angry. Their bark is different, and the voice of those who talk in their sleep is usually altered. We have no evidence of the feathered race being subject to these nocturnal visitors; and perhaps they are connected, like associations of ideas, with the proportional bulk of the brain.

See Baxter on the Immateriality of the Soul; Lord Monboddo's Works; Hartley on Man; Wolfius's Ontology; Cullen's Physiology; and Lommius.

INSPIRA'TIO, (from *in*, and *spiro*, *to breathe*). INSPIRATION; *eispnoe*, *epipasmos*. The action of the chest and diaphragm, by which the air is drawn into the lungs. See RESPIRATIO.

INSTILLA'TIO, (from *instillo*, *to drop upon*); often synonymous with embrocatio.

I'NSTITA, (from *insisto*, *to stay*). A FILLET; and a TÆNIA.

INSUFFLA'TIO, (from *insufflo*, *to blow into*). Blowing into any cavity, to convey any remedy to a part affected.

INSU'LTUS, (from *insulto*, *to attack*). The first invasion or access of a paroxysm.

INTEGA'STRUM. The decussation of the optic nerves. Paracelsus.

INTEGUME'NTA, (from *intego*, *to cover*). INTEGUMENTS; the cuticle, rete mucosum, cutis, and membrana cellularis; sometimes applied to particular investing membranes, as the coats of the eye.

INTEMPERA'NTIA, (from *in*, *non*, and *tempero*, *to moderate*). INTEMPERANCE. Besides its usual signification, it sometimes is synonymous with dyscinesia.

INTEMPE'RIES, (from *in*, *non*, and *tempero*, *to mingle*). See DYSCINESIA.

INTE'NTIO, (from *intendo*, *to stretch out*). INTENTION. It is either extension or indication. Healing a wound "by the first intention," means when divided parts are placed in contact, and unite without any suppuration.

INTERCE'PTIO, (from *intercipio*, *to stop*). See APOLEPSIS.

INTERCOSTA'LIS, (from *inter*, *between*, and *costæ*, *the ribs*); any part situated between the ribs; viz.

INTERCOSTA'LES ARTE'RIÆ, which arise in pairs from the aorta, and run on the lower parts of each rib. They are eight, nine, or ten in number, of which the upper come from the subclavian. The in-

tercostales of the true ribs anastomose with the internal mammary; those of the superior go to the muscles of the belly.

INTERCOSTA'LES MU'SCULI; *mesopleurioi*; INTERCOSTAL MUSCLES, are eleven in number on each side externally, and as many internally; in all forty-four. The external ones pass downwards and forwards; rising from the edge of the superior, and inserted into that of the inferior, rib: their fibres run nearly parallel; but near the sternum disappear. Their use is to elevate the ribs. The internal ones are the reverse of the external; rising from the edges of the inferior, and inserted into those of the superior, ribs; consequently they decussate each other. These depress the ribs; so that by the alternate action of the two sets of muscles, the thorax is expanded in inspiration, and diminished in capacity during expiration.

The levatores costarum longiores and breviores of Albinus are those portions of the external intercostals which arise from the transverse processes of the vertebræ, where the ribs are fixed to them, and other portions which pass over one rib and terminate in the next below it. Similar portions of the internal are called by Douglass *costarum depressores proprii Cowperi*.

INTERCOSTA'LES NE'RVI; INTERCOSTAL NERVES, *sympathetici nervi majores*, are formed of all the spinal nerves, and of branches from the fifth and sixth pairs from the brain. They run on the other side of the ribs. This is a very important part of the nervous system; but it has already claimed a large share of our attention. See CEREBRUM.

INTERCOSTA'LES VE'NÆ, DEXTRÆ, SUPERIORES, ET INFERIORES. See AZYGOS.

INTERCU'RRENS FE'BRIS, (from *inter, between*, and *curro, to pass*). An INTERCURRENT FEVER. Some fevers are epidemical in certain seasons only; others happen in all years, and are only occasionally epidemic. The former are called *stationary*, the latter, by Sydenham, *intercurrents*. See Sydenham's Works.

INTERCU'RRENS vel INTERCI'DENS PULSUS. When between two strokes at proper distances a third quickly intervenes.

I'NTERCUS, (from *inter, between*, and *cutem, the skin*). See ANASARCA.

INTERDE'NTIUM, (from *inter, between*, and *dentes, teeth*). The intervals between teeth of the same order.

INTERDI'GITUM, (from *inter, between*, and *digitus, toe* or *finger*). A CORN BETWEEN THE TOES.

INTERFEMI'NEUM, (from *inter, between*, and *femur, the thigh*). See PERINÆUM.

INTERFOLIA'CEUS, (from *inter, between*, and *folium, a leaf*). Proceeding from between opposite leaves.

INTERLU'NIUS MO'RBUS, (from *inter, between*, and *luna, the moon*; because it was supposed to affect chiefly those born in the wane of the moon). See EPILEPSIA.

INTERMI'SSIO, (from *intermitto, to discontinue*). The intervals betwixt two fits of any distemper.

INTERMI'TTENS FE'BRIS, (from the same). An INTERMITTENT FEVER, is a febrile disease consisting of distinct attacks, with perfect freedom from fever in the intervals. Different names are given to this fever according to the periods of its return; if after twenty-four hours, a *quotidian*; if after forty-eight hours, a *tertian*; if after seventy-two hours, a *quartan*; after ninety-six hours, a *quintan*, or a *pemptæus*. Such intermittents are, however, rare; and those with longer intervals have been styled *erratic*. Those are called *autumnal* which begin in August, and those *vernal* which begin in February.

Dr. Cullen places intermittent in the class *pyrexiæ*, order *febres*; defining it fever arising from marsh miasma, consisting of many paroxysms; a total freedom from fever, at least an evident remission; returning with a marked exacerbation, and generally with shivering; having one paroxysm only in a day. He adds, "whoever will weigh what will be delivered concerning remittent fevers, and their distinction from continued fevers, strictly so called, will readily see why I have thought it necessary to change the character formerly given of intermittents as well as continued fevers." The latter he defines fevers having no intermission, nor arising from marsh miasma, but continuing only with slight remissions and exacerbations; having two exacerbations each day. "He thinks that the nosologists, Sauvages, Linnæus, and Sagar, have not acted judiciously in instituting a separate order of remittents, as if they were altogether different from perfect intermittents; for those fevers called *remittents* arise from the same cause, viz. marsh miasma, as intermittents; each appears as an epidemic, in the same place, and at the same time of the year; each is cured exactly by the same remedies; and very often in the same subject, the same disease sometimes exhibits the intermittent, sometimes the remittent, type: diseases, therefore, so extremely alike with respect to their causes, mode of cure, and type, ought neither to be placed under a different order, or in different section."

The patient, though free from fever, is slightly indisposed the following day with chilliness and languor: he hath a weak and slow pulse, his urine is pale, and either deposits a sediment, or contains a small cloud suspended in it; the sediment is of a reddish colour, exactly resembling brick-dust; the surface frothy, or covered with a pellicle. The beginning of autumnal intermittents is sometimes not very different from that of continual fevers. When weakly persons are the subjects, the intermissions are proportionally less distinct.

Obstinate intermittents often end in dropsies, or hectics from obstructed viscera. Vernal intermittents often require no assistance, and very rarely prove fatal.

Intermittents are distinguished by the very regular appearance of each stage of fever formerly described (see FEBRIS); and the continuation of the paroxysm sometimes extends to twenty-two hours, the patient having scarcely two hours interval; but this chiefly happens when two diseases of this kind have attacked the patient at once, so that the fit of one comes closely on the conclusion of the former paroxysm. A single quotidian will, however, sometimes last eighteen or twenty hours.

In general it will be found that the longest paroxysms have the shortest intermissions; and the contrary; but the time of the paroxysms is occasionally anticipated or retarded. An increase of the interval, or rather a retarded paroxysm, shows the disease to be declining; while an anticipated attack is rather a sign that the disease is becoming a remittent or a continued fever.

It is singular that intermittents rarely attack in the

night. When the paroxysm anticipates, so as to come before eight, its next step is usually to the febrile period of the evening, previous to the usual day of its attack; and when it is retarded beyond eight or ten in the evening, the following attack is usually at eight in the morning following its accustomed day. Continued fevers are said to attack in the night, but we have generally found that the patient has complained in the evening, and that the fever has then formed, though the rigor has only taken place during the night, or rather about four in the morning.

The attack of intermittents is sometimes attended with the most alarming symptoms, such as syncope, apoplexy, a great load on the chest, with threatening suffocation, epileptic paroxysms or violent spasms, or a coldness, which increases till the patient sinks into torpor, soon followed by death. These are circumstances of peculiar danger, and require the most minute attention. The hot fit is also sometimes so violent as to be attended with delirium, and occasionally with rupture of the vessels, from the violence, in the language of Dr. Cullen, of the re ction. These circumstances require particular attention in the conduct of the cure.

Intermittents are sometimes complicated; that is, there may be two tertians, or two quartans, existing at the same time. The double tertian of authors, the duplicana of Linnæus, consists of two tertians, returning each at their regular times, and thus attacking every day. The real disease is distinguished from a quotidian by the time of the attack, which in a tertian is about noon, by the shorter paroxysms; and by the fits of fever which occur on the alternate days resembling each other: while, if that on the succeeding is compared with the fi' of the former day, some difference is observable. Another form of the double tertian is with two paroxysms in one day; and this kind is distinguished by the appellation of *tertana duplicata*. A triple tertian has also been observed, consisting of two paroxysms on each alternate day, and one only in the interval. This is the semitertiana of authors, the tertiana triplex of Sauvages. Tertians differ also in the degree of remission, when complicated in the manner already mentioned. Thus a double tertian, which returns daily, will have often the remission between the unequal and equal day; between the third and the fourth for instance, more strongly marked; between the equal and unequal day less strongly.

Quartans vary as much; but, indeed, in this country quartans are uncommon, except in the marshy countries on the east of this island. The quartana duplicata of Sauvages consists of two paroxysms every fourth day, and on the other days none. The quartana triplicata consists of three paroxysms every fourth day, with three days of intermission. The quartana duplex has only an intermission of the third day, and the paroxysms of every fourth day are alike. The triple quartan attacks every day; and the paroxysms of every fourth day resemble each other. This disease, like the double tertian, is distinguished by the period of the attack and the shortness of the paroxysms. The author of this article, in thirty-five years practice, has seen but one quartan, which was imported from a distant county.

Quotidians vary but little, except in their causes and their partial attacks. Many of these are symptomatic only; but the partial quotidians attended with violent pains are peculiarly distressing, and with great difficulty removed. The quintana and septimana are described by authors very vaguely, and seem, in general, to be symtomatic.

Intermittents are not always dangerous, and the vernal agues generally disappear on the approach of summer. The autumnal ones are more frequently attended with infarctions of the liver, and the more obstinate kinds of these, the quartans, leave often this organ in a schirrous state. Dropsies and hectics are the consequence. It has been, on the other hand, contended, that vernal tertians are salutary, and clear the constitution of other diseases, as indigestion, flatulency, and acidity of the stomach; habitual rheumatisms and other inflammations; cutaneous and nervous complaints. For this opinion we offer the very respectable authority of Dr. G. Fordyce, for having seen but few cases of intermittents, we will not add, as an objection, that such salutary effects have not occurred to us. We have found every intermittent, which we have seen, to be a disease which we have been anxious to cure as speedily as was consistent with the safety of the patient.

The cause of intermitteuts is exclusively the miasma from marshes, and the remote causes those of fever in general. We have already observed, that no satisfactory reason has been assigned for the recurrence of the paroxysm. Dr. Cullen attributes the duration of fevers to the violence of the spasm or the weakness of the reaction; and though in each paroxysm of intermittent the spasm may be conquered, yet its cause, the atony, remains to be combated by a new series of symptoms. It is evident that in intermittents the cause remains, for they leave a languor, in part the effect of the exertions; but, in part also, of the remaining debility. While we have modified, in some measure, the doctrine of Dr. Cullen, yet this explanation, with a change of the language, may appear probable; and it is supported by a fact already stated, that the concluding paroxysm is the most violent. We know not, however, the duration of an intermittent in consequence of the debility remaining unsubdued; for we shall find, that it is often continued from habit, and that raising any violent emotion, fixing the attention, or exciting a different train of motions, in any way, will prevent its recurrence; and, when once prevented, the fit seldom returns It may be then questioned, whether, even in the early stages, it may not be the creature of habit. When an intermittent first attacks, its paroxysms are seldom regular. When they become so, they soon establish a habit which we know is with difficulty removed; but this habit seldom takes place but in weak, mobile constitutions.

In the cure of intermittents, our first object is to prevent the recurrence of the fit; our second to conduct the paroxysm, so as to obtain a complete solution of the disease; the third to increase the general tone of the system, in the intervals, that the disease shall not again return.

Our first object, for it is not strictly an indication, is limited to those remedies whose immediate action may prevent the attack. These are means of increasing the tone of the system, or supporting the action of the extreme vessels, so as to prevent their quiescence, perhaps their spasm. The tone of the system is increased by stimulants and tonics. With this view aromatics,

the strongest acids, and ardent spirits, in almost every imaginable variety of form, are administered when the fit is expected. Very large doses of bark are also given, so as to accumulate from one ounce to two in the stomach at the time of the usual return. The former of these plans is highly injurious when a phlogistic diathesis prevails in the system; for it converts the intermittent often into a continued fever, with topical inflammation. The latter is equally injurious, when the stomach and bowels have not been previously cleared; and occasions those infarctions styled *ague cakes*, which have been so often attributed to the bark. In different circumstances each has succeeded.

The action of the extreme vessels is supported by emetics and sudorifics. An emetic is given previous to the return, while the perspiration is supported by warm negus, the volatile alkali, or the sudorific powder of Dover. Opium, with warm teas, will equally succeed; but, in general, for the reasons formerly assigned, great external heat should be avoided. Opium is not the only medicine which acts peculiarly on the vessels of the skin, though it is the most powerful. Guaiacum has a similar effect; and the ammoniated tincture, when joined with opium, is often a valuable remedy used with these views. Musk, empyreumatic oil, and ether, are said to have had a similar effect, without producing sweating; but in such cases, they probably, if successful, which has been doubted, act as simple stimuli. To the same source may be attributed the effects of bracelets of mustard seed and garlic to the wrists and ancles; bruised spiders and tobacco applied to the wrists; yarrow, &c. to the feet. These excite so great a degree of inflammation as to increase the heat as well as the circulation, and have often undoubtedly succeeded. We must add, that whenever we attempt to prevent the paroxysm of an intermittent by sweating, this mode of relief must be continued till the period of the paroxysm is at an end, or at least till the time when the sweating stage would have otherwise commenced.

Those means which excite terror, surprise, and horror, or, as we have said, raise a train of new emotions, will prevent the return of paroxysms. A man has been pushed into the water; fire has been cried; the most distressing tidings invented and communicated. A patient, labouring under an ague, has been ordered to swallow half a pint of his own urine; to hold a toad in his hand till it dies; to eat common spiders in a raisin, or cobwebs in crumb of bread. All these remedies fill the mind with such dread as to counteract the impression of the cause; but in general they are dangerous; and when we wish to prevent the fit, we depend rather on the tonics, the stimulants, and the sudorifics. These are often highly necessary; for when the fever attacks with apoplexy, epilepsy, or other symptoms which threaten the life; or when the patient is so far debilitated that another fit would be probably fatal; we must take the most decisive steps to prevent it. We remember to have seen three cases of this kind, in which by the sudorific plan, detailed above, we succeeded.

To conduct the paroxysm so that its solution shall finally remove the disease, is often beyond our power. An emetic, given at the first approach of coldness, will often lessen both it and the next stage; and we must repeat, what Dr. Fordyce tells us, that he has remarked the superior efficacy of the antimonial preparations to the ipecacuanha. When the hot fit comes on it must be mitigated by cold, and by the cooling diaphoretics. Opium, at this period, is said by Dr. Lind to lessen the heat, and hasten the sweat; and when the last stage has fully come on, the exhibition of the bark is said to render the sweating more effectual. Such are the observations of authors, which we can neither confute nor confirm. From what we have, however, read and seen, we suspect that these measures lessen the inconveniences of the paroxysm, but seldom put a stop to the disease.

In the intervals our chief exertions must take place; and we have been lately accustomed to trust almost exclusively to the Peruvian bark. We have seen (see Cortex Peruvianus) that we can derive little information from the sensible qualities of this medicine, or from its analysis, either in the milder or more forcible separation of its component parts, and we must rest contented with the fact, that the bark will usually cure intermittents. We say "usually," for was it so certain a remedy as the language of authors would lead us to suppose, they would not fly from the common to the red and yellow kinds, to combinations of bitters and aromatics, to copper and to arsenic. As it is, however, the common remedy, we must direct its exhibition.

We have already spoken of the bark, given immediately preceding the fit, and in the sweating stage. We now speak of it as a remedy in the intervals. In general, then, it must not be given while there are any considerable infarctions of the viscera. We have already shown (see Febris), that fever almost consists in, or is constantly attended with, a disturbed balance of the circulation, and that the biliary system and the brain, from their structure and constitution, receive a large proportion of blood, which is confined to the larger vessels. Fever cannot, therefore, continue long without infarctions of the liver at least, if not excessive fulness of the cerebral system; and in this state the bark is certainly injurious. Physicians may colour this objection in a variety of ways, but they cannot elude it. Intermittents then, which continue usually some time without decisively showing their true nature, must be attended with at least fulness in each viscus, and this should be previously removed. We have already shown that emetics and cathartics are the chief remedies for this purpose; and hinted, that it was not without reason that physicians formerly condemned the cortex as the cause of these swellings; but, in reality, they should have blamed its injudicious use. These opinions are confirmed by another caution, universally laid down, that the bark is only admissible during a remission. In fact, at the time of the fit the fulness is most considerable: after its solution, that degree of fulness only remains which is owing to the dilatation of the vessels. Dr. Fordyce is so confident of its injury during the paroxysm, that he directs it to be omitted during the time that the paroxysm would have come on. In other words, if the fit is expected on a given day, which usually lasted from ten to four, or six, and if the bark, taken previously, has prevented the accession, the remedy must still be omitted during this period, though no accession really takes place. We find also that, in remittents, unless the remission is considerable, the bark is not always admissible; in continued fevers it is very rarely so.

Though the bark be confined to the interval, it is not necessary that it should be exhibited with equal freedom in every period of that interval. In a quartan, for instance, though given in the first day of intermission, its doses need not, during that day, be considerable, or often repeated. On the next the medicine should be given in as large doses as the stomach will bear. In a tertian, the dose of the remedy should be greatly increased during the last six hours of the interval. What the dose should be must be determined by the judgment of the practitioner, and the constitution of his patient. Not less than an ounce of the powder will effectually stop a tertian; and a much larger quantity must be taken in the interval of a quartan. As the interval of the fits of a quotidian is short, we must be more active; but the disease should be lessened by emetics and carthartics before the bark is employed.

It is common and highly proper to recommend the removal of a diathesis phlogistica previous to the exhibition of the bark; but it is equally necessary to guard against its purging or its constipating effects. The former is most successfully opposed by combining a laxative, as rhubarb with the bark, and the latter by opium; but as the rhubarb adds to the bulk, and to the nauseous taste of a medicine, already sufficiently disagreeable, we may choose the period of the accession for the action of any quick purgative, as the castor oil with sena; the sena or jalap with cream of tartar, or the jalap with calomel. Should opium disagree, the bark may be taken in a strong decoction of logwood. When we have been most successful, we should not too soon abandon our remedy, as intermittents, except when continued from habit, are very liable to a relapse.

The bark, with every precaution, will not sometimes remain on the stomach, though joined with aromatics, with opium, or followed by an effervescing draught In this case, we have been directed to quilt it in a calico waistcoat, to be worn next the skin: to bind it round the wrists; to inject it in a clyster: or to bathe the patient in its decoction. Each method is said to succeed; but what will not appear to succeed in the eye of its inventor? If the bark is really useful in these ways, we should expect that it will not be employed in any other; but when we reflect on the quantity required to cure an intermittent in the stomach, an organ which so quickly sympathises with the extreme vessels, the brain, and the sensorial power, we can scarcely expect lesser quantities, applied less advantageously, to succeed. The advocates of this practice have quoted Dr. Alexander's experiments with some triumph, to show that bark applied to the skin is absorbed; but when large quantities have been given to check an intermittent at once, and vomiting has succeeded, the whole is apparently evacuated though the fit be stopped. If it be contended that the bark in this way is really applied to the extreme vessels themselves, the advocates for the practice must show how it passes the cuticle, except by the absorbents; and prove, what may be still more difficult, how in this way it can obviate the cause, viz. the atony of the sensorial power.

The prejudices against the bark, on its first introduction, led to a variety of substitutes for it in these diseases; and all the bitters and astringents were occasionally employed, joined sometimes with alkaline and neutral salts, at others with aromatics, more simple stimulants, or antispasmodics; the abrotanum, the various species of wormwood, the carduus, the centaury, the camomile flowers, the columba-root, orange and lemon peel, gentian, quassia, tansey, rue, St. Ignatius' bean, with almost every medicine which contains a bitter juice. It is a doubt whether the bitter is the same in all. When the bitters are pure, as in the gentian and camomile flowers, the principle is apparently the same; but the wormwood, for instance, contains an essential oil totally different from its bitter juice; the orange peel not only an essential oil, but an astringent principle. This may have perhaps occasioned the preference of the latter, since the bark also contains an astringent portion; and whatever aversion physicians had to the bark, in their substitutes they came as near it as possible. The action of bitters and astringents we have already noticed. See AMARA and ASTRINGENTIA.

The astringents employed have been the alum, the galls, the tormentil, and the oak bark: each, it is said, has been successful; but their success has not been so decided as to lead to their general employment instead of bark.

The additions to the bitters and astringents, though chiefly to the former, have been, we have said, alkalis, neutral salts, stimulants, or antispasmodics. Boerhaave was fond of the bitters with alkalis, as producing a saponaceous medicine, in his opinion a powerful deobstruent; though he sometimes preferred the neutrals. These are undoubtedly of great utility as antifebrile medicines, though seldom sufficiently powerful to stop the paroxysms of an intermittent. The aromatics usually added are nutmeg and ginger; the antispasmodics, the animal oil of Dippel, or, sometimes, the less elegant form of candle snuffings. The latter, with nutmeg, is said to have often effected a cure. Similar additions sometimes render the bark more effectual.

The other substitutes have been the metallic tonics, copper, arsenic, and iron. We know not that copper has been employed in the pure intermittents, though used with success in the intermittentes larvatæ, which we shall notice in the following article. Arsenic was employed many years since in this disease, and lately has been in general use, from the success of Edwards's ague tincture (see ARSENICUM). It is undoubtedly a very active and powerful medicine: nor have we found any disadvantages from its use. It has succeeded, when the bark in every form, and with every addition, has failed. Fowler's arsenical solution is made in the following manner: take arsenic very finely powdered, and fixed alkaline salt, of each sixty four grains (some ordered half the quantity); distilled water, half a pint; these are to be put into a Florence flask, and placed in a sand heat: the water is then to boil slowly till the arsenic is perfectly dissolved: when the solution is cold, half an ounce of compound tincture of lavender is to be added, and of distilled water, another half pint, more or less, so that the whole of the solution shall yield by measure a pint, or rather weigh fifteen ounces and a half. Patients from two to four years of age may take from two to four drops; from five to seven years, from five to seven drops; from eight to twelve years, from seven to ten drops; from thirteen to eighteen and upwards, twelve drops at a dose, in any proper vehicle, two or three times a day.

Iron is sometimes added to the bark and bitters to increase their virtue; but it has, we believe, been

seldom trusted alone. All these medicines seem to act by increasing the general tone of the system, and thus counteracting the debility in which the disease apparently consists. The mineral acids, though powerful tonics, have not been used, we believe, in this disease.

The general management of patients who labour under intermittents will not detain us long. It is in the first place necessary to remove them from the infected air; but the activity of modern husbandry has lessened the number of marshes, and the disease is comparatively rare. In parishes where the number of intermittents was not annually less than two hundred respectively, the disease is not found, or only in a few instances in its disguised state. The diet should be light, easy, and digestible. The ancients seldom admitted of food in the first days of fever; and in the early periods of intermittents, when the disease has seldom any regular interval, the less nourishment that is taken, the sooner will the fever assume its proper type. In general, when the fits are more distinct, animal food should be avoided unless there is sufficient time to complete the digestive process before the expected return. This precaution must be continued after the fits have disappeared.

The *intermittentes comitatæ* and *perniciosæ* of Torti are more nearly allied to the remittents, and are indeed often of the remittent kind. They will therefore be considered with advantage under that article. See REMITTENTES.

See Torti Therapeutice Specialis, Sydenham's Works; Cleghorn on the Diseases of Minorca; Hunter on the Diseases of the Army; Senac de Recondita Febrium Natura; Fordyce on Fevers, second Dissertation.

INTERMITTENTES LARVATÆ. A fever of a truly intermittent nature is often disguised under the appearance of a very different complaint, or seems to the inexperienced practitioner a fever of a different kind. In the first, the real disease may generally be suspected from the appearance of regular paroxysms, or more certainly by perfect intermissions, since these more often occur in such disguised intermittents than a regular recurrence of the disease. *Intermitting pains* of every kind, where the paroxysm is completely terminated, are of this kind; and the most common and most troublesome instance is the *hæmicrania*. The distinction of the complaint is not easy, for pains in the head, from whatever cause, are not constant: even the DOLOR FACIEI CRUCIANS, q. v. the tic doloreux, has its remissions, (see CEPHALALGIA). Hæmicrania, therefore, is distinguished from its situation, occupying often with such minute precision one half of the head, that the patient can place the point of a pin between the part pained and that unaffected; frequently from its regular attack, at least a regular continuance; in many instances from its being ushered in by rigor, followed by feverish heat; almost always from soreness in the bones of the cheek of the side affected during the paroxysm only. It is a disease of the most distressing kind, for its obstinacy is equalled only by the violent degree of the pain.

The intermitting nature of this complaint is known from its occurring in the low, damp, marshy situations, from its regular recurrence, and from the remedies which relieve it. But among these we cannot reckon the Peruvian bark alone; for, though large doses have sometimes appeared to cure, they are often ineffectual, so that we are rather inclined to attribute the relief, sometimes experienced, to the spontaneous cessation of the disease. The remedy which most frequently succeeds is that recommended by Dr. Grant, consisting of an ounce of valerian, half an ounce of bark, two drams of the Philonium Londinense, one dram of kali, with a scruple of rhubarb, made into an electuary with simple syrup. He remarks, what we have found to be true, that if this quantity is swallowed between two paroxysms, the last will be greatly mitigated; and if the same quantity is swallowed between the two next, the complaint will be so far cured as to be scarcely troublesome. The effects of this plan, however, are rendered more certain by giving an emetic before the expected attack, with a blister behind the ear of the side affected; and as it is necessary to keep the bowels free, which the proportion of rhubarb is unequal to, the period of the accession may be employed for this purpose. The duration of the pain is amply sufficient for the operation of salts, of the oleum ricini, or jalap.

The quantity to be taken, according to this plan, may be sometimes inconvenient; but the pain is so excruciating that we have scarcely found any one whose resolution has not been equal to the alternative. It sometimes, however, though rarely, has happened, that the stomach will not retain it: the resolution has occasionally failed; and even the medicine has not succeeded, for the disease in our practice has been frequent. In such circumstances the copper has sometimes relieved; and, in more than one instance, a secret medicine, which is pretty certainly a solution of arsenic. If the period of the fever is not required for the action of a laxative, the pain may be mitigated by opium, with which camphor or musk has been combined; but of these additions we cannot speak from our own experience.

Other periodical pains and nervous complaints, as the hooping cough, hiccough, nausea, colic, and palpitations, regularly recurring, are very frequently removed by the same means (Senac). It has been usual to give the bark in every periodical complaint; but it seldom succeeds, except in doses much more inconvenient than those of Dr. Grant's medicine; and, when it seems to relieve, it leaves the patient more subject to relapse.

There are, however, symptoms periodically recurring, not always of this kind; but we have only been able to trace them when belonging to one disease, viz. lues venerea. We have seen a periodic opthalmia, a hæmicrania, and an hæmorrhage from the nose, recurring at regular intervals in this disease. Each has been cured by a mercurial course. It may be said, that mercury, like copper and arsenic, will remove it; and it may be true, but each laboured under syphilis. The patients are at this moment alive, and the author, by a personal application, has refreshed his memory on the different subjects. We must add, however, that Senac, an author of the highest credit, mentions intermitting hæmorrhages, ophthalmy, ear and tooth-ach, cephalalgia, pains under the scapula, nephritic affections, pain of either leg or arm, and of the stomach, often without any other appearance of fever. Those intermittents also which we have mentioned as attacking with syncope, apoplexy, asthma, and convulsions may

be properly styled *larvatæ*. The nature of these cannot be at once known; but some opinion may be formed from the prevailing epidemic, from the damp marshy situation in which the patient lives, from the bilious vomiting, the lateritious sediment in the urine, from the recurrence; but, above all, as we have said, from the very perfect intermission. The third paroxysm is popularly supposed to be fatal; indeed it often is so.

The varieties of intermittents which we have noticed, in which the cold obstinately continues; where the hot fit becomes phrenitis, or where the subsequent debility is attended with marks of putrefaction, and the worst symptoms of malignant fevers, have been reckoned among the disguised intermittents by Morton and Torti. But these authors were preceded in this opinion by Salius Diversus, by Valesius, Mercatus, &c. Indeed were a descriptive (raisonnè) Medical Biography, a work much wanted, ever published, numerous reputed discoveries might be carried far beyond the ages of the supposed authors.

We have already mentioned the manner in which intermittents pass into remittents, and into continued fevers of the worst kind; but we have referred the consideration of these subjects to the REMITTENTS, q. v. which afford examples of the most destructive exacerbating fevers. See Morton de Febribur, Senac de recondita Februm Natura, lib. 2.

INTERNO'DIUM, (from *inter, between*, and *nodus, a joint*); that part of the stalks of plants which are between two joints or knots; in anatomy the knuckles, and the space between the joints of each finger.

INTERNU'NCII DI'ES, (from *internuncio, to go between*; as standing between the increase and decrease of the disease). See CRITICI DIES.

INTERO'SSEA ARTE'RIA, (from *inter, between*, and *ossa, bones*). The CUBICAL ARTERY, in its course between the heads of the radius and ulna near the interosseous ligament, gives off these arteries, the internal and external.

The internal runs close to the ligament, till it reaches below the pronator teres, where it perforates the ligament, and passes to the convex side of the carpus, and back to the hand, where it communicates with the external interosseus, the radical and the cubical arteries.

The external pierces the ligament about three fingers breadth below the articulation, and sends off a branch towards the external condile of the os humeri, under the ulnaris externus and anconæus minimus, to which, and to the supinator brevis, it is distributed. The interosseous artery then runs downwards on the outside of the ligament, giving branches to the ulnaris, externus, extensor digitorum communis, the extensores pollicis indicis, and minimi digiti. Having reached the lower extremity of the ulna, it unites with a branch of the internal interosseous artery, which at this place runs from within outwards, and is distributed with it on the convex side of the carpus and back of the hand, communicating with the radial artery, and with a branch of the cubital. By these communications this artery forms an irregular arch, from whence branches are sent to the external interosseous muscles, and to the external lateral parts of the fingers.

INTERO'SSEA LIGAME'NTA. The interosseous ligaments in the fore-arm are fixed by one edge along the sharp angle of each ulna, and by the other along that of the radius. They principally consist of two very strong planes of fibres, which cross each other at oblique angles, and leave holes at different distances for the passages of blood-vessels. The ligament ties the two bones closely together, and the two planes serve for the insertion of several muscles. In the supination of the hand it is very tight, but in the pronation it is folded a little lengthways.

INTERO'SSEI MU'SCULI, are found both in the hands and feet. There are three in the upper part of the hand, and as many on the inferior. Their name describes their origin, and they are blended with the lumbricales, performing the same office, of moving the fingers sideways. The first of the interossei interni is called by Albinus *posterior indicis*; the second and third are the *prior annularis*, and *interosseus auricularis*. These three muscles draw the fingers, into which they are inserted, towards the thumb. There are four interossei externi, for a small muscle, which supports the fore finger, the semi interosseus indicis of Winslow, the prior indicis of Albinus, is included. This muscle then may be styled the first; the second is the prior; and the third the posterior medii. The fourth is the posterior annularis. It is useless to be more minute in these unimportant muscles. They may be cut through with little danger, and will unite with as little trouble.

In the feet several small muscles fill up the four interstices between the metatarsal bones, after the same manner as in the hand. Like the interossei of the hand, there are three internal and four external. Their use is also similar.

INTERPELLA'TUS MO'RBUS, (from *interpello, to interrupt*). A disease attended with irregular or uncertain paroxysms. Paracelsus.

INTERPOLA'TUS DI'ES, (from *interpolo, to renew*). Days interpolated between two paroxysms. Paracelsus.

INTERSCA'PULUM, (from *inter, between*, and *scapula, the shoulder-blade*). See SCAPULA.

INTERSE'PTUM, (from *inter, between*, and *septum, an inclosure*). See UVULA and SEPTUM NARIUM.

INTERSPINA'LES CO'LLI, (from *inter, between*, and *spina, the spine*). Winslow calls these muscles *spinales colli minores*. Dr. Hunter calls them *intraspinalis*, adding, that they lie between the spinal processes of the neck and loins, serving to erect the body, by bringing the spinal processes nearer to each other. The *interspinales dorsi* and *lumborum* are tendinous, and connect the spinal with the transverse processes.

INTERTRANSVERSA'LES MU'SCULI, (from *inter, between*, and *transversales, the transverse processes*). They lie between the transverse processes of the cervical and lumbar vertebræ, serving to bend the neck and body to one side. Winslow calls them *transversales minores*. To the first of these muscles the name *concutiens* has been given.

INTERTRI'GO, (from *inter, between*, and *tero, to rub*). *Attrita, attritio*. A GALLING, or erosion of the cuticle, or of the skin. Children are apt to have excoriations behind their ears, in the neck, and thighs: the last often arise from neglect. The excoriated parts should be bathed frequently with warm water; and powdered chalk, or cerusse sprinkled on them through a bit of fine muslin, when quite dry. Dr. Cullen considers it as a variety of erythematous inflammation.

INTERVERTEBRA'LES MUSCULI, (from *inter, between,* and *vertebra*). They arise from the body of one vertebra laterally, and are inserted, after an oblique progress, into the back part of the other vertebra, immediately above it. They draw the vertebræ nearer to one another, and a little to one side.

INTESTI'NA TE'RRÆ. See LUMBRICUS TERRESTRIS.

INTESTINA, (from *intus, within*). The INTESTINES, *chordæ* and *pantices.* From the pylorus to the anus is one continued canal, divided into the small and great intestines, covered by the mesentery and mesocolon; and, as they are longer than these membranes, they are contracted in folds to the length of the latter. The whole length of the intestines is between seven and eight times the length of the body; the small ones are about five of these parts. The small intestines called *dertron,* and *cholades,* because they contain bile, are named DUODENUM, JEJUNUM, and ILEUM, q. v.: the large intestines are, the CŒCUM, the COLON, and RECTUM, q. v.

The first coat of the intestines, the external, is from the peritoneum, called *cellulosa tunica Ruyschii; tunica externa* vel *membranosa;* the second is the muscular coat, formed of two planes of muscular fibres, the one thin and longitudinal; the other thicker, in a cylindrical direction: the third is styled the nervous, but consists of cellular substance; the fourth the villous, *peristroma.* The villi are of different shapes and lengths in different parts of the intestines, more thick in the small, more long and thin in the large ones; they are thought to be secreting and absorbing organs, as there the arteries seem to terminate, and the veins to begin.

The glands of the intestines, *enteradenes,* are supposed to be lodged in the nervous coat, next the villous, and are divided into *glandulæ solitariæ* and *aggregatæ;* but their existence is not clearly established.

In the great intestines we may observe little holes, which, when inflated, lead to cells analogous to the follicles of Malpighi; and by analogy we may suppose glands to exist in the great intestines near the anus, to separate a lubricating mucus, for facilitating the passage of the fæces.

The arteries and veins run together on the intestines.

In the intestines the first digestion is completed; from them the chyle is absorbed, and through their cavity the fæces ultimately carried off. These actions are performed by their peristaltic or vermicular motion, which apparently moving their contents backward or forward, in effect propel them; as the waves of an increasing tide sometimes fall short of, and at others gain on those which preceded them, but on the whole advance. This motion is caused by the successive contraction and relaxation of the circular fibres of the muscular coat; and the principal stimulus to this motion is the distension of the canal.

The action of the lungs on the diaphragm and of the abdominal muscles assist the progress of the contents of the stomach and intestines. Thus the clara lectio, reading aloud, is said by Celsus to assist digestion.

INTESTINA'LIS, (from *intestina, intestines*). Belonging to or proceeding from the bowels.

INTESTINA'LIS ARTE'RIA. See DUODENALIS ARTERIA, and GASTRICA DEXTRA ARTERIA.

INTESTINA'LIS VE'NA. See DUODENALIS VENA.

INTESTINO'RUM SOLA'MEN. The *semen anisi,* according to Hoffman; and the *oleum anisi,* according to Van Helmont.

INTESTINO'RUM TU'NICA EXTE'RNA, and MEMBRANOSA. See INTESTINA.

INTOXICA'TIO, (from τοξικον, *poison, venom*). It is properly the same as *infectio,* but generally synonymous with *inebriation.* See INEBRIANTIA.

INTRAFOLIA'CEUS, (from *intra,* and *folium, a leaf*). Growing within the side of the leaf.

INTRASPINA'LIS, (from *intra,* and *spina, the spine*). See INTERSPINALES.

INTRATRANSVERSA'LIS. See INTERTRANSVERSALES.

INTRICA'TUS, MUSCULUS, (from its intricate folds). See ABDUCTOR AURIS.

INTRI'NSECI, (from *intra,* and *secus, towards*). Painful disorders of the internal parts.

INTRI'TUM, (from *interor, to be rubbed*); *entrimma;* a culinary term for minced meats, or rather such as are prepared by pounding, as potted beef, &c.

INTROCE'SSIO, (from *introcedo, to go in*). See DEPRESSIO.

INTROSUSCE'PTIO, (from *intra, within,* and *suscipio, to receive*). Slight degrees of introsusceptio seem to occur frequently, and are soon restored; but even when in a considerable degree, the functions of the intestines are often not disturbed. Unless inflamed, or adhesions are formed between the external part and that "received within," no disease seemingly follows. It occurs often so low in the rectum, that it may be reached by the finger, or the *received* intestine may be even protruded. Monro, Edinburgh Medical Essays. See ILIACA PASSIO.

I'NTSIA. *Mimosa intsia* Lin. Sp. Pl. 1508. A large evergreen tree in Malabar, called also *acacia Malabarica globosa.* The juice of the leaves and bark is used to relieve pains in the bowels. See Raii Historia.

INTUMESCE'NTIÆ, (from *intumesco, to swell*); *tumidosi.* Disorders attended with a swelling of the body, or a considerable part of it; the second order of the *cachexiæ.*

INTUSSUSCE'PTIO. The same as INTROSUSCEPTIO, q. v. See ILIACA PASSIO.

I'NTYBUS, (from *in,* and *tuba, a hollow instrument,* from the hollowness of its stalk). A name for the *cichoreum latifolium* sive *endivia vulgaris.*

I'NULA. See ENULA.

INU'NCTIO, (from *inungo, to anoint*). INUNCTION. The action of anointing, or the materials which are employed.

INVA'SIO, (from *invado, to attack*); *accessio.*

INVERECU'NDUM OS, (from *in, not,* and *verecundus, modest;* because the os frontis is regarded as the seat of impudence). See FRONTIS, OS.

INVE'RSIO U'TERI, (from *inverto, to turn inwards*). See PROCIDENTIA UTERI.

INVI'DIA, (from *in,* and *video, to look upon,* a nimis *intuendo* fortunam alterius). ENVY; a depressing passion arising from a consciousness of the superior advantages of another. It induces debility, indigestion, and hectic.

INVO'LUCRA, (from *involvo, to fold in;* from coming next after the child). *Secundines, hystera, membranæ.*

They form an universal covering for the fœtus, and the water in which it floats during pregnancy. They consist of the membranes called CHORION, and AMNION; the PLACENTA, and part of the FUNIS UMBILICALIS, vide in verbis.

If in labour the membranes do not break immediately upon their being pushed into the vagina, they should be allowed to protrude still further, in order to dilate the os externum.—If they suddenly burst, and discharge much water, and the pains soon slacken, the labour becomes tedious While the head of the child is yet covered with the unbroken membrane, it is smooth, soft, and slippery to the touch Sometimes when the head presents, the fontanel feels puffy, and deceives us, as it is mistaken for the membranes; but this should be carefully distinguished. If during labour the waters push the membranes down in an oblong form, the birth will be tedious. A short, broad, or round form is the best.

INVOLU'CRUM, (from the same); the calyx of an umbelliferous plant. See also PERICARDIUM.

I'ON, (from *Ionia*, its native place). See VIOLA.

IO'NIA. See CHAMÆPITYS.

IONTHLA'SPI, *lunaria*. It is *clypeola ionthlaspi* Lin. Sp. Pl. 910; found in France, Italy, and Spain, said to be detersive, aperitive, &c. but not at present used.

IO'NTHOS, (from *ion, the violet*). The Grecian appellation of those hard pimples in the face of a violet colour, which the Latins call by the name of *varus*, and *gutta rosacea*.

IOSA'CCHARUM, (from *ion, the violet*, and *saccharum, sugar*). SUGAR OF VIOLETS.

IOTACI'SMUS, (from *ιωτα*, the Greek letter *ι*). A defect in the tongue or organs of speech, which renders a person incapable of pronouncing his letters; or where the letter *i* is frequently and rapidly pronounced.

IO'UI. A restorative alimentary liquid prepared in Japan. It is made from the gravy of half roasted beef, but the other ingredients kept a secret.

IPECACUA'NHA, (Indian). *Brasiliensis radix, herba paris Brasiliana, polycocos, poaio do matto, caaapir; cipo; Indiana radix, periclymenum parvum*, IPECACUAN, or BRASILIAN ROOT. Many of these names have been assigned, from the opinion of naturalists, respecting the plant which produces this valuable remedy. It has been supposed to be the root of a viola, of a periclymenum, and of a species of psycotria. Indeed the evidences in favour of the latter are so strong, that we have much reason to believe that its roots are at least emetic, though not the real ipecacuanha. In fact, if we can trust Decandolle's description in the Bulletin des Sciences, the *white* ipecacuanha is derived from the viola, and this medicine is afforded by three species, the *v. calceolaria* of the *species plantarum*, a native of Guiana and the American islands; the *v. parviflora* of the *supplementum plantarum*; and the *v. ipecacuanha* of the *mantissa*. These roots may be found among those of the true ipecacuanha, but they are a fraudulent addition, as, though emetic, they do not possess the valuable properties of the true or grey kind. They are distinguished by the size of the woody part, which, in the true kind, is a fibre only; in the white it is as thick as the bark. The roots of different species of aselepias, dorstenia, and other genera, are sold as ipacacuanha, but with the distinction of "*false*."

In 1780 Mutis sent to the younger Linnæus, from South America, a full description of a plant, which he was assured was the true ipecacuanha; an account confirmed by a medical resident, who has been stigmatised with the name of an *empiric*. This naturalist referred it to the genus *psycotria* with the trivial name of *emetica*, doubting, however, whether it was the same with the ipecacuanha of Piso and Margraave, though the figures of these authors greatly resembled it. Dr. Woodville, in 1793, published an engraving of a specimen preserved in spirits, sent from the Brasils. The root was entire, and ascertained it to be the real plant; but the flower was wanting, so that the truth of Mutis's narrative and the credit of his informant could neither be established nor invalidated. In this state of uncertainty, we received in 1802 the description of the true plant from Felix Avellar Brotero, in the sixth volume of the Linnæan Transactions, p. 137. The author is professor of botany in Coimbra, and professes to have drawn his description from numerous dried specimens, corrected by the observations of his friend Bernard Gomes, a diligent medical botanist, who has often examined the living plants. They grow in Parnambuqui, Bahia, &c. and other provinces of Brazil, flower in November, December, and January, and again in February and March. The berries ripen in May.

It is scarcely the object of this work to transcribe the minute description of Brotero, which would be uninteresting to the medical reader; and we shall prefer making a few remarks on the minute difference between the *callicocca ipecacuanha*, the title he gives it, and the *psycotia emetica* of the younger Linnæus. This genus *callicoccæ* belongs to the *rubiaceæ* of Jussieu, and the species are all perennial.

The description of Brotero greatly resembles that of Mutis. In the latter, the bracteæ which separate the florets are said to be so small as to be scarcely discernible; but Brotero describes the bracteæ, involucri and flosculorum longitudine; but we have long since learnt that plus vel minus non mutat speciem. The stipulæ, according to Mutis, are awl-shaped, and horizontal; in Brotero appressæ sessiles sublineares partito-fimbriatæ, lacinulis subulatis. In Mutis the flowers are said to be axillary; in Brotero terminal. In Brotero's figure, however, there is but a single flower which, though placed terminally, is apparently axillary. The stipulæ in Sir Joseph Banks' plant seem to resemble those described by Mutis.

There appears, if these circumstances only are considered, little doubt but that the plant of the younger Linnæus is a variety of that described by Brotero; but in Mutis' plant there is no involucrum: in that of Brotero a large and strongly-marked one, so that, in reality, they must be two distinct species, though they certainly belong to the same genus. The involucrum is, indeed, a part of the essential character in Schreber, and in the cephaelis of Wildenow (the same genus); yet many of the species have naked heads. It has, in conformity with the same views, been proposed to add as a species of callicocca the *e. mutisii* (psycotria emetica Lin. Filii Supplementum Plant, p. 144). Head naked pedunced; few flowered; leaves lanceolate, smooth; stipules entire, awl-shaped; corolla five, cleft; chaffy bractes, very small.

It is brought from the Spanish West Indies. Four sorts are mentioned, viz. the grey, brown, white, and yellow. The grey is generally esteemed the most valuable, but

Neumann assures that the brown is equally good. The white sort is much weaker than the other, and the yellow does not act in the least as an emetic, being merely purgative. The Peruvian sort is called *bexuguillo*.

The roots of the grey sort are about the thickness of a small quill, very unequal and knotty; variously bent and contorted, full of wrinkles and deep circular fissures, which reach down to a small whitish woody fibre that runs in the middle of each piece: the cortical part is compact, brittle, looks smooth, and resinous on breaking. They have little or no smell, the taste is bitterish and subacrid, covering the tongue as it were with a kind of mucilage. The roots of the brown kind are small, somewhat more wrinkled, of a dark colour without, and white within. The white is woody, has no wrinkles, and, to the taste, no perceptible bitterness. The ash-coloured or grey ipecacuanha is generally preferred: the brown has been observed even in a small dose to produce violent effects; but the white has scarce any effect, whatever the dose may be. The root contains a gummy and resinous matter, though the gum is in the greatest proportion, and the most active part: the bark is more powerful than the wood; and the whole root manifests an antiseptic and astringent power. The emetic quality is said by Dr. Irvine to be counteracted by the acetous acid; for thirty grains, taken in two ounces of vinegar, produced only some loose stools. For this reason it has probably become fashionable to add the ammonia, which is supposed to increase the emetic power of the ipecacuanha.

This medicine is the most certain, the mildest, and safest emetic with which we are acquainted; for it readily passes off by stool, if it does not operate by vomit; but perhaps less certainly by urine or perspiration than the antimonials.

The larger compact roots that have a resinous appearance are preferred. The slender, blackish brown ones, full of fibres, are the worst. Mr. Henry, of Paris, has lately ascertained, by experiment, the fact first mentioned by Lassone, that the ligneous part is equally powerful with the cortical.

The roots of the caapia, commonly sold under the name of white ipecacuanha, are yellowish, or of a yellowish white colour. The apocynum is another imposition which we have mentioned; but the colour of its medullary fibre is of a deep reddish yellow colour, whereas that of the ipecacuanha is whitish, or of a pale grey.

Helvetius first brought this root into repute as an antidysenteric, though it was brought to Europe about the middle of the seventeenth century. Since his time it has been used in diarrhœa, menorrhagia, leucorrhœa, in long continued obstructions, and in spasmodic asthma. In violent paroxysms of the latter it has procured relief; and where habitual, from three to five grains may be given every morning, or from five to ten every other morning, and continued for four or six weeks. Small doses of one to two grains have been of use in catarrhal, some consumptive cases, and various states of fever. It has also been employed in the cure of agues as an emetic, given at the time of accession, or at the close of the cold fit. Very small doses, as one-third or one half of a grain, have been recommended every four hours, in menorrhagia, cough, pleurisy, and hæmoptoe; and in larger doses, to counteract the effects of opium. Of all its preparations, the powder is the best; six or eight grains of which will produce two or three discharges by vomit; and, in diarrhœas and dysenteries, after this operation, it excites perspiration, if the patient is kept warm. It chiefly operates as an emetic in proper doses; in smaller doses, as a nauseating and aperient medicine, upon which its antidysenteric power seems to depend. It is said to succeed equally well in small as in large doses; but the quality of the root we now obtain is not the same, or it has lost this power. It is so certain an emetic, that we cannot venture to give it where vomiting would be injurious. Geoffroy supposed that the resinous part only was emetic, and that the virtue of the ipecacuanha in dysenteries depended on its gum, which acted as a demulcent; but this is highly improbable, as other emetics or similar medicines in nauseating doses are perhaps equally effectual. Dr. Irvine found the gum more actively emetic than the resin, and the bark than the wood, though the latter possessed this power in an inconsiderable degree. Water distilled from it was not emetic, but the remaining decoction violently so, though its peculiar properties were destroyed by long boiling. See Cullen's Materia Medica.

The best menstruum for extracting the whole virtue of the root is one part pure spirit, and two or three of water; of wines the Canary or mountain best extracts its virtue; but the London College directs the following V'INUM IPECACUA'NHÆ. Take of the roots of ipecacuanha in powder, two ounces; of Spanish white wine, two pints; digest ten days, and strain. Ph. Lond. 1788. Its dose, as an emetic, is from ʒij. to ℥i. ss.—as a diaphoretic, from twenty to forty drops, adding about ten drops of tinctura opii.

Dr. Alston thinks that the virtue of this root resides not in its oil, gum, or resin, but in its peculiar spirit. Later chemists, however, particularly Mr. Lassone and Mr. Henry of Paris, have shewn that ipecacuanha contains a free acid of a vegetable nature recomposed by fire, and different salts with a calcareous basis. It also contains a small proportion of an elastic gum. The most active part is the resin, though the extractive is by no means without power, in about a double dose. If three grains of powdered ipecacuanha are added to fifteen grains of jalap, it more certainly and efficaciously purges; but it also often deceives by producing vomiting.

To deceive children ℈i. or ʒss. of powdered ipecacuanha may be infused in half a pint of boiling water, adding a little milk and sugar. A tea-cupful may be given every ten or fifteen minutes, till it operates; and it will then need nothing to work it off. It might perhaps be better infused with weak coffee, or to this a tea-spoonful of ipecacuanha wine may be added. The college also orders the following P'ULVIS IPECACUA'NHÆ COMPO'SITUS. *Dover's powder.* Take of ipecacuanha, hard purified opium, of each, rubbed into powder, one dram; of vitriolated kali in powder, an ounce. Pharm. Lond. 1788. The dose is from ten to thirty grains; the former dose containing a grain of opium. This is very nearly the same as the powder of Dr. Dover, and is considered as one of the most certain sudorifics in rheumatism, gout, and other diseases where sweating is necessary.

See Lewis's Materia Medica; London Medical Observations and Inquiries, vol. i.; Neuman's Chemical Works; Woodville's Medical Botany.

IPHION. See ASPHODELUS LUTEUS.

IQUETA'IA. See SCROFULARIA AQUATICA.

I'RA, (from the Hebrew term *chirah*). ANGER quickens the pulse, and hurries respiration, and for a time increases the tone of the whole system. The stomach and bowels are greatly affected; and a stricture on the gall-ducts is sometimes produced, so that a jaundice is the consequence; though more frequently the gall is determined more copiously to the duodenum, producing disagreeable complaints in the bowels. Anger also produces hæmorrhages from the nose, the lungs, the vessels of the brain occasioning apoplexy, and the hæmorrhoidal vessels, particularly in those who are disposed to these evacuations.

During the fit of anger, or its immediate effects, it is said that vomits and purges should be avoided, though few take them in a passion; nor can we see what injury would be produced if they were given.

Anger, called justly "a short madness," will gradually cool; and should any bad effects be left, they must be treated according to their nature.

IRACUNDUS MUSCULUS, (from *ira, anger*). See ABDUCTOR OCULI.

IRINGUS, ERYNGO. See ERYNGIUM.

I'RIS, (from *ειρω, to show*). A RAINBOW. The forepart of the choroides of the eye, named from the variety of its colours. It lies floating and loose; is convex on the anterior, and concave on the posterior part; the perforation in its middle forms the pupil. The iris, by contracting or dilating, excludes or admits of light in such proportions as the variety of circumstances may require. Two orders of muscular fibres are found between the laminæ of the iris; one circular, the other radiated, which produce these actions. See UVEA, CHOROIDES, and CIRCULUS ARTERIOSUS.

The operation of cutting the iris is required when a cataract adheres to it; and when, from the contraction of its muscular fibres, the pupil is closed up, a disease called *synizesis*, or *caligo pupillæ*, is produced. Mr. Sharp, in his Operations, chap. xxix. directs the operator to proceed as follows: Place the patient as for couching; open and fix the eye with the speculum oculi; then introduce the knife in the same part of the conjunctiva that is wounded in couching; insinuate it with its blade held horizontally, and the back of it towards you, between the ligamentum ciliare and circumference of the iris, into the anterior chamber of the eye; and, after it is advanced to the further side, make your incision quite through the membrane; and, if the operation succeeds, it will, upon wounding, fly open, and appear a large orifice, though not so wide as it becomes afterwards. Mr. Sharp further observes, that when the pupil is contracted from a paralytic disorder, this operation cannot be encouraged.

I'RIS. A species of rash, included by Dr. Willan in his third order of exanthemata; but we have not yet received his description and explanation. We may find an opportunity of resuming the subject, if the number appears in time. See CUTANEI MORBI.

I'RIS, (from the resemblance of its flower to the rainbow). It is a perennial plant, with long, narrow, sword-like leaves standing edgewise to the stalk, and large naked flowers divided deeply into six segments, of which alternately one is erect, and another arched downward, with three smaller productions in the middle, inclosing the stamina and pistil: the roots are tuberous, irregular, and full of joints. (See ERYSIMUM). It is a name likewise of the hedge-mustard, *hermodactylus*; a kind of ginger; a species of *xyphium*, and of a *pastil*, consisting of alum, saffron, and myrrh.

I'RIS FLORENTINA. FLORENTINE ORRIS; *iris Illyrica*, and WHITE FLOWER-DE-LUCE, *iris florentina* Lin. Sp. Pl. 55. It is supposed to be only a variety of the common iris; but its roots are brought from Italy, as superior to our own. They are in oblong, flattish pieces, freed from the fibres, and brownish externally, but with brownish specks internally, and easily reduced to a farinaceous powder.

The root, in its recent state, is nauseous, acrid, and purgative, but loses these qualities by drying. The dry root is unctuous, bitterish, and pungent; the taste not strong, but durable; with a light, agreeable smell, which resembles violets, or rather raspberries; and communicates a similar flavour to spirits and to wines. As a medicine, the fresh root is a powerful cathartic; and its juice hath been employed in the dose of ℥ i. in dropsies: when dry it is a demulcent, and an expectorant, attenuating viscid phlegm, and promoting its discharge; but Dr. Cullen considers it as insignificant in this state. When cut in the form of peas it is used for promoting the discharge in issues.

In distillation it yields all its flavour to water; its bitter remaining in the extract. Rectified spirit brings over a part, and the extract is bitter and pungent in the mouth. See Lewis's Materia Medica; Neumann's Chemical Works.

I'RIS TUBEBO'SA, vel BULBOSA. See HERMODACTYLUS FOLIO QUADRANGULO, &c.

I'RIS FŒ'TIDA, *spatula fœtida, xyris, gladiolus fœtidus*, SPRUGE-WORT, STINKING GLADDON, or GLADWYN; *iris fœtidissima* Lin. Sp. Pl. 57; a wild species of iris, distinguished by a strong smell, found in hedges, &c.: its root is thick, and spreading in the earth, with many fibres, from which spring numerous leaves, longer, narrower, and sharper-pointed than the common iris. The root is diuretic, but seldom noticed.

I'RIS PALU'STRIS, *acorus adulterinus gladiolus luteus, pseudo-acorus, pseudo-iris, butomus, butomon*, YELLOW WATER-FLAG; *iris pseudacorus* Lin. Sp. Pl. 56. It is common by the sides of rivulets and marshes; the roots are reddish; several flowers, of a yellow colour, stand on a stalk; the middle ribs of the leaves are prominent.

The roots of this species, when fresh, are more acrid, and strongly cathartic, than the former. Eighty drops of the expressed juice, repeated every two hours, have purged, when jalap, gamboge, and mercurials have failed. The root is without smell, but has an acrid styptic taste; its juice in the nose and mouth creates a burning heat, accompanied with a copious discharge, and is consequently considered as an errhine and sialogogue: from its astringency, it has been used in diarrhœa; for making ink, and dyeing black. To serpiginous eruptions, and scrofulous tumours, the expressed juice is said to be an advantageous application. Bergius

observes, that, when fresh, it is a hydragogue; when dried, an astringent: but, like the other species, it is too variable in its strength to be received into general use.

I'RIS LATIFO'LIA TUBERO'SA. See ZINGIBER.

I'RIS VULGARIS; *iris hortensis nostras; iris Germanica* Lin. Sp. Pl. 55; *iris purpurea*, the COMMON PURPLE IRIS. Several blue or purple flowers stand in one stalk; their arched segments bearded with a yellowish matter. The plant is a native of the mountainous parts of Germany, common in our gardens, and flowers in June. The roots, when fresh, smell disagreeably, have an acrid nauseous taste, and are a strong irritating cathartic. The expressed juice has been given in a dropsy, from two to four drams diluted with water. By gently inspissating the juice, it is less active; but, if inspissated to dryness, it loses its purging quality. The dried root resembles in smell and taste the Florentine species.

IRRADIA'TIO, (from *irradio, to shine upon*). See ACTINOBOLYSMUS.

IRREGULA'RIS, (from *in*, and *regularis, regular*). A disease anomalous in its paroxysms.

IRRITABI'LITAS, (from *irrito, to provoke*). IRRITABILITY; the *vis insita* of Haller, *vis vitalis* of Gorter, *oscillation* of Boerhaave, *tonic power* of Stahl, and the *inherent power* of Cullen. It means that susceptibility to contraction which is peculiar to muscular fibres. We chiefly speak of it when morbidly increased, and in this state it may exist without or with inflammation. In the former state it is called spasm; in the latter, it is considered as a symptom only. Parts scarcely sensible or irritable in a natural state become highly so in consequence of inflammation.

Irritability, according to Haller, differs greatly from sensibility; for many irritable parts are not sensible; and organs which are both irritable and sensible have by no means these qualities in the same or any proportional degree. The intestines, he remarks, are less sensible than the stomach, though more irritable; and the heart is an organ peculiarly irritable, though by no means sensible. In the language of this physiologist, cellular is often considered as synonymous with nervous, and, both in the French and German authors, the cellular substance is spoken of as an important organ, often as an irritable one. We have already offered our opinion, that it is merely an insensible connecting medium; nor have we been ever able to ascertain that it has any other office, or any appropriate function. The cellular, or rather the membraneous parts, he considers as irritable, particularly the ligaments, the periosteum, the dura and pia mater, and the other membranes. The tendons possess, he thinks, no irritability; and, though the smaller arteries may possess this quality, he did not discover it in the aorta. The veins, the excretory ducts, the gall-bladder and its ducts, the urethra, and ureters, he found only irritable in an inconsiderable degree; but the glands, the mucous sinuses, the uterus, the genitals, the œsophagus, the stomach, the intestines, the muscles, and particularly the diaphragm, are highly irritable. This principle he supposes to be owing to the mucous matter interspersed among the muscular fibres, and to be wholly independent of volition. Other authors have attributed irritability to a particular set of nerves not under the influence of the mind. It is certain that it may be destroyed by drying; by coagulating the oily fluids of our system; by opium, belladonne, tobacco, &c.

The high reputation of Haller has induced us to enlarge on his opinions much farther than their real merit would require. His experiments were made on animals, often cold-blooded ones, and in a state of health. He seems never to have looked at the human body in a state of disease, as the source of his observations; but had he done so, he would have found numerous facts in the most decided contradiction to his experiments. No part, not the eye itself, is more sensible than, for instance, the membranes when inflamed; no part shows greater irritability, either from passions or the stimulus of a gall-stone, than the biliary ducts. The idea that irritability is owing to the mucus in the interstices of the muscular fibres is gratuitous and imaginary. Irritability is a property of life; but by what means does this mucus acquire life, and by what function, except this fancied one, does it shew any vital power? The existence of different sets of nerves giving irritability is wholly imaginary, without the slightest support from anatomy.

Irritability, as inseparable from life, must be connected with the nervous power; but the nerves, we know, are not irritable. It must then owe its existence to the nervous influence, or the muscular fibre must differ from the nervous by some peculiar organisation on which this property depends. There is little doubt of the muscular power depending on organisation; for the muscle differs only from the tendon in structure. The fibres pass on, and may be traced from one to the other. Organs, at first in a great degree muscular, become, by age, more tendinous; so that, in the latter, the fibres are apparently more compacted, in fact, of an organisation essentially different. Is then the muscle wholly nervous, or an organ only excited to action by nerves? Dr. Cullen thinks it wholly nervous, and calls muscles *the moving extremities*, in opposition to the *sentient extremities* of nerves; and the weight of evidence is strongly in favour of this opinion. We have said that we know of animal matter but in two forms, fibrous and cellular substance, more or less condensed. The fibrous seems exclusively nervous, and the nerves are closely compacted as in membranes, or more loosely organised in muscles. It is equally difficult to understand the construction of muscles, whether we supposed them nervous, or animal matter of any other kind.

Though we cannot ascertain the structure of the organs possessing irritability, we may shortly mention the laws by which it is regulated: and we shall find them so analogous to those of sensibility, that there will be little difficulty in recognising the source to be similar. Irritability, like sensibility, is exhausted by exercise, and recruited by sleep; but, unlike sensibility, its exertions are alternated by relaxation. It is probable that the nerves in the muscular organs are in a higher state of excitement than in the sentient; for muscular organs are constantly, in a certain degree, exerted in order to counteract the antagonising muscles, but unless the action is occasionally remitted, it is spontaneously relaxed. This constant state of tension is called the *tonic power*, and is in proportion to the general excitement. It presupposes irritability, in consequence of organisation, which has been called the *in-*

herent power, and is probably the same with the *nervous power* of physiologists: it must be so, if muscles are only the "moving extremities of nerves." Irritability, as a morbid affection, however, implies a very different state, and has been styled *mobility*, a susceptibility of action from slight and otherwise insufficient stimuli; and this susceptibility, connected generally with debility, is more readily alternated with relaxation producing convulsions.

Irritability, as we have just remarked, is exhausted by exercise, and it may be suddenly destroyed, so as to kill; for a flash of lightning will at once extinguish it in every organ. It is, however, recruited by rest, and, as modern physiologists, with some reason, have supposed, accumulated so as to occasion increased action. Many of the facts adduced may, however, be resolved into the effects of custom; for, when given actions are excited by a weak stimulus, a common power becomes, in comparison, inordinate. Thus the iris accustomed to contract in the gloom of a dungeon, feels the common daylight as painful as the glare of a noon-day sun would be to a person who has never been confined. This leads us to remark, that the irritability of each organ has specific stimulus, by which only it is excited. Ipecacuanha does not irritate the eye; and the acrid urine or bile excite only pleasing and healthy sensations in their appropriate organs; but in the brain produce phrenitis, or in the stomach vomiting, with faintness, cold sweats, &c. In general, muscles which act more slowly and regularly, preserve their irritability longer than those which act with violence; for in these the irritability is apparently supplied as fast as it is expended. A certain degree of action, we have remarked, must be kept up in all muscles, to preserve their irritability, or rather the tonic power. Beyond, irritability is exhausted; below the due point, it is lost; and this point differs in almost all the different organs. Each has its appropriate action, which it can bear without injury, or even with advantage; and the irritability of each is exhausted more rapidly, in proportion to the continued action which it exerts. The voluntary muscles can bear a very considerable increase of action, because it is temporary: the involuntary ones, whose action must continue, soon lose their irritability after a short increase. See NERVI; MUSCULI; IRRITATIO, and CEREBRUM.

Haller on Sensibility and Irritability; Whytt's Answer to Haller; the Difficulties in the Modern System of Physic, with Regard to the Sensibility and Irritability of the Parts of the Human Body, by De Haen; Kirkland on the Brain and Nerves; on the Sympathy of the Nerves, and of different Kinds of Irritability; Cullen's Introduction to the Materia Medica.

IRRITA'TIO, (ab *irritare*). IRRITATION is a term to which different meanings have been affixed, and this has occasioned some confusion among pathologists. The most obvious idea of irritation is the action of a mechanical or a chemical acrid, as a thorn under the skin, or the effluvium of ammonia in the nose. Similar irritation is the effect of poison in the habit, as of cantharides; of altered secretion, as in gonorrhœa; of unnatural contents in the stomach, as in heartburn. Irritation, however, is discovered by its effects, when not obvious to the sense, as in cases of schirri, worms, ossifications, or extravasated blood; and, independent of these, a peculiar state of the excitement of the nervous power occasions the most common impressions to become the source of pain and uneasiness. This state of excitement is sometimes owing to inflammation, which acts in a manner we shall afterwards explain (see NERVUS and TONUS); sometimes to latent sources of irritation in the brain, sometimes perhaps to a change in the state of the nervous power itself. We can no otherwise explain the effects of an east wind on some hypochondriacs, or a particular state of electricity of the air on persons peculiarly susceptible of its effects.

We have already had occasion to remark, that privations sometimes occasion what are called symptoms of irritation. Thus hunger produces restlessness and anxiety; the want of the degree of tension, either from external pressure or internal fulness, from the sudden emptying of any cavity, will occasion uneasiness, which has been styled a symptom of irritation. Internal feelings of this kind are sometimes opposed to pain; and the peculiar sinking in atonic inflammations has been styled also a symptom of irritation, not, perhaps, with perfect propriety, but with sufficient distinctness when explained.

The effects of irritation are generally increased action; and, in the animal system, privations are, by an unaccountable solecism, considered as positive causes of increased action. This loose, illogical language arises from a want of distinction between increased and irregular action; for in spasms produced by causes destructive of life, in convulsions closing the last scene of mortal existence, it would be absurd to say that action, which always implies energy, is increased. We have already shown that in all these instances the power is diminished, and the action, in consequence, irregular. See CONVULSIONS and INIRRITANTIA.

IS, (ἰς, *a fibre*): its plural is ἰνες. Hippocrates, and other writers, have used this term for both a fibre and a nerve.

I'SAROS. See ARUM.

I'SATIS, (from ἰσαζω, *to make even*; from its power in reducing tumours). *Sativa latifolia; tinctoria.* WOAD. See GLASTUM.

I'SATIS I'NDICA. See INDICUM.

ISATO'DES, (from *isatis*, and εἰδος, *likeness*). Of the colour of woad.

I'SCA, (ἰσχα). A fungous excrescence of the oak, or of the hazel. The ancients used it as the moxa. See MOXA.

ISCHÆ'MON, (from ἰσχω, *to restrain*, and αἱμα, *blood*). A name for any medicine which restrains or stops bleeding.

ISCHÆ'MON SATI'VUM. MANNA GRASS. See GRAMEN.

I'SCHIAS, (from ἰσχιον, *the hip*). A name of a rheumatic affection of the hip joint, called the *sciatica* or *ischiadicus morbus*, and of two crural veins, one of which is called the greater, the other the less. See CRURALIS VENA.

ISCHIA'DICUS DO'LOR, (from the same). See ARTHRITIS.

ISCHIA'DICUS MO'RBUS, (from the same); also called *ischias, sciatica, coxæ dolores*. Aretæus ranks this disorder as a species of gout, which comes, he observes, on the hind part of the thigh, the ham, or the tibia; at other times attacking the acetabulum of the os femoris, and then the buttock and loins, seeming to be any thing

rather than a sciatica." Dr. Cullen ranks it as a synonym with rheumatismus.

The sciatica is sometimes seated in the tendinous expansion which covers the muscles of the thigh, occasionally, it is supposed, in the coat of the sciatic nerve. In the last case the pain is more acute and violent, attended with a numbness; a symptom easily accounted for. Its most common seat, however, is in the muscles, or in the capsular ligament; and it is then either rheumatic or gouty.

The two former species cannot be distinguished; nor do they admit of any peculiar treatment. In general, the disease must be treated as a rheumatism of the chronic kind, to which we refer. (See RHEUMATISMUS.) There are, however, some modes of relief supposed to be peculiarly useful in sciatica, which we must mention in this place. That recommended by Fothergill, consists in giving a grain of calomel every night, washed down with a draught containing twenty-five drops of tincture of opium, and thirty of antimonial wine. If not relieved after ten doses, the quantity of calomel is to be increased to two grains every alternate night. Other authors have recommended the ethereal spirit of turpentine, which is a very efficacious medicine, if united with honey, by gently melting over a slow fire; and in this way the dose may be increased to thirty or forty drops. We have found the combination of mercury and antimony, in the form of Plummer's pill, with the Lisbon diet drink, frequently succeed when every other medicine has failed; but these remedies we shall again mention when speaking of rheumatism.

The *ischias nervosa* of Cotunnio is supposed by this author to be owing to a fluid distending the sheaths of the nerves, and irritating the nervous fibres. The peculiar treatment suggested by this opinion is the application of a blister immediately under the knee joint, on the inside of the leg, as well as to the hip; as near the knee the blister affects more particularly the nerve in the neighbourhood of that part. There is little doubt of the existence of a sciatica not attended with any striking inflammatory symptoms; but of the peculiar cause assigned by Cotunnio we can find little support from observation or dissection. See Culleni Nosologia Methodica.

Richter speaks of some cases of the ischias nervosa being successfully treated by blisters often repeated, and sudorifics. In one instance the blisters were applied on different parts where any pains were felt in succession: the sudorifics were first crude antimony, the stipites dulcamaræ in pills, and the warm bath for six days; on the seventh, a powder composed of camphor, ipecacuanha, and opium, was given, preceded by a tepid bath; the bath was continued till the foot became œdematous, and then left off; the other remedies were still pursued, which, in about six weeks, completed the cure. The symptoms were, pains in his arms, shoulders, and back, which settled about the hip-joint, continued fixed, and increasing till the patient could not walk; the whole limb became shorter; the pains extended from the hip-joint down to the foot; he felt as if ants were running about in the foot; and was totally unable to move the limb to either side, which, in other respects, was warm, and properly nourished. A lady and a young man were cured by the application of burning cones and blisters; on which he remarks, that from this method nothing is to be expected unless in such kinds of lameness as proceed from the metastasis of any stimulating matter, where the lameness is accompanied with pains in the suffering limb, and chiefly the hip-joint; and this morbific matter he thinks rheumatic or gouty; though, in some cases, he had reason to believe it was scrofulous. See his Medical and Surgical Observations, p. 169.

These cases, however, by no means support Cotunnio's idea of the cause. They are instances only of chronic rheumatism, though pains in the hip-joint are, as he remarks, sometimes scrofulous, and occasionally, we think, of a cancerous nature.

I'SCHIAS EX ABSCE'SSU, (from ισχιον, *the hip*). See ARTHROPUOSIS.

I'SCHIAS SPARGANO'SI. See LYMPHÆDUCTUS.

ISCHIATOCE'LE, (from ισχιατος, the genitive of ισχιας, and κηλη, *rupture*). Intestinal rupture through the sacro-sciatic ligaments.

ISCHIOCE'LE. A rupture between the os sacrum and the tuberosity of the os ischium.

I'SCHIO-COCCYGÆ'US. See COCCYGÆUS ANTERIOR.

I'SCHION. The ligament which retains the head of the thigh-bone in the acetabulum coxendicis.

I'SCHIUM, OS, (because it lies near ισχις, *the loin*). *coxendix, cochone*; the HIP-BONE. The extent of this bone may be marked by a horizontal line drawn through near the middle of the acetabulum coxendicis; for the body of this bone forms the inferior portion of the acetabulum. The great tuberosity on which we sit, as it advances forwards, becomes smaller, and gives origin to the corpora cavernosa, and the erectores penis or clitoridis; then the bone mounts upwards with a considerable curve, and is stretched out into its small leg. It forms the lower part of the pelvis. The tuberosity is large and irregular, covered apparently with a cartilage, which is in reality the tendinous fibres of the muscles inserted into it. Between the spine and the tuberosity is a cavity on which the obturator muscle plays, as on a pulley, defended by cartilage. The ramus of this bone, which passes forwards and upwards, makes, with the ramus of the os pubis, the foramen magnum ischii.

ISCHNOPHO'NIA, (from ισχνος, *slender*, and φωνη, *the voice*). A SHRILLNESS OF THE VOICE; but more frequently a hesitation of speech, or a STAMMERING; *psellismus hesitans*.

ISCHNO'TIS, (from ισχνος, *slender*). LEANNESS.

ISCHURE'TICA, (from ισχυρια, *a suppression of urine*). Medicines that remove a suppression of urine.

ISCHU'RIA, (from ισχω, *to retain*, and ουρον, *urine*). An ISCHURY, A STOPPAGE OF SUPPRESSION OF URINE. La Motte distinguishes between a retention and a suppression of urine. In the former, styled *strangury*, the patient hath frequent calls to make water; but voiding it, if at all, in very small quantities, and with difficulty. In a suppression there is seldom any inclination to discharge any urine; but, if any, the discharge is sudden, and almost involuntary.

In the true ischuria the bladder is full; in the spurious it is empty, for nothing descends from the kidneys.

Dr. Cullen places this disease in the class *locales*, and order *epischeses*, defining it an absolute suppression of urine. The species are,

1. ISCHU'RIA RENA'LIS, where, some disease of the kidneys having preceded, pain and an uneasy sensation of weight are felt in the region of the kidneys, without any swelling of the hypogastric region, or stimulus to make water.

2. ISCHU'RIA URETE'RICA, where to the same symptoms is added a sense of pain and uneasiness in some part of the course of the ureters.

3. ISCHU'RIA VESICA'LIS, when there is a tumour in the hypogastric region, pain at the neck of the bladder, and a frequent inclination to discharge urine.

4. ISCHU'RIA URETHRA'LIS, when there is swelling in the hypogastric region, a frequent desire to discharge urine, and a sense of obstruction in some part of the urethra.

The varieties of each species are added, and these will sufficiently explain the causes.

Varieties of the ischuria renalis are, *ischuria nephritica*, from inflammation of the kidneys; *nephrolitica*, from a stone; *nephroplethorica*, plethora; *lunatica, periodica*, periodical; *nephrospastica*, from spasms; *nephrelmintica*, worms; *nephrothromboides*, coagulated blood; *nephropyica*, purulence of the kidneys; *nephrophlegmatica*, mucus; *nephroplegica*, paralytic affection; *suppleta*, from some other evacuation supplied.

Varieties of the ischuria ureterica are, *ischuria ureterica*, from inflammation of the ureters; *ureterolithica*, from a stone; *ureterothromboides*, grumous blood; *ureterophlegmatica*, from mucus; *ureteropyica*, from pus; *ureterostomatica*, the closing of the inferior orifice of the ureters.

Varieties of the ischuria vesicalis are, *ischuria atretarum*, from the menstrua retained in the vagina, in consequence of an imperforated hymen; *cystica* from inflammation of the bladder; *cystospastica*, a spasm of its sphincter; *cystolithica*, a stone; *cystoplegica*, paralytic affection; *cystopyica*, purulence; *cystothromboides*, grumous blood; *cystophlegmatica*, mucus; *cystoproctica*, from the rectum swelling, with scybala, calculus, flatus, inflammation, pus, or hæmorrhoids; *ectopocystica*, from a hernia of the bladder; *hysterocystica*, from an inverted or retroverted uterus; *paradoxa morgagni epistolæ*; *polyurica*, from the bladder distended with urine a long time retained.

Varieties of the ischuria urethralis are, *ischuria aspadialis*, from closing of the urethra; *caruncalosa*, from caruncles of the urethra; *cryptopica*, a retraction of the penis within the abdomen; *hydrocelodes*, from a rupture of the urethra opening into the scrotum; *peridesmica*, a stricture of the urethra from a ligature; *perinæalis*, a tumour of the perinæum; *phymosica*, a phymosi; *urethrelmintica*, worms; *urethritica*, inflammation of the urethra; *urethrohymenodes*, a membrane impacted in the urethra; *urethrolithica*, a calculus impacted in the urethra; *urethrophlegmatica*, mucus stuffing up the urethra; *urethromboides*, grumous blood; *urethropyica*, pus.

To these idiopathic ischurias may be added some symptomatic ones, particularly those from general stupor, in consequence of apoplexy or narcotic poisons.

When the suppressed urine is lodged in the bladder, a pain and swelling is observed about the pubes. Relaxation, as a cause, is distinguished from stricture, by the little pain attending the disorder, by the introduction of the catheter, and by the fulness above the pubes. If inflammation in the kidneys is the cause, some pain and heat may be observed in that region, though in general the kidneys are insensible. If a stone in the kidneys occasions the complaint, a vomiting is an attendant symptom; if in the bladder, a pain is felt there, recurring by paroxysms with great violence, as well as along the urethra; mucus, or pus, is excreted with pale urine; tenesmus is troublesome, and generally the stone may be felt if the catheter is introduced. If, from inflammation in the neck of the bladder, there is pain in the perinæum, the slightest discharge of urine gives an intolerable burning sensation; and if a finger is introduced into the anus, and turned towards the bladder, a tumour will be sometimes obvious.

If this disorder is the true ischuria, and violent, tenesmus, coldness of the extremities, vomiting, and a febrile pulse, constantly attend; but if of the spurious kind there is no tension, but rather a sense of emptiness about the pubes. If it continue above seven days, or if from a wound of the spine, or luxation of its vertebræ, it is highly dangerous. If the smell of urine proceeds from the patient's mouth or nostrils, there is little hope. A hiccough is also an unfavourable symptom; but when no inflammation attends, the urine may be long suppressed, and the discharge again restored should there be no unconquerable obstacle.

The cure must be regulated by the circumstances and the cause of the complaint. If we can ascertain, from the preceding symptoms, that there is no water in either the bladder or ureters, and that the ischuria is truly renal, we must inquire whether it be owing to a palsy of the vessels or to a stone in the pelvis of the kidney. To determine this question, it is requisite to know whether any gravelly concretions have been discharged, or whether vomiting has attended. These will show that the disease is seated in the gland; and though each case occurs in the old and debilitated constitutions, we think the general torpor, the constitutional decay conspicuous in every function, will point out when it arises from palsy of the secretory vessels. In this case we have little room for hope, since this palsy is only one symptom of the general failure of the constitution. Our best chance of success in that case, arises from blisters to the loins, the warmest general stimulants, with the most stimulating diuretics, as the etherial spirit of turpentine. A temporary relief in this way we have obtained; and we have found the efficacy of this last medicine on the diseased part by its producing a discharge of blood, when it has failed in bringing back the secretion of urine. When it has succeeded most effectually, it has procured the discharge only for a short time, and it has then failed entirely. It has been supposed that blisters act from the absorption of the cantharides; but we have never found this medicine efficacious, except when in the bladder. It has never in our hands proved diuretic. In some instances, the secretion of urine has been suppressed in the young and strong without inflammation, or any obvious cause. A case of this kind is recorded by an American physician; and we have met with an instance where no urine was apparently discharged for six weeks; nor was there any vicarious evacuation, except a profuse sweat for a day or two; or the slightest suspicion of imposture, as the patient was in an hospital, and constantly watched. Medicine seemed to give no relief, and the discharge at last gradually returned.

When a stone in the pelvis of the kidney is the cause, we can gain nothing by the stimulating diuretics, except impacting the obstruction more firmly. Our best chance, though a slight one, is by anodynes and relaxants, abstaining as much as possible from fluids.

Obstruction in the ureters is felt, as we have said, from fulness in the hypogastric region, without any tension in the bladder. Internal sensations are, however, obscure; nor can we see how this fulness can be distinguished from flatus or an accumulation of fæces. A stone passing through the ureters generally occasions some numbness in either leg, and a retraction of one testicle in men, as it passes over the nerves which come down with the spermatic vessels. We know not that a fluid will produce any similar effect; but, unless by this means, it is not easy to perceive how a distension of the ureters can be ascertained. Were it possible to decide, it would not, we fear, greatly assist the practice. To increase the quantity of urine would be to add to the disease. If the suppression arises from a stone in the ureters, the pain will discover the cause, and point out the most effectual remedy, viz. opium; but should there be no pain, sedatives will more probably relieve than any violently forcing means. It is seldom, however, that a total suppression arises from obstructions in the ureters, since it can scarcely take place equally in both; and should one only be obstructed, the kidney on that side would soon lose its power, and its office be supplied on that side where the passage is free.

The most frequent causes of ischuria occur in the bladder. Many of these are mechanical, as when a calculus, impacted in the neck, obstructs the discharge; when an inverted or a retroverted uterus drag it backward and raise the orifice; when the head of a child, in its passage, rests on the cervix; when hardened fæces, or hæmorrhoidal tumours, press on the aperture. All these causes are readily discovered; and the treatment of each depending on them will be considered in other places.

Causes more immediately connected with medical practice are inflammation and spasm. The effects of inflammation we have seen to be suppression of urine, and this is relieved by anodyne clysters, fomentations, warm liniments, and even blisters to the perinæum. (See INFLAMMATIO VESICÆ.) Spasm is in part conquered by the same means; but opium may be more freely employed by the mouth and in clysters. Camphor in clysters promises to be an effectual remedy; but an alarming coma has, in two instances, followed. In this case, and in suppression of urine from many other causes, the action of laxatives will excite the usually corresponding action of the bladder; and walking on a cold wet floor, perhaps dashing water against the legs and thighs, would succeed in procuring a discharge of urine, as it has done the discharge of fæces. Atony of the bladder will sometimes occasion ischuria; but a more common effect is incontinence of urine. When it arises from atony, or a want of the contractile power, the catheter must be frequently employed to prevent the distension increasing the disease; warm stimulants applied to the perinæum and pubes, and stools procured by stimulating clysters. In this case cantharides must be avoided, for these act chiefly on the neck of the bladder; and the stricture of the sphincter in cases of ischuria from this cause is already greater than the power of the other fibres can overcome. Internally, bark, with aromatics, should be given; but every attempt either fails or procures only a temporary relief.

Cantharides, and sometimes acrid urine, by increasing this stricture of the sphincter, will produce the obstruction. In this case dilution, by frequent draughts of a warm liquid, warm fomentations to the pubes and perinæum, with opiates, will generally succeed.

When the urine is totally retained in the bladder, the introduction of the catheter immediately, whatever may be the cause, is too common; but whether this complaint arises from inflammation or from spasm, this conduct should carefully be avoided. Mr. Pott observes, that the best method of relieving this complaint, particularly when caused by spasm, is by evacuation and anodyne relaxation. The loss of blood, he says, is often necessary; but the quantity the strength and state of the patient will determine. The intestines must also be emptied by some gentle cathartic; but the most effectual relief will be from the warm bath, or semicupium, the application of bladders half filled with hot water to the pubes and perinæum; and above all other remedies, the injection of clysters, consisting of the decoct. pro enemate and tinct. opii; or if after a due bleeding, and, if necessary, emptying the bowels, a free dose of opium is given, and the patient is seated in a warm bath during twenty minutes or half an hour, repeating this use of the bath more or less as the case may seem to require, success will very rarely fail to attend; and if, by these means, the urine begins to drop through the urethra, although but a drop in a minute at the first, by persevering steadily and closely, the bladder will be effectually emptied. The great object, he observes, is to appease irritation and pain; and although some time be required in producing the effect, it will amply reward the practitioner's care and the patient's fatigue.

When great pain attends a retention or suppression of urine, the practitioner should first observe whether the kidneys have done their office, and whether in reality there is urine in the bladder; for, if full, it will be felt above the os pubis, and by pressure on it a pain will be excited in the neck of the bladder, or at the end of the penis. It sometimes happens that the bladder will contain a large quantity, without being greatly affected; at other times a very small quantity will produce great inconvenience; and inflammation, with symptoms of irritation, will ensue. Dr. George Fordyce observes, that much of the difficulty and pain from retained urine is from the more or less sudden filling of the bladder or distending it.

A bougie, or a catheter, is, however, often necessary, and the larger sizes of each are more easily introduced than the smaller. It is singular that the introduction of either should be sometimes attended with not only a shivering, but all the consequences of an intermittent paroxysm, viz. heat and sweating. In particular constitutions, this is constantly repeated whenever the operation is attempted; but pathologists have offered no explanation of the source of this singular appearance. The rules for introducing these instruments occur in the article CATHERISMUS, q. v.

If no other method will succeed, a puncture may be made into the bladder, as directed in the article PERINÆUM, *Puncture of the.*

Four methods have been proposed by different writers for drawing off the urine; 1. By an opening into the bladder above the os pubis. This plan, however, is confined to those cases in which the bladder is greatly distended. 2. By making a puncture through the perinæum into the bladder. 3. By puncturing the bladder laterally, as in the lateral operation for the stone. 4. By puncturing the posterior part of the bladder through the rectum.

Mr. Pott prefers the first method; but this, as we have said, is limited to particular circumstances. There is little ground of preference in either of the others; but we have found no very promising prospect of success from the trials hitherto made. Indeed, the operation is generally deferred till the patient's strength is exhausted, or until the parts from continued distension are hastening rapidly to mortification.

The ischuria urethralis arises from substances obstructing the canal; from inflammation, or from local complaints. The obstructions must be removed by bougies; and caruncles, or the more obstinate strictures, by caustics. Inflammation of the urethra is treated in the usual way; and ischuria, from a retraction of the penis, from inflammation, phymosis, or rupture, can be removed only by removing the causes.

See an instance of this disorder from a retroversion of the uterus, in the London Medical Observations and Inquiries, vol. iv. p. 388, &c. See Pott's Chirurgical Works; Lewis's Translations of Hoffman's Practice of Medicine; Bell's Surgery, vol. ii. p. 171; White's Surgery, p. 374; Memoirs of the Medical Society of London, p. 117.

ISLINGTON-WATERS. See Aquæ Minerales.

ISORA-MU'RI. *Helicteres isora* Lin. Sp. Pl. 1366. The name of a tree in Malabar. The juice of its root has been used in disorders of the breast.

ISOTHE'ON. See Dionysos.

ISO'TONI, (from ισος, *equal*, and τονος, *extension*). See Acmasticos.

I'SPIDA. See Alcedo.

I'STHMION, (from ισθμος, *a narrow neck of land between two seas*). The narrow passage between the mouth and gullet; sometimes the fauces.

ISTHMUS VIEUSSENII. The ridge which surrounds the remaining trace of the foramen ovale between the right and left auricles of the heart.

ITE'A. See Salix.

ITINERA'RIUM, (from *itinero, to travel*). A staff used in cutting for the stone. Hildanus.

IU'LUS, (plural Iuli), (from ιουλιζω, *to shoot out*). See Amentacei flores.

I'VA ARTHRI'TICA, (quasi *juva*, from *juvo, to assist*; as useful in expelling the gout). See Chamæpitys.

IVABE'BA. An ancient shrub, the root of which is a good deobstruent. See Raii Hist.

I'VA MOSCHA'TA. See Chamæpitys.

I'va peca'nga. See Sarsaparilla.

I'VRAY. See Lolium.

IXIA, (from ιξος, *glue*). *Varix*. A name of the *carlina*, or such of this tribe as yield a viscous juice. The ixia, or ixias, is represented as poisonous; but it is not clearly known to what plant these names belong. The species of ixia of modern naturalists are chiefly natives of the Cape, and cannot be the plants mentioned by the ancients. The carlina, one of the thistle tribe, was called *chamælcon*, from the very great variety of its leaves in different soils. (Pliny and Dioscorides.) Dioscorides calls the white variety ιξια, because a kind of glue (ιξος) is found at its root. Dios. lib. iii. cap. 10 and 11. Pliny, however, asserts, lib. xxii. cap. 18. that two plants are distinguished by this name, and that the ιξος is found in the axillæ; while Guillandinus contends that the ixia and chamæleon of Dioscorides, who, by the way, considers the former as poisonous, were different plants. Pliny informs us that the glue was used instead of mastich. Linnæus includes all the ancient species in his genera of *cnicus*, or *attractylis*. The dispute, however, which has filled many pages, is trifling; and the outlines which we have here given will appear, perhaps, sufficiently satisfactory.

I'xia, I'xine, I'xion, (from the same). See Carduus pinea.

I'XUS, (from the same). See Aparine.

J.

JABOTAPI'TA. A tree in Brasil, which bears yellow flowers, and has a grateful smell. *Octina jabotapita* Lin. Sp. Pl. 732. The fruit resembles our myrtle-berries; they are astringent, and yield, by expression, an insipid oil. See Raii Historia.

JABUTICA'BA. A fine tall tree which grows in Brasil, but not described by botanists. Its fruit resembles an apple, and is gratefully cooling.

JA'CA I'NDICA. The Indian jacque jaca, or JACK-TREE. Our predecessors have considered it as synonymous with MAKUM, q. v. but seemingly without any authority. The jack is the Indian bread-fruit tree, a species of artocarpus.

JACARA'NDA A'LBA, resembles the European palm-tree, and grows plentifully in Brasil. The Brasilians make a pottage of it, which they call *manipey;* and it is supposed to be a stomachic. See Raii Hist.

JACARECATI'NGA. See CALAMUS AROMATICUS.

JA'CE BRASILIE'NSIBUS, *melo Indicus, patheca,* and *citrullus.* Ray considers it to be a species of *anguria* or *citrullus,* and calls it *water-mellon;* this fruit is as large as a man's head, covered with a green rind, and its pulp is well tasted. See CITRULLUS.

JA'CEA. *Centaurea jacea* Lin. Sp. Pl. 1293. KNAPWEED or MATFELLON. The margins of the leaves are not serrated; the leaves and stalks are destitute of spines: it is common in pasture-grounds, and flowers in July and August. A slight astringency is attributed to it.

JA'CEA ORIENTA'LIS PA'TULA. See BEHEN ALBUM.

JA'CEA RAMOSI'SSIMA, STELLA'TA, RUPI'NA. See CALCITRAPA.

JA'CEA STELLA'TA, LUTE'A, &c. See CALCITRAPA OFFICINALIS.

JACOBÆ'A PRATE'NSIS; because it was gathered about the feast of St. James. See DORIA.

JACOBÆ'A PALU'STRIS. See VIRGA AUREA.

JADE STONE. See LAPIS NEPHRITICUS.

JA'GRA. See PALMA COCCIFERA.

JA'LAPA, (from *Chalapa,* or *Xalapa,* a city in New Spain). JALAP. *Gialappa, chalapa, xalapa, mecocahana nigra, convolvulus Americanus, bryonia Peruviana.* There is said to be a third species of jalap called *mutalista,* by the Indians *mathalistic.*

This plant is a native of Mexico, and found near the city of Xalapa, from whence its name is derived; but it has since been discovered near Vera Cruz and on the south of Florida. It was carried by Michaux to the botanic garden in South Carolina, where an old root was found, weighing, when fresh, above fifty pounds. (Annales du Musæum National, vol. ii.) It was at first referred by Linnæus to the genus *mirabilis,* with the trivial name of *jalapa;* but observing the size and shape of the root of the *m. longiflora,* he was inclined (Amœnitates Academicæ, vol. vii. p. 308) to think them the same; for no botanist had yet described the flowers of the officinal root. Bergius, on trial, found, however, that neither of these species was purgative, but that the root of the mirabilis dichotoma was so. To this plant then he referred the jalap; and, on his authority, the compilers of the Swedish Pharmacopœia did the same. Houston seems to have first shown that it was a convolvulus; and in this he was followed by Sir Hans Sloane, Miller, and at last Linnæus himself in the Mantissa of the System of Nature. It is, therefore, the *convolvulus jalapa* of the Mantissa and of Wildenow (vol. i. p. 860); but the only figure which shows the parts of fructification complete is in the second volume of the Annales of the National Museum. The author (Desfontaines), from its simple, sloping stigma, suspects that it rather belongs to the genus *ipomœa.*

The roots are brought from New Spain in transverse slices; they are solid, hard, weighty, of a blackish or dark brown colour on the cortical part, internally of a dark greyish colour, with several black circular striæ.

The hardest, darkest, and those pieces which have the most numerous resinous veins; those that break most compact, shining, and that burn readily at the flame of a candle; are preferred. Worms rarely touch the resinous part: so, when the resin is only wanted, the worm-eaten are not inferior.

Pieces of briony root are sometimes mixed with the jalap, but are easily distinguished by their paler colour and less compact texture, and by their not readily burning at the flame of a candle.

Jalap hath scarcely any smell, and little taste; but when swallowed it affects the throat with a slight pungency and heat, occasioning a spitting. In doses from ten grains to half a dram it is an effectual cathartic, but gripes and nauseates less than the generality of purging medicines in use. For children in general, and adults of a leucophlegmatic habit, it is peculiarly

proper, though it is not unsuitable to constitutions of a different kind. It is diuretic as well as purgative, and consequently preferred in dropsies. Lewis thinks that the gummy part promotes a flow of urine, while the resin purges; but, from experiments made with this view, we did not find the distinction correct.

If well triturated with crystals of tartar before exhibition, it will operate, it is said, in smaller doses than when taken by itself, and without griping. Rubbed with hard sugar, it becomes a safe medicine for children; joined with calomel, in large doses, it is rendered one of the most powerful purgatives, either as a hydrogogue or anthelmintic; and, from its general efficacy in dropsies, was called *panacea hydropicorum*. The dose of the simple powder is from ℈i. to ℈ij. The compound powder may be double the quantity. It generally requires no corrector, but a little spice, or a few drops of some warm oil.

RE'SINA JALA'PII. *Resin of jalap.*—Take any quantity of powdered jalap root; pour upon it so much rectified spirit of wine as will cover it to the height of four fingers, and digest them in a sand-heat; filter the tincture through paper; put it into a glass cucurbit, and distil off one half of the spirit; add to the remainder a proper quantity of water, and the resin will precipitate; divide it into little cakes, and dry with a gentle heat. This has no place in the Pharm. Lond. 1788; but the extract is directed to be made like the resinous extract of bark.

It is a pure resin: but its insolubility in any aqueous fluid forbids its use, except it is previously triturated with an alkaline salt, gum, sugar, or a similar intermede. If thus managed, a dose from gr. v. to x. operates with sufficient ease and efficacy.

The jalap which remains after this resin is extracted, gives out, by boiling in water, a mucilaginous substance, which is said to operate by urine, but not in any degree by stool. But this is asserted without foundation.

From sixteen ounces of good jalap Neumann obtained ℥v. and ℈iv. of pure resin: but in the shops it is frequently adulterated; and the methods of imitating it are so various, as to elude every known method of detecting the fallacy.

The advantage of the extract consists in the equality of its strength; for some of the roots afford only ℥ij. while others afford ℥v. of the resin in a pound. But, except for the convenience of form, the tincture, with proof spirit, will answer every purpose proposed by the gummy resinous extract of the college, which may be given from ℈ss. to ℈i.

Tincture of jalap is made by digesting eight ounces of powdered jalap in two pounds of proof spirit, with a moderate heat, for eight days, then straining the tincture. The dose is from ʒi. to ℥ss.; mixed with syrup, it may be given to children with the greatest safety. This is the purgative said to be given by the inoculators who received their instructions from Sutton (Cullen's Materia Medica); and sufficiently certain in point of strength, as the menstruum does not extract the whole virtue of any kind of jalap. See Neumann's Chemical Works; Lewis's Materia Medica.

JA'LAPA A'LBA. See MECHOACANA ALBA.

JAMES, DR. gave his name to a fever powder, since highly celebrated. With a disingenuity highly reprehensible, he seems to have deviated from his original idea, and sold a medicine under the authority of a patent very different from the specification. He directs the antimony to be calcined in a flat unglazed earthen vessel, adding any "*animal oil*, or *salt*;" then to be boiled in melted nitre, and the powder separated by solution. The powder was found to contain no animal oil or salt, but an animal earth, which, though it may be now called a salt, had scarcely that appellation in Dr. James's time. He adds, that thirty grains of the powder, with one grain of mercury, was a moderate dose; but ten grains of the present powder, without the mercurial, is now such. Dr. Pearson has, however, in the Philosophical Transactions, taught us its real nature, and it is nearly imitated in the pulvis antimonialis of the London dispensatory. This preparation is, however, more active on the stomach and bowels than the powder of James.

Dr. Monro asserts, that Dr. James trusted to the bark in the cure of fevers rather than to his antimonial, which he only employed to clear the first passages. On this we can only remark, that had he really done so we should have heard little of his success.

JANAMU'NDA. See CARYOPHYLLATA.

JA'NIPHA. See CASSADA.

JA'NITOR, (from *janua*, *a gate*). See PYLORUS.

JA'NITRIX, (from the same). See PORTÆ VENA.

JA'RUS. See ARUM.

JASMINOI'DES, (from the Arabian word *jasmen*, and εἶδος, *likeness*). See COFFEA.

JA'SMINUM, and *jásminum officinale* Lin. Sp. Pl. 9, is chiefly used for the stimulating power of its essential oil.

JA'TROHPA. See CATAPUTIA MINOR, and CASSADA.

JATRO'PHA ELA'STICA. See CAOUTCHOUC.

JECORA'RIA, (from *jecus*, *the liver*; from its supposed efficacy in diseases of the liver); the *hepatica vulgaris*; and the name of a vein in the right hand. See SPLENITIS.

JE'CUR, (from the Hebrew term *jaker*). The LIVER; called also *hepar*, the upper part *erix*. Immediately below the diaphragm, on the right side, is placed the liver, whose small lobe extends to the scrobiculus cordis. It is divided into two lobes, besides the *lobulus Spigelii*, which Hippocrates calls *hypercoryphoses*; terminated by an obtuse margin above and behind, and an acute one before and below. The large lobe is situated on the right hypochondrium, contiguous to the diaphragm, reaching nearly as far back as the spine, and rests upon the right kidney: the small lobe runs close to the diaphragm, as far as the spleen. The convex side of the liver is usually connected to the diaphragm by three ligaments, which are continuations of the peritonæum; one lies near the edge of the extremity of each lobe, and one in the middle, and they are accordingly called the right, and left, and middle ligaments. The liver is likewise connected to the right ala of the tendinous part of the diaphragm by a broad adhesion, which is the reflection of the peritonæum, and is called the *coronarium ligamentum*. Under the great lobe, a little to the right, is the gall-bladder. The smaller lobe of the liver is in the left side, distinguished above by a membranous ligament, and below by a large division in the same direction as the superior ligament.

The eminences on the concave side of the liver belong to the great lobe; the principal one is a triangular mass, situated backwards near the great division, named *lobulus Spigelii*; this lobe is attached by a little peduncle to the middle of the lower side of the great lobe. The first fissure we observe, next to the great one, is a notch at the anterior part of the liver, for the reception of the ligamentary remains of the vena umbilicalis; the second fissure is towards the posterior part of the liver, between the lobulus Spigelii and the little lobe, where we observe the remains of the ductus venosus, which is afterwards inserted into the vena cava (see FŒTUS). Upon the right of the lobulus Spigelii, between that and the great lobe, is another fissure, in which the vena cava runs down; and the next is a transverse one, situated before the lobulus Spigelii, called *porta*: besides these, on the fore part of the great lobe there is a depression for the reception of the gall-bladder; and we may observe on the under side of the great lobe a small cavity, where it rests on the right kidney.

From behind the pancreas a mass of vessels and nerves run up to the porta. The hepatic artery comes off from the cœliaca, and divides into two branches, one of which goes to each lobe; and the vena portæ, when it arrives at the porta, likewise divides into two, one of which enters the right, and the other the left, lobe. From the duodenum and pancreas we see the pori biliarii, and ductus communis choledochus, which, at a distance from the porta, divides into two ducts, viz. the cystic, which goes to the gall-bladder, and the hepatic, which again is subdivided into two, and go to their respective lobes. The vena cava, in its passage through the diaphragm, sends off several branches, especially two which go to the liver, and are called *venæ cavæ hepaticæ*; their office is to return the blood to the vena cava after the bile is secreted. The blood from all the viscera, except the external hæmorrhoidal vessels, is returned to the vena portæ, which ramifies through the liver like an artery. The lower part of this vessel is called *vena portæ mesenterica*; and the upper *hepatica*. The greatest part of these vessels are inclosed in a membranous sheath, called, from Glisson, *capsula Glissonii*. This author first described it as composed of cellular membranes and nerves, covered by the peritonæum at their entrance, and ramifying through the liver with them; but the peritonæum must be absolutely excluded, for the nerves, with their cellular membrane only, go through the liver. The absorbents are very numerous. The nerves arise from the intercostal and eighth pair, which come from the hepatic plexus, and enter this viscus with the vessels.

The external surface of the liver is smooth, and covered with the peritonæum, which is connected with the liver by the cellular membrane, and by the vessels which are spread upon it. The liver is very soft, and like a piece of congealed blood; for it derives its principal consistence from the vessels. Malpighi, after injection, found it to be a congeries of folliculi, in which the vessels terminate. Ruysch thought it a congeries of vessels only in the tenderest part. The *penicilli* of Ruysch are a collection of vessels upon the surface; and, according to this author, the vessels do not terminate in the penicilli, but become infinitely finer; whence the structure of this viscus cannot be such as Malpighi imagined. The liver, according to the ancients, was the viscus wherein the chyle was converted into blood; but since the knowledge of the lacteals, and the discovery of the circulation of the blood, we know that the use of the liver is to secrete the bile. The blood comes to the liver by the hepatic artery and the vena portarum; but a greater quantity is sent by the latter than by the former, and it is from the latter, as formerly observed, that the bile is secreted. See Winslow's Anatomy, and Haller's Physiology, lecture xxvii.

The substance of the liver is chiefly formed by vessels in the form of small brushes, styled *penicilli*; but it has been doubted whether any follicle is interposed between the vessels of the portæ and the biliary pores. It may be at least asserted, that no such have been demonstrated, and we have no reason to think that any exist.

The bile first appears in minute points, styled *pori biliarii*. These unite and form the hepatic duct, whose coats have no appearance of a muscular structure, but whose internal surface contains numerous, apparently mucous, follicles. We omitted to remark in its proper place, that the whole of the blood conveyed by the vena portæ is not employed in the secretion of bile; for the extreme branches of this arterial vein anastomose with the branches of the hepatic vein, and in this way accumulations of blood, when bile is unnecessary, are prevented.

The *hepatic duct* passes towards, and, descending obliquely, somewhat behind, the pancreas to the lower part of the duodenum. It is inserted, from behind, nearly five inches below the pylorus by a sinus, into which the pancreatic duct also empties itself. This opening is oblique; for the two ducts pass between the cellular coat of the intestine, and again between the nervous and villous coats, before they open into its cavity, and at last are guarded from emptying their contents too rapidly by a convolution of the villous coat. Thus the mixture of the bile is slow and interrupted; for as the duct runs at least an inch between the coats of the intestines, any fulness of the canal must prevent its entrance. At the same time, the convolution of the villous coat, where the duct at last penetrates, must equally hinder fluids from being forced into the duct from the canal.

Near the portæ the hepatic duct receives, at a very acute angle, another from the gall-bladder, which, for a little space, seemed to run almost parallel with it. This is called the *cystic duct*; and another from the liver sometimes joins it previous to its union with the hepatic duct. We may just remark in this place, for reasons which will soon appear, that rats, camels, stags, the elephant, the horse, the rhinoceros, the trichechus manati, and the greater number of herbivorous animals, with the dolphin, and many of the cetaceous tribe, have no gall-bladder. (Cuvier Leçons de l'Anatomie comparée, vol. iv. p. 35 and 36.) The idea, however, that the bile is conveyed from the liver to the gall-bladder appears improbable, by the retrogade course which it must take to arrive at the latter. To add to the improbability, the cystic duct is smaller than the hepatic, and much smaller than the choledochus formed by the cystic and hepatic ducts. We observe, however, in the other mammalia, that the angle at which the ducts join is neither so acute nor so distant from the gall-bladder as in man. In these also the

fundus of the vesica is downward, which facilitates the passage of the bile. In many animals, small canals come immediately from the liver to different parts of the vesica, as in the ox, the sheep, the wolf, the dog, the hedge-hog, and the hare (Cuvier iv. 42); but in man no such canal apparently exists.

Experiments have not been wanting to elucidate this intricate subject. When the common duct is obstructed, both the cystic and hepatic ducts are said to be equally distended: when tied, the result is the same. If the cystic duct be tied, it swells between the ligature and the hepatic duct. Notwithstanding the angle, the bile passes readily, on pressure, into the liver; and in living animals it is seen, when the gall-bladder is opened, to distil from the cystic duct. When the cystic duct is tied or obstructed the gall-bladder is not filled, and seems to contain only a serous, or sometimes a mucous, fluid. The vesica biliaris, in its natural state, is not in contact by the stomach; but when this viscus is distended, its greater curvature presses with some force against the gall-bladder, and expels its contents.

If we compare these facts, we shall find it highly probable that the vesica is a reservoir for the bile, to keep up a constant supply, when from any accident the exigencies of the system require a larger quantity than the liver can furnish. We have no reason to think that the whole of the bile is sent to the cyst, nor has it been presumed that it gains any different quality. From the necessary absorption, it must become more concentrated, and more bitter and viscid; perhaps more acrid.

We have engaged at a greater length in this question than we should have thought necessary, as in the moment of concluding this article we received the ninety-first number of the Medical and Physical Journal, published in the present month (September, 1806), in which we find Dr. Rush's opinions respecting the use of the liver, &c. He thinks, that, instead of contributing to animalise the fluids recently taken in, the blood requires this circuitous route and this new secretion, to separate the remaining chylous particles which it may contain. The gall-bladder, he thinks, as we have already stated, is the reservoir of the superabundant bile, not at the time necessary for the process of digestion; but, he supposes also, that the bile in the gall-bladder is farther changed by a putrefactive process, and thus gains its bitter taste. In fact, according to this author, "the gall-bladder appears to be to the liver what the colon and rectum are to the stomach," the receptacle only of hepatic fæces. In cases of sickness, indigestion, or long fasting, he adds, in which the office of the stomach is suspended, the liver performs a vicarious duty; and when the functions of the liver are suspended, the stomach, with double anxiety, supplies its place. When the stomach is most busy, the liver is most idle; for the discharge of bile is, in his opinion, obstructed by the fulness of the stomach; and that it is only when the contents of this latter organ have passed the duodenum that the liver "pours its chyle into it." Yet we were before told that the liver was designed to animalise the fluids; and we are immediately afterwards informed, that the same pressure discharges the cystic bile, whose use is to separate the fæcal matters from the chyle. It is singular that pressure should stop one fluid, and promote the discharge of another, when their orifices are the same.

We have always declined engaging in controversy, and can now only add, that, on a careful consideration of the facts and arguments adduced by Dr. Rush, we do not find them applicable to this system, and, of course, they contribute nothing to its support. The facts and experiments which we have collected from different authors, in the present article, seem not to have occurred to this respectable veteran in the moment of writing, and his system appears neither probable nor consistent.

We own, however, that the consideration of Dr. Rush's system, and the facts which the examination has now led us to review, suggest some doubts whether the bile may not acquire additional properties in the gall-bladder. When we reflect that the gall-bladder is wanting in herbivorous animals, that it is always found in carnivorous, that the gall of children is sweet, that the hepatic bile is comparatively, if not really, mild and sweet, we are led to suspect that the follicles of cyst may furnish the bitter resinous part of the bile, and that, of course, the gall-bladder is a supplementary organ, a glandula succenturiata, subservient to the process of digestion. It is sufficient to state the doubts, with a general view of the facts, which lead to them; but this is neither place nor have we room for more minute discussion. Yet we think we could support this idea from some of the phenomena of digestion, and from some analogous phenomena in the animal machine.

The liver is the seat of various disorders, viz. inflammation, abscess, schirrus, hydatids, &c. See HEPATITIS; ICTERUS; BILIOSA FEBRIS; CHOLERA MORBUS; HEPATALGIA; and in most of these the countenance is yellow, with a greenish cast. Besides those disorders generally known, Mr. Crawford mentions one, which he denominates an enlargement of the liver. (See his Essay on the Nature of a Disease incident to the Liver.) The principal signs of it are, a great and sudden swelling and hardness of the belly, with a difficulty of breathing; the only very troublesome symptom. Previous to these, a general weakness, a sense of tightness about the breast, and a giddiness of the head on the slightest motion, are perceived; then an œdematous swelling appears in the legs, with pains in the back, thirst, and loss of appetite; the pulse is small and weak, but on bleeding it becomes more full and distinct; the countenance is florid: as the belly enlarges, the breathing is more difficult, and a sense of oppression is then felt about the præcordia; and a stricture about the cartilago ensiformis becomes almost insupportable, soon terminating in a complete suffocation. A violent vertigo and troublesome palpitation of the heart are occasionally observed. Some symptoms of this disorder resemble those of the scurvy; but the sore spongy gums attendant on scurvy are not observed in this complaint.

These symptoms show that an infarction of the liver has, at least, began, and that it must be quickly obviated. With this view, bleeding, with a mild, nourishing, and somewhat generous diet, has been recommended, followed by active laxatives, with calomel. In a disease where we have no pretensions to experience, we ought not to blame; but unless the symptoms are violent, the bleeding may be, perhaps, dispensed with, or a small quantity only taken. The laxatives are undoubtedly necessary and proper. The formula recommended we add.

℞. Aloes Socotr. ℥ss. rad. jalap. pulv. ʒi. calomelan, sap. Venet. āā ʒii. bals. Locatel. q. s. ut. f.

massa, ex cujus, singulis drachmis formentur pilulæ. N° xii.

The patient is greatly relieved, it is said, a few hours after bleeding; and by means of these pills, repeated at proper intervals, the complaints gradually abate, and the cure is generally completed in the space of nine or ten days.

People who return from warm climates are subject to an increased secretion of bile in the primæ viæ, attended with general languor, nausea, foul tongue, loss of appetite, indigestion, frequently diarrhœa, a yellow skin, with a very unhealthy aspect. Bath waters are in these cases of service, though the Cheltenham spring has lately become more fashionable.

JEJU'NUM, (from *jejunus, empty*). One of the small intestines, generally found empty: *nestis*. Where the duodenum ends it begins, and is immediately attached to the mesocolon. It proceeds downwards from the left side to the right, and obliquely forward, making several convolutions, which are chiefly situated in the upper part of the regio umbilicalis.

JE'MOU, or JE'MU. See GAMBOGIA.

JESUITA'RUM PU'LVIS. See CORTEX PERUVIANUS.

JETAI'BA. The Brasilian name for the locust-tree. See ANIME, GUM.

JE'TICA BRASILIE'NSIBUS. See BATTATAS HISPANICA.

JETICU'CU. See MECHOACANA NIGRA.

JOINTS. (See ARTICULATIO and ARTICULUS.) We have resumed the consideration of this subject, to reduce into one view the diseases of the cavities of the joints; these are either effused fluids, or loose cartilaginous or bony bodies. The fluids effused are either blood, pus, synovia, or water. Any fluid is ascertained to exist in these cavities by a swelling felt on every side, and yielding on pressure; while accumulations in the bursæ mucosæ are partial, and will not pass, on pressure, to the opposite side. When the disease arises from a violent bruise, the fluid is probably bloody; the accumulation which follows rheumatism, watery; but when it is the consequence of a strain, which has been followed by violent inflammation, the matter is usually pus mixed with synovia. When discutients, with gradual pressure from a bandage, fail, and the fluid must be evacuated, a very small trochar should be employed; the skin drawn up, so that immediately on emptying the cavity it may be again drawn down, to cover the aperture in the ligament. A sticking plaster must be immediately applied, the joint firmly swathed with a flannel bandage, and some blood taken from the arm to prevent inflammation.

These precautions are peculiarly necessary, as the air stimulates the cavities of joints, and excites an unconquerable inflammation, which nature sometimes relieves by forming an anchylosis, but in which art usually fails.

The extraneous bodies in the capsular ligaments are generally found in the knee; but of the treatment necessary in these cases we have already spoken. See GENU.

JO'VIS FLOS. See CROCUS.

JO'VIS GLANS. See JUGLANS.

JU'BA, a MANE; a panicle, called from its resemblance to a horse's mane.

JUDAI'CA A'RBOR. See SILIQUASTRUM.

JUDA'ICUM BITU'MEN, (from *Judea*, whence it was brought). See BITUMEN.

JUDICATO'RIA, (from *judico*). A synocha of four days.

JUGA'LE OS, vel JUGAME'NTUM, (from *jugum, a yoke*). See MALARUM OSSA.

JUGA'LIS SUTU'RA. The SAGITTAL SUTURE. It is sometimes the suture by which the os jugale is articulated to the bone of the upper jaw.

JU'GLANS, (quasi *Jovis glans, the nut of Jupiter*). The WALNUT. The tree is sometimes called *carya*, the appellation of walnuts rendered black by boiling; and the rob *diacaryon: nux regia, basilica, Persica, & Euboica; caryon; caryon basilicon; juglans regia* Lin. Sp. Pl. 1415.

The kernel and its oil resemble those of almonds; the shells are astringent: an ointment made by boiling the leaves of walnut-tree in lard is said to be an useful application to hæmorrhoids and old ulcers; the bark and the catkins are strong emetics; the juice of the root an active cathartic, and the powdered leaves anthelmintic.

The unripe fruit, which has a bitter astringent taste, is an anthelmintic laxative. Two drams of the inspissated juice are added to four drams of cinnamon-water, and from twenty to fifty drops given two or three times a day, for six days; interposing a purgative, with calomel, on the fourth. Gargles made of the rob, dissolved in any convenient vehicle, may be used in aphthæ and sore throats. Vinegar, in which walnuts have been pickled, is said to be a very useful gargle.

JUGULA'RES VENÆ, (from *jugulum, the throat*). The JUGULAR VEINS; *venæ apoplecticæ*, and *soporales*. They are external and internal, corresponding with the carotid arteries. The internal, which ascends by the side of the aspera arteria, is called *apoplectica*.

JU'GULUM, (from *jugum, a yoke*; because the yoke is fastened to this part); the *clavicle* Celsus. The THROAT, or anterior part of the neck.

JU'JUBA; *zizipha*. The JUJUBE-TREE; *rhamnus zizyphus* Lin. Sp. Pl. 282. Jujubes are a half-dried fruit of the plum kind, about the size and shape of an olive, consisting of a thickish, reddish, yellow skin, a whitish fungous pulp, and a wrinkled stone pointed at both ends. They are the produce of a prickly tree, with three-ribbed leaves, and herbaceous or yellowish flowers, sometimes found wild, but commonly cultivated in the southern parts of Europe.

This fruit is styled incrassant and demulcent, and hath been used in pectoral decoctions. The rhamnus jujuba has similar virtues.

JU'JUBA I'NDICA. See LACCA.

JULA'PIUM, (from the Arabic term *gulab*); *juleb, julepus;* JULEP, a form of medicine invented by the Arabians, generally liquid, clear, and sweet; juleb, in the Persian language, signifying a sweet potion.

A julep is generally only a vehicle for other articles, to render them more easy in the stomach, or more effectual; so that they should not only be agreeable, but concur with the intention of the principal medicine. This form is often named after the material used, as Julepum è Camphorâ, Cretâ, and Moscho.

JU'LEP. A name for syrupus.

JU'LUS, CATKIN. See AMENTUM.

JUNCA'RIA, (from *juncus, a bulrush*). ITALIAN

RUSHY HORSE-TAIL. Lemery mentions this plant as vulnerary and detersive; but it is not known in the present practice.

JUNCTU'RA, (from *jungo, to join*). See ARTICULA IO.

JU'NCUS ODORA'TUS, *fœnum* vel *stramen camelorum, schœnanthus, holoschœnos, squinanthum, juncus aromaticus, palea de mecha, gramen dactylon aromaticum;* SWEET-RUSH, or CAMEL'S HAY; a dried grass brought from Turkey and Arabia, resembling barley-straw, and full of a fungous pith; *andropogon schœnanthus* Lin. Sp. Pl. 1481: the genus is the same with that which furnishes the spica nardi.

When in perfection its smell is agreeable, warm, bitterish, and not unpleasant to the taste. An extract possesses its chief virtues; but other more valuable articles supersede its use. It has been employed as a cordial and an emmenagogue.

JUNI'PERUS, (from *juvenis, young,* and *pario, to bring forth;* because it produces its young berries, while the old ones are ripening). JUNIPER; *juniperus communis* Lin. Sp. Pl. 1470; also called *arceuthos,* and its berry *acatalis.* With us it is a bush, but in Norway a large evergreen tree, the wood of which is called *cedrinum lignum; lignum juniperinum.* Its leaves are slender, narrow, stiff, and sharp-pointed; the flowers catkins; the berries have each three oblong irregular seeds; its young fungi are called *calieta,* or *caliette.*

The berries are chiefly brought to us from Holland or from Italy. They should be chosen fresh, not much shrivelled, and free from mouldiness. They have a moderately strong, but not disagreeable, smell; a warm pungent sweetish taste, which, if previously bruised, is followed by a considerable bitterness. The sweetness seems to reside in the juice, or pulpy part of the berry; the pungency in the bark; the bitterness in the seeds; and the aromatic flavour in the oily vesicles spread throughout the pulp and the seeds. In the dried berries this oil is hardened into a resinous substance, visible on breaking the seeds, which are called *ebel.* They give out nearly all their virtue both to water and to spirit. Distilled with water they yield a yellowish essential oil, *alchitron,* resembling, in its medical virtues, that of turpentine, and are carminative, stomachic, detergent, and diuretic.

The London college orders the spiritus juniperi comp. COMPOUND SPIRIT of JUNIPER, formerly called *aq. juniperi composita,* to be made by adding to a gallon of proof spirit, with as much water as is sufficient to prevent empyreuma, one pound of juniper berries, bruised; carraway and fennel seeds, bruised, of each one ounce and a half; from this a gallon is to be distilled. Pharm. Lond. 1788.

The coriander seeds answer the purpose of the other aromatics; but half a pound is required to a pound of the berries. The common spirit, called *gin,* is flavoured by these berries, though often with turpentine. The name is derived from the Italian *giunipero.*

The rob of juniper berries is prepared by boiling juniper berries well bruised in water, and inspissating this, or the decoction after distilling the oil, to the consistence of thick honey. This is so greatly esteemed as to have obtained the name of *theriaca Germanorum.* It may be used in catarrhs, weakness of the stomach and intestines, and difficulty in making water, to which old people are subject. Hoffmann highly recommends it; though generally considered as an inactive preparation.

The following formula was prescribed by Van Swieten: ℞. Rob bacc. juniperi ℥ij. dilue in aq. juniperi simplicis ℔ij. spiritus juniperi ℥ij. et ad sitim sedandam, Sps. ætheris nitrosi ℥ss.; m. dosis cochl. ij vel iv. tertia hora. The infusion of the berries, either alone or mixed with a little gin, is in dropsies a very useful drink. In uterine obstructions, scorbutic affections, and cutaneous diseases, the juniper is said to have been useful; but in the two last complaints the wood and tops have been preferred. The essential oil is an active stimulant, a warm carminative, an useful diuretic, and a deobstruent. Doses from ten drops to thirty.

The wood of the juniper tree is sudorific, and of similar qualities with that of guaiacum and sassafras, but inferior to either.

JUNI'PERI GU'MMI. The resin obtained in warmer climes, particularly in Africa, is semipellucid, and of a pale yellowish colour; it is in small masses, resembling mastich, but larger; the sandaracha of the Arabians, and the gum juniper of the shops. From its use it has been called *vernix,* and the powder is employed to prevent ink running on paper, under the name of *pounce.* This resin hath a light agreeable smell, and not much taste. It dissolves in rectified spirits, if violently shaken in them; and in oils both expressed and distilled, but is insoluble in water. See Lewis's and Cullen's Materia Medica.

JUNI'PERUS. A name of several species of cedar. See CEDRUS FOLIO CYPRI, and CEDRUS PHŒNICIA.

JUNI'PERUS LY'CIA. See OLIBANUM.

JUNI'PERUS SABI'NA. See SABINA.

JUPICA'NGA. See CHINA OCCIDENTALIS.

JU'PITER. See STANNUM.

JUS, (because in families it was distributed in *just* proportions). BROTH; *brodium.* Broths made of the lean parts of beef or mutton are very nourishing; in weak, worn-out constitutions strong broths cannot be digested, and their strength should always be proportioned to the digestive powers.

JUSTI'CIA. See ADHATODA.

JUVA'NTIA, ADJUVA'NTIA, (from *juvo,* and *adjuvo, to assist*). Medicines or aliments that *assist,* opposed to *lædentia,* such as injure. When the nature of a distemper was doubtful or unknown, the ancients prescribed some innocent medicines which they were well acquainted with, and according as they were serviceable or otherwise, though, in a small degree, they formed some judgment of the future method of proceeding. These approximations were technically styled *juvantia* and *lædentia.*

JUVE'NTUS, (from *juvo, to help,* because at this period of life persons began to be useful). See ÆTAS.

JUXTANGI'NA, (from *juxta, near,* and *angina, a quinsy*). A species of quinsy. See PARACYNANCHE.

K.

KAA'TH. (See TERRA JAPONICA.) Even in a very late work, the Dictionary of Natural History, it is said to be the inspissated juice of the barleria hystrix, probably the *b. prionitis* Lin. Sp. Pl. 887, brought to a greater consistence with farina and sawdust.

KABOLO'SSA. See CHINA OCCIDENTALIS.

KA'DAL. This shrub grows in the East Indies, and is probably the *melastoma malabathrica* Lin. Sp. Pl. 559, though greatly resembling in habit the *osbeckia chinensis.* The fruit, when ripe, is eaten, and calicoes are dyed with the juice.

KADA'NAKU. See ALOES HEPATICA.

KÆKU'RIA. See ELEMI.

KÆMPFE'RIA ROTU'NDA. See ZEDOARIA.

KA'HA. See CURCUMA.

KAKA MOU'LLON, KAHA MULLU. An East-Indian siliquose tree. The bark is boiled in milk, and is said to cure a diabetes and gonorrhœa. Raii Historia.

KAKA NIA'RA. An East-Indian tree, the leaves of which destroy worms. See Raii Historia.

KAKA-TO'DDALI. *Paulina Asiatica* Lin. Sp. Pl. 524. A small shrub growing in Malabar, used in various disorders, from a redundancy of serum. Raii Historia.

KALENZI-KANSJA'VA. See BANGUE.

KA'LI, (Arabic); *salsola, salicornia, alga marina,* SALT-WORT, and SNAIL-SEEDED GLASS-WORT. *Salsola kali* Lin. Sp. Pl. 322, a plant with spreading, reddish, pretty thick branches; oblong, narrow, pointed, fleshy leaves, like those of houseleek; flowers imperfect in the bosoms of the leaves, followed each by one seed spirally curled, and inclosed in the cup. It is annual, grows wild on the sea-coasts in the southern parts of Europe, particularly of the Mediterranean.

The herb is juicy, bitterish, and remarkably saline. The expressed juice, and infusions, or decoctions of the leaves, are said to be powerfully aperient and diuretic, and been much recommended in dropsies; but the kali is principally regarded on account of its yielding copiously the fixt alkaline salt, called *soda;* and it is cultivated about Montpelier: for this purpose it is prepared at Alicant, in Spain, from a different species of kali. Different marine plants contain this salt, and what is made in Scotland and Ireland is called *kelp.* See Woodville's Medical Botany, p. 387, 388.

From the *quercus marina,* or *fucus vesiculosus, fucus maritimus, alga marina,* SEA-OAK, SEA-WRACK, or SEA-TANG, much alkaline salt is obtained by incineration: the juice of its vesicles, left to putrefy, yields on evaporation a portion of acrid pungent salt.

The plant is a soft slippery one, common on rocks that are left dry at the ebb-tide; the leaves resemble those of the oak-tree in shape, the stalks running along the middle of the leaves, and terminating by watery bladders, containing either air or a mucilaginous matter. The vesicles begin to fill in March, burst about the end of July, and discharge a viscid matter.

If the putrid juice is applied to the skin, it sinks into it immediately, excites a slight sense of pungency, and deterges like a solution of soap. One of the best applications at the decline of glandular swellings, for perfectly discussing them, is a mixture of the juicy vesicles on the leaves of this plant, gathered in July, with an equal quantity of sea-water: they should be kept in a glass vessel for ten or fifteen days, until the liquor becomes of the consistence of thin honey. The parts affected are to be rubbed with the strained liquor two or three times a day, and afterwards washed clean with water.

A cataplasm of the quercus marina, made by bruising a quantity of this plant, is applied externally in cases of scrofula, white-swellings, and other glandular tumours. Sea-water and oatmeal formed into a poultice sometimes supply its place.

The salt here described is, in strict language, the soda or natron, the mineral alkali; but, in general, every alkaline salt has the same title, and the chemical, as well as the medical, properties are the same. Their affinities also differ very little; but as an external application in glandular swellings, the salt from the sea plants is preferred. See ALCALI and CINERES CLAVELLATI.

KA'LI ARSENICA'TUM. ARSENICATED KALI. Let equal quantities of arsenic and purified nitre be powdered and well mixed together, put into a retort, and placed in a sand-bath, the heat of which is to be increased gradually, until the vapours cease to issue from the mouth of the vessel. The mass must then be dissolved in four pounds of distilled water, a proper quantity of which must be evaporated, and the residuum set aside to crystallise. Dose, one-fifth of a grain three times a day. This is used for the same purpose as the

solutio arsenici. See INTERMITTENS FEBRIS, and CANCER.

KA'LI, vice SAL ABSI'NTHII. See ALCALI, and CINERES CLAVELLATI.

KA'LI ACETA'TUM. See SAL DIURETICUS.

KA'LI PRÆPARA'TUM. See ALCALI.

KA'LI TARTARIZA'TUM. See TARTARUM.

KA'LI PU'RUM, or FIXED VEGETABLE CAUSTIC ALKALI, is prepared by evaporating a gallon of the water of pure kali to dryness, and afterwards melting it by fire. Ph. Lond. 1788. This salt is deliquescent, which renders the application very inconvenient, unless joined with quick lime. See CAUSTICUM COMMUNE FORTIUS.

KA'LI SULPHURA'TUM. *Hepar sulphuris.* Take flowers of sulphur one ounce, kali five ounces; mix the salt with the sulphur melted by a slow fire, by constant stirring, till they perfectly unite. Ph. Lond. 1788. The dose is from five grains to a scruple. In tetters and other cutaneous affections this salt has been recommended. It has been employed dissolved in water, as a bath for the psora; and in cases of tinea capitis it has often been used by way of lotion, and has been strongly recommended to prevent the effects of mineral poisons. For the alkaline neutrals, see CHEMIA.

KA'LI A'QUA is the kali which has deliquesced in a moist place; and it does not differ from the kali præparatum.

KA'LI PU'RI A'QUA. Take of kali four pounds; quick-lime six pounds; distilled water four gallons; add to the lime four quarts of water, and let them stand for an hour; then add the kali, and remaining part of the water; boil them for a quarter of an hour; let the liquor cool, and strain it: a pint of this fluid ought to weigh sixteen ounces. If the liquor raises an effervescence by the addition of any acid, more lime must be added. An earthen or glass vessel should be used, and the liquor strained through linen. Pharm. Lond. 1788.

KA'MSIN. The hot winds blowing over the burning sands of the desart, and reaching Egypt about the period of the equinox. The fatal effects of this wind are in part owing to its containing a considerable proportion of inflammable air, probably from the decomposed water, and in part from its great heat and dryness. The effects of the Samiel of the Desart, a wind nearly resembling the kamsin, is described with great pathos and eloquence by Bruce. See Volney's and Bruce's Travels.

KANE'LLI. A name of two East Indian evergreen trees, the flowers of which are used in diarrhœas; but they are not found in the systems of the botanists. See Raii Historia.

KANNAGHO'RAKA. See CARCAPULI LINCOTANI.

KAOLIN. One of the ingredients of the Chinese procelain, probably a growan clay, or a decomposed granite.

KA'PA MA'TA. See ACAJAIBA.

KA'RATAS. The PENGUIN, or wild ANANAS; common in the West Indies, as an acid in punch, but too austere to be swallowed alone. The karatas of Plumier is, however, a different species from the *pinguen* of Dillenius. Each, however, is a species of *bromalia*, and each an American plant. See Lin. Sp. Pl. 408.

KARE'MYLE. See OROBUS.

KA'RFE, (*karfeh,* Arab). See CINNAMOMUM.

KARIN-TA'GERA. An evergreen tree in Malabar; it resembles an hazel. The oil from the root prevents the hair from falling off. Raii Historia.

KARI-VETTI. A tree in Malabar; the juice of its leaves is emetic. Raii Historia.

KA'RVA, (*karvah,* Arab.). See CASSIA LIGNEA.

KA'TKIN. See AMENTACEI FLORES.

KATO-CŒ'LIA. The ABDOMEN. See CŒLIA.

KELP. MINERAL ALKALI. See KALI, ALKALI, and CHEMISTRY.

KE'NNA. See LIGUSTRUM INDICUM.

KERATOPHY'TON, (from κέρας, *a horn,* and φυτόν, *a plant;* because it is pellucid). *Lithophyton.* The name of a submarine plant, transparent, of a viscid consistence, and often covered with a cretaceous crust, sometimes of elegant and various colours. The only species which possesses any medical virtue is the CORALLIUM NIGRUM, q. v. and these are very inconsiderable.

KE'RMES, (Arabic term *chermah*). See CHERMES.

KE'RMES MINERALIS. See ANTIMONIUM.

KE'RVA, OL. (*kervah,* Arabic). See CATAPUTIA.

KE'TMIA. The leaves and flowers resemble those of mallows; the fruit is divided into many partitions, the top of which opens when ripe, and discloses many seeds. All the species, except those which taste like sorrel, agree in virtues with mallows. The genus called *ketmia* by Tournefort, is the *hibiscus* of Linnæus. It is of little importance to ascertain any species, as none except the ABELMOSCHUS, q. v. has any medicinal quality.

KETRAN. See CEDRIA.

KEYSE'RI PI'LULÆ. KEYSER'S PILLS, (from the inventor's name). According to an account in the Edinburgh Medical Commentaries, they consist of pure quicksilver, reduced to a red calx by a proper degree of heat, which being dissolved in eight parts of vinegar, is to be mixed with manna, of which two pounds will be required to each pint of the solution. This composition being dried gently by the fire, is rolled into pills, and recommended as the most effectual remedy of all the mercurial preparations against the venereal disease. See ARGENTUM VIVUM.

Mr. Keyser adds a singular remark; if to the solution of a pound of the red calx, in eight pints of vinegar, two pounds of mercury, in the metallic state, be added, a substance will arise, by agitation, to the surface, in the form of cream. If this be taken off, more will rise on every successive agitation. This cream, united with manna, he supposes to be highly useful in recent venereal complaints.

KIBES. An obsolete name for the heel, and consequently for chilblains, which usually affect the heel. See PERNIO.

KI'K, or KI'KI, (from *kike,* Arabic). See CATAPUTIA.

KIKEKUNEMALO. A gum resin, whose source we are not acquainted with. It has a subacrid resinous taste, and has been supposed an useful resolvent, as well as beneficial in nervous diseases.

KILBURN WATERS. A bitter purging water. See AQUÆ MINERALES.

KI'NA-KI'NA, (from the countess of *Cinchon*). See CORTEX PERUVIANUS.

KI'NA-KI'NA AROMA'TICA. See THURIS CORTEX.

KI'NKINA EUROPÆ'A. See GENTIANA.

KI'NO. (Indian.) See GUMMI RUBRUM ASTRINGENS.

KIPPAKELE'NGU. See BATTATAS HISPANICA.

KIRIBU'NNAWELL. See CHINA OCCIDENTALIS.

KNA'WEL. Ray. Tournefort calls it the *chamæ-linum vulgare folio glabro flosculis plurimis*. GERMAN KNOT-GRASS. *Scleranthus perennis* Lin. Sp. Pl. 580. It is somewhat astringent, but never employed in medicine.

KO'LERUS. A dry ulcer.

KO'LTO. See PLICA POLONICA.

KRAUT SAU'ER. Pronounced by the English SOUR KROUT. See BRASSICA.

KRIE'BEL KRA'NKHEIT. See RAPHANIA.

KRI'MNA. See ALPHITA.

KURU'DU. See CINNAMOMUM.

KUTU'BUTH. An Arabian name for a water-spider, an insect perpetually in motion. Hence the name hath been transferred to a species of melancholy, called by Sennertus *melancholia errabunda*. See LYCANTHROPIA.

KY'MIA. See CUCURBITA.

KY'NA. See OPOPONAX.

L.

LABA'RIUM, (from *labo*). Looseness of the teeth.

LA'BDANUM. See LADANUM.

LA'BEO, (from *labium, a lip*). See CHILON.

LA'BIA. See PROCESSUS.

LA'BIA, and LA'BIUM, (ἀπο του λαβειν, *quo apprehendimus cibum*). A LIP. The lips, of which the red part is called *prolabium*; the sphincter, *orbicularis labiorum*, are sufficiently known. When the cuticle here called *epithelium* is taken off, the appearance of the parts beneath is villous.

LA'BIUM LEPORI'NUM. The HARE-LIP; *rostrum, labellum*, and *labrum leporinum*; *lagostoma*; *lagocheilos*, consists in a division in the upper lip, from a loss of substance, like that of a hare. The division sometimes resembles the letter M, and is then called the *double hare-lip*. A similar fissure in the under lip is called the *spurious hare-lip*; but this seems never to have occurred.

An operation is required, in which we must first divide all its adhesions internally with a scalpel, and with a straight pair of scissars, or rather with a sharp scalpel, as the scissars bruise the parts, cut off the callous edges, so as to make an angle at its upper part. The operator must then pierce the upper end of the divided part with a silver pin, armed with a steel point, at about one-third of an inch from the edge of the wound; bring the point nearly to the bottom of the sore, and raise it again through the surface at the distance of nearly one-third of an inch. A thread must be next passed across each end of the pin, to draw the lips of the wound together, and like a figure of eight. Another pin is passed through the middle of the lip in the same way, and a third near the other extremity of the fissure. The wound is secured by thread in the same manner, round each pin, and the steel points, which usually fasten by screws, are taken off. A pledget of digestive over the whole will keep the thread soft.

Mr. Pott observes, that when the hare-lip is double, it sometimes happens that the middle portion contracts, and the bone projects. In this case, the projecting bone must be removed by means of a chisel; the contracted part of the lip then brought down and detained by a bandage. The operation is afterwards performed as in the single hare-lip, suffering each side to be thoroughly healed before the subsequent operation is attempted. The pins should not be moved before the sixth or seventh day, and then the stitches must be first cut, to see that the flesh is securely joined before the pins are moved. When a part of the bone is cut away, the wound must be healed previous to the operation on the lip. See Le Dran's Operations; Heister's Surgery; Sharp's Operations; Bell's Surgery, vol. iv. p. 149; White's Surgery, p. 269.

LA'BIA PU'DENDI, *cremnoi, labra*, arise from the mons veneris, and extend from the fore part of the pubes, whose symphysis is exactly between them, to within a short distance from the anus. They are more prominent and thick above than below, composed of skin, cellular membrane, and fat; red within, and outwardly, about the age of puberty, covered with hair. The angles of the labia, above and below, are called *commissuræ*.

LABIA'LES ARTE'RIÆ, (from *labia, lips*). See MAXILLARIÆ ARTERIÆ.

LABIA'LES GLANDULÆ. The LABIAL GLANDS. The membrane which covers the inside of the lips is a continuation of that on the cheeks, perforated by many small holes, which answer to the same number of small glands. See Winslow's Anatomy.

LABIA'TUS, (from *labia, a lip*). See FLOS LABIATUS.

LA'BIS, (from λαμβανω, *to lay hold of*). Any forceps.

LA'BIUM. See LABIA.

LA'BOUR. See PARTURITIO.

LABRISU'LCIUM, (from *labrum, a lip*, and *sulcus, a deep sore*). A CHAP IN THE LIP, *cheilocace*; generally attending swollen lips, and common in scrofula. It usually requires the treatment necessary in that disease; but, as a temporary relief, may be rubbed with the oleum ceræ, or with the oleum amygdylarum and spermaceti. This also is the name given to the cancrum oris.

LA'BRUM, (ἀπο του λαβειν, from its power of receiving). See DEXAMENE.

LABRU'SCA, (from *labrum, a lip*; so called because it grows on the sides of fields). See BRYONIA ALBA.

LABYRI'NTHUS, (λαβυρινθος). The LABYRINTH. The second cavity of the ear, *fodina*, lies in the pars petrosa of the temporal bone, which runs forward and inward. It is an oblong body, divided into three parts, called the *vestibulum*, the *cochlea*, and the *semicircular canals*. The vestibulum (in which the stapes stands) is situated in the middle; the cochlea is the an-

terior, and lies forward and inward; and the semicircular canals, which compose the posterior part, lie backward and outward. The three parts of the labyrinth are lined by a fine periosteum, which spreads over, and shuts the two fenestræ of the tympanum.

LAC, (from *lakak, to lick up,* Arabic). Milk is the secreted fluid destined for the nourishment of the animals arranged by Linnæus in the class of *mammalia,* comprehending also, from this circumstance, the *cetacea.* It is a white opaque fluid; and, when viewed with a microscope, globules, like those of the blood, appear to swim in it. It is therefore, most certainly, not an homogeneous fluid, whose parts are chemically united, but an heterogeneous one, simply mixed. Its resemblance to the blood is striking; and as it is of the colour of the chyle from which the blood is formed, it was an obvious suggestion that the milk was only chyle again separated from the general mass. Chyle has not, however, been sufficiently analysed to support or confute this idea. It appears, on the whole, improbable, since sugar contains a saccharine matter, and particularly a larger proportion of phosphorated lime than any of the other animal fluids. To which may be added, that milk requires the digestive process as well as other nourishment; and it is never apparently assimilated until it has been coagulated.

Milk was probably the food of the earliest inhabitants of the globe, since their herds, of which their riches consisted, must have afforded an obvious supply of this delicious nourishment. Cheese seems to have been known more early than butter, for it was of importance to preserve a supply of food when the milk of the herds would, at least, lessen, if not disappear. Butter is obscurely hinted at by Herodotus, but described more particularly by Hippocrates: each author speaks of the art of making it as being derived from the Scythians. When first drawn, milk has a faint smell, generally mixed with that of the animal which afforded it. This aroma is soon lost on exposure to the air, and much of the delicacy, perhaps the salubrity, of the fluid, seems to disappear with it. The sweetishness however remains, but is in different degrees in different animals, depending on the proportion of sugar which it contains. The sweetest milk is that of the sheep.

When milk is at rest, first the aroma disappears, and soon afterwards the surface assumes a yellower colour, and a thick tenacious scum called *cream* rises to the top. When this is separated, the milk is of a bluish white colour; and, on standing longer, the *curd* or cheesy part separates. An oily substance forms a portion of the milk when first drawn; but the consistence of cream is owing to its imbibing a portion of oxygen from the air; and the curd does not spontaneously separate till the acid fermentation begins. It is separated, artificially, by a variety of substances, as all the acids, except the carbonic, and the weaker kinds similar to it; by different vegetables, as the galium, the vallantia cruciata, the madder, the bark, and, apparently, other vegetable astringents; by some animal substances, as the stomach of a young animal, however carefully washed and dried, the livers of turkeys (Spalanzani), &c. Jacquin, in his Elements of Chemistry, tells us, that the vegetables only act when cold, or in cold infusions. When boiled in milk, or boiling decoctions of the same plants are added, coagulation is retarded rather than hastened. Milk is coagulated also by salts, particularly such as contain an excess of acid, as the cream of tartar; benzoic and succinic salts; by metallic solutions; by alcohol, and all spirituous liquors; though the addition of camphor or borated soda will, it is said, prevent this effect when either is dissolved in alcohol. In every instance, however, the coagulation is firmer and more perfect with the assistance of heat.

The alkalis which are said to coagulate milk unite in reality with the oily part, and produce a soap, which seems to entangle, occasionally, some of the curd. These flocculi, for such is their form, become successively, by boiling, yellow and brown. Pure alkalis render the milk more fluid, by equally dissolving the oil and the curd. Lime-water seems to procure an imperfect coagulation.

Milk, when urged by heat, gives up its oily portion, which forms a dense pellicle; and that part of it which touches the sides of the heated vessel burns, and gives the whole an empyreumatic taste. If this is prevented, the serum procured is thin and pure. If, however, the heat is more violent, an insipid water comes over, flavoured with the aroma of the milk, which soon becomes putrid. The remainder is an extract, which, with warm water, again becomes milk, though without the aroma. If this extract be exposed to a strong heat, an empyreumatic acid oil, ammonia, hydrogenous and carbonic acid gases come over. The remaining coal affords kali, muriated kali, phosphat of lime, and occasionally a little iron.

When left untouched, milk undergoes the acetous fermentation at different periods, according to the heat of the weather and the nature of the animal. In warm weather, and in ruminating animals, this change is soonest observed. Mare's milk continues longest unaltered. The tendency of milk to the acetous fermentation is checked, it is said, by boiling.

If milk in a moderately warm place be frequently stirred, no separation occurs, and the vinous fermentation comes on. The greatest quantity of spirit, it is said, will be afforded by cow's milk, though that of the mare, as the most saccharine fluid, ferments soonest; and the Tartars prefer it, as affording also more spirit. The putrefactive process comes on slowly. Stipriaan (Memoirs de la Societé de Medecine a Paris, 1787-8) informs us, that cow's milk showed no signs of putridity after four summer months, asses milk three months, and female milk nearly an equal time.

The cream, we have said, is the oil, which has acquired a greater consistency by its union with oxygen. In the form of butter it is still more intimately united with this principle, and a chemical union apparently takes place as heat is excited. In general, the cream is suffered to rise spontaneously, but in the West its separation is assisted by heat. The milk is put in shallow earthen pans, and remains in them twelve hours in summer, and twenty-four in winter. The pans are then placed on hot stoves, and the temperature raised, so as to be scarcely short of boiling. On the first appearance of bubbles the pans are removed, and remain at rest twelve or twenty-four hours longer, according to the season. This cream, styled *scalded* or *clotted,* is generally agitated by the hand in making butter, and the churn is only used when the raw cream is employed.

The thickest and richest creams are afforded by the sheep and goat; the milk of the mare, the ass, and the female, afford the thinnest. From female milk scarcely any separation takes place, even with the assistance of heat. The fluid separated in making butter is called *buttermilk*. It is the serum, enriched with some of the oil of the cream.

The curd is a true albuminous substance, without smell or taste, nearly insoluble in water, hardened in hot water, soluble in acids, forming, with the vitriolic and marine, brown solutions; with the nitrous a yellow. It is easily dissolved by alkalis, but most powerfully by the mineral; and, when this is pure, during the solution, a volatile alkaline smell arises: a fact not sufficiently noticed, and which will admit of some application. In distillation, an insipid water comes over that easily putrefies; and the remainder, on increasing the heat, blisters, like burnt horn, affording hydrogenous and carbonic acid gas, ammonia, a heavy fetid empyreumatic oil. The coal contains lime and phosphat of lime. When exposed to a strong heat in an open fire, curd softens and melts; becomes transparent and tough; and, when cold, is hard and brittle.

The curd of goat and cow's milk is solid and elastic; that of the ass's and mare's milk less solid; of the sheep merely glutinous; of the female generally fluid, and with difficulty separated. See CASEUS.

The whey is similar to the serum of the blood. The whey separated in making cheese is a watery fluid, without any admixture of oil; but, in its usual state, some of the oily and some of the albuminous portion are diffused through it. Sweet whey affords sugar of milk: when the milk has been previously sour, it is styled sour whey; and, by adding a small portion of spirit of wine, and subjecting it to a fresh fermentation, a true vinegar of milk may be prepared (Jacquin). The spirit of milk is apparently not developed till it becomes acid; the Tartars hasten the acetous fermentation by the addition of oatmeal, and do not distil it till it is strongly sour. Thus milk holds a middle place between animal and vegetable substances. As it undergoes the acetous and vinous fermentations, and becomes very slowly putrid, it resembles vegetables. Its albuminous curd is of an animal nature.

Before we proceed to consider the medical properties of milk, we shall describe more particularly the milk of different animals, viz. that of the cow, the human female, the ass, the goat, the sheep, and the mare.

The general appearance of *cow's milk* is well known, and to this standard we shall refer the taste and more obvious properties of other milks. It is differently flavoured, however, according to the age and the food of the animal. When near the time of calving, it is more of an animal nature than at a future period; and the milk of farrow cows is, at first, saline. The alliaceous and the umbelliferous plants, horse mint, cabbages, and turnips, give it their peculiar flavour. The leaves of maize are said to render it mild and saccharine; the potatoe plant insipid. The Alderney, Alpine, and Sardinian cows give a very rich milk: those of the north and of Catalonia an aqueous blue milk. Tessier observed some milk, which was white when drawn, soon became blue; a change attributed to their eating the isatis (woad). Dr. Garden found, that the milk was blue after the cows had eaten of this plant; and it is usually red when they have eaten madder or the fruit of the cactus opuntia. Cow's milk, in an ordinary state, boils at 113°.

The carbonic acid gas, the boracic and oxalic acids, do not coagulate this milk when mixed with it, though Stipriaan observes that the latter, if strewed on it in powder, will have this effect. The curds produced by the other acids are dissolved again by alkalis. When vinegar is employed for the coagulation, the dissolved curd is of a rose colour. Other reagents act on it nearly as we have said they do on milk in general. The electric fluid thickens it a little. Its specific gravity is 1028.

Eight pounds of milk afforded, on distillation, eight ounces of a clear fluid, which retained the smell and taste of the animal's food. This fluid became turbid after some time, but again clear in a heat of twenty-eight of Reaumur, while some light filaments were formed. When filtered it became clear and tasteless, leaving nothing after distillation. The residuum after the first distillation was sweet and butyraceous, called by Hoffman *franchipan*; and, when diluted in boiling water, the white milky fluid is called *Hoffman's whey*. When distilled, it affords water, a very fluid yellow oil, an acid, a volatile alkali, a thick black empyreumatic oil, and an inflammable gas. The ashes seem to contain an alkali and a muriated soda.

The first milk after calving (*colostrum*, *primum*, or *beastings*), resembles other milk, with the addition of a mucous substance. The specific gravity is 1072. It is yellow, but soon coagulates on the fire, and becomes white. The specific gravity of the second colostrum was 1052. It is more difficult to coagulate, and stirring wholly prevents this change. Rennet changes the first colostrum to a jelly, and coagulates the second: the first contains more than three times the quantity of butter, and a much larger proportion of albuminous matter. Both colostra become more quickly putrid than other milk, and seem to contain a large proportion of the gluten of the blood.

The cream of cow's milk, after standing about three weeks, was covered with a green effervescence, and the under part had a cheesy flavour (Parmentier). The scalded cream acquires this flavour much sooner; and this was the reason for our asserting that some of the curd was probably entangled with it. On distilling this semiputrid cream, the usual results obtained from fat bodies were discovered. (See ADEPS.) The milk, last drawn from the cow, has the largest proportion of cream; and the cream, as it rises in succession on the milk, while at rest, decreases in quantity, and deteriorates in quality. Thick milk throws up less cream than that which is thinner, but its quality is better. If the milk is diluted with water, the cream is more copious, but less rich. Previous agitation lessens the proportion of cream; and the proper temperature for its rising most successfully is about 54° of Fahrenheit. Milk in autumn gives more cream than in spring; but it rises soonest in summer.

The butter of cows is usually yellow: if white, its quality is inferior. If the milk has been kept too cool, the butter is pale, with little flavour, and not unctuous or rich. To have butter in perfection, the first drawn milk should be separated, and the first risen cream preferred. Some little acidity must take place previous to

the separation of butter, and this must be produced by the agitation, if not before approaching. The cream should, therefore, be kept for some time previous to the churning. The yellowness of butter is probably owing to the constitution of the animal, but the contact of the air has also some effect, for the internal parts of the mass are whiter than the external. To preserve butter from rancidity, two drams of sugar, as much nitre, with half an ounce of salt, will be sufficient for sixteen ounces of butter. The rancidity of butter depends, in part, upon its retaining some whey, which holds a caseous matter; for it keeps in proportion to its washing: but, after every care, some of the caseous matter seems to remain, and to this its consistence is owing (Fourcroy). Thus, to melt butter without granulations, we add flour to prevent the cheesy portion falling to the bottom, and keep it in constant agitation.

Skimmed milk still retains a portion of the oil and the cheesy matter, which separate on its becoming acid; it is rich and pleasant. This matter is separated also in pellicles, by boiling. When flakes of cheese are put into a fluid alkali they are dissolved, while a considerable quantity of ammonia is separated, formed by a decomposition of the cheese, and the subsequent union of its hydrogen and azote. The alkaline solution of cheese, when heated, becomes brown, and deposits a portion of animal matter. When this matter, held in solution, is separated by acids, it is black, melts in the fire like thick oil, and, when cold, is greasy; the remaining hydrogen, with the oxygen, forming oil, and, with the alkali, becoming saponaceous. When the cheese is separated from the alkali by an acid, an hepatic odour is perceived. The [illegible]eous matter is completely dissolved by vinegar, and has a greater affinity to the vegetable acids than to any other.

Whey, when fresh, is sweetish and somewhat saline; but when filtrated pellucid. It contains some caseous matter dissolved by an acid, which is separated on the addition of an alkali, and a small portion of sugar of milk.

The milk of women is thin, of a bluish colour, of a mild sweet taste, and a pleasant odour. Its specific gravity is 1029. On exposure to air, it is covered with a very thick white matter; but, from this, no butter could be procured. On standing, the portion which separated was still more butyraceous, though still incapable of forming butter. When distilled, water, a strong empyreumatic oil, ammonia, an acid, and inflammable gas, came over. The fluid, then, which was deposited from this unctuous matter, was a butter-milk; but its transparency was not changed by alcohol or acids. After evaporation, it afforded sugar of milk, with some cheese. Female milk, when skimmed, did not, in a warm temperature, coagulate in five days; but became turbid and acid. Crystals of sugar of milk were formed, and the thick mother ley afforded muriat of soda. Pellicles rose on heating, as on cow's milk. *Human milk is coagulated as cow's milk, except by acids.* These, even with the assistance of heat, had no effect. It was also not coagulated by alkalis, but the kali gave it a brown, a red, and at last a black, colour; lime water a deep yellow. The earths, the neutral and metallic salts, alcohol, or the electric fluid, produced no change except on the colour; but the infusion of oak bark and sour milk, previously coagulated, produced a coagulum. The cheese which it affords is finer and more tender than that of any other milk, but does not form a mass. Sixteen hundred parts of this milk afforded 137 of cream; forty-eight of a matter resembling butter; forty-three of cheese, and 117 of sugar. Three hundred parts of this sugar afforded eighty-five of lactic acid. Human milk scarcely becomes sour after a long period. It never passes either to the vinous or putrid fermentations.

Human milk differs so essentially in different women, and even in the same woman, at different times, that the results of experiments greatly vary. Parmentier found the results so contradictory, that he suspected some deceit, and employed only milk which he drew himself. The results of his trials were, however, still contradictory. This may, perhaps, account for Dr. Clark's assertion, that human milk contains no caseous part, and he could not succeed in coagulating it, by any means, or in any temperature. (Transactions of the Royal Irish Academy for 1788.) What has been supposed therefore to be a coagulum of the caseous part, may have been only cream; and during the period of the first and second colostrum only was it found yellow. At every other time it is white.

The milk of the ass is whitish, with some degree of transparency, of a peculiar smell, and a saltish taste, mixed with its sweetness. Its specific gravity is 1023. Alcohol, the metallic salts, rennets, and all the acids, except the fluor, and the cream of tartar when cold, coagulate it. Alkalis produce a slight coagulation, and different changes of colour. Neutrals render it thinner. It coagulates with difficulty when at rest, and the coagulum is weak. The cream is of a yellowish white, sweet, and at first thin. Afterwards it acquires a greater consistence. The whey is sweetish and yellowish. Sixteen hundred parts of this milk afford forty-seven of cream; fifty-three of cheese; seventy-two of sugar of milk, which contains about one fourth of acid. The coagulum of this milk does not depend on its caseous matter, for this is spontaneously separated, falling to the bottom in the form of very tenacious particles. The cream is neither thick nor copious, and, with difficulty, assumes the form of butter, which is soft and white, without any peculiar taste, but quickly becoming rancid. The butter-milk, which has a mild pleasing taste, must be carefully separated, or it soon again dissolves the butter. The sugar is in small proportion, and it contains also a little calcarious muriat, sometimes muriat of soda. It agrees with human milk in being soon converted into whey when the caseous matter is deposited; and in proportion to this deposition the sweetness increases.

The milk of the goat is very white, sweetish, and of an unctuous taste. Its specific gravity is 1036. It is affected by reagents nearly as asses milk. The cream is very thick, of a mild agreeable taste, and slowly proceeds to acidity. It easily forms butter, which is white, firm, and consistent; and, from its thickness, is easily converted into a very rich cheese, which is not soon injured by keeping. The butter-milk abounds with cheesy matter, which may be separated by acids. The quantity of cheese which this milk affords is its chief characteristic. The curd is so copious that the whey separates with difficulty. The curd is also gelatinous and consistent, while in female or asses milk it is in

divided particles. The cheese is peculiarly rich and agreeable. The butter is white and rich, but not as from asses milk in consequence of a mixture of the curd, for none is deposited on melting. On this account it keeps long without spoiling. Sixteen hundred parts of this milk contain 127 of cream; 72 of butter; 146 of cheese; 70 of sugar of milk, of which one-fourth is lactic acid. The saccharine matter appears to be less than in female or asses milk. Its sugar white when the serum spontaneously evaporates. When artificial heat is used it becomes a jelly, and the crystals are coloured. The serum contains a very small proportion of common salt.

The milk of the sheep greatly resembles that of the cow. Its specific gravity is 1035, and it readily runs into the acetous fermentation in summer. When at rest, a thick, rich, sweet, yellowish cream rises in considerable quantities, which affords much butter; but it is oily to the taste, and its consistence is not considerable. It easily becomes rancid if not well washed. Its cheese is rich and viscous, but mild and agreeable. The serum affords a very white sugar. Sixteen hundred parts afford 185 of cream; ninety-three of butter; 245 of cheese; and sixty-seven of sugar, of which one-fourth was lactic acid, and as much was obtained from the remaining fluid. All the acids (except the carbonic acid gas), alum, and liver of sulphur, coagulate it. Kali and soda render its colour dark; if caustic, red; ammonia, which also attenuates it, yellow. The neutral salts have no effect on it. The characteristics of this milk are the quantity of cream it furnishes, the quantity and richness of its cheese. The famous Roquefort cheese owes its excellence to the mixture of sheep's curd. Annales de Chimie, iv. 31.

The milk of the mare retains the smell of the animal, and it tastes as if water was mixed with it, though its specific gravity is 1045. The mineral acids coagulate it; the phosphoric deprives it of its colour and opacity; the fluor and saccharine acids slightly coagulate it when warm. Lime-water precipitates a caseous matter when warm; alcohol renders it slightly curdy; rennet has no effect on it. Mare's milk is remarkable for its fluidity, but it is less so than female or asses milk, and more tasteless than either. Parmentier informs us that it easily boils, and is not difficult to coagulate. Its distilled water is nearly inodorous, and its franchipan less copious and unctuous than that of the cow. On a slight heat this milk is covered with pellicles, and the first are the most unctuous. The cream rises soon, is yellowish and clear, but produces no butter. The skimmed milk resembles that of the cow, but the vegetable acids separate slowly the cheese, and in a form resembling that from human milk. The serum afforded a vitriolated lime in needle-like crystals, and sugar of milk in the form of a saline concretion. The mother water was found to contain muriat of lime. Sixteen hundred parts afforded only thirteen of cream; twenty-six of cheese; 140 of sugar of milk, of which about forty were lactic acid. From mare's milk the ardent spirit is chiefly procured. The art of making it is of great antiquity, and consists in not permitting the separation of the component parts of the milk, or again uniting them, if separated, till an acidity is observed. The spirit is apparently developed at the same time with the acid.

It is remarked by Parmentier, that when cows are diseased, the albuminous curd is the only part changed. The corresponding part of other animal fluids seems, alone, to suffer from a morbid state of the body.

Stipriaan gives a short comparison of different milks, which we shall subjoin. The most *aqueous*, he observes, is the milk of the ass. Then follows that of the mare, the human female, the cow, the goat, and the sheep. *Cream* was most abundant in sheep's milk; next in the human, the goat's, cow's, ass's, and mare's milk. *Butter* was in the largest proportion in sheep's milk, next the goat's, cow's, and human milk. *Cheese* abounded most in sheep's, then successively in goat's, cow's, ass's, human, and mare's milk. Most *sugar* was afforded by mare's milk, followed by the human, the ass's, the goat's, the sheep's, and the cow's milk. Parmentier divides milks into two classes, the serous and the caseous, or butyraceous. The first contains asses, mares, and human; the second, the cow's, the goat's, and the sheep's milks.

These facts, which have not been hitherto collected in any medical work, point out the absurdity of numerous directions, which fill the volumes of dietetic writers, and those authors who have written on the diseases of children. Women's milk, as we have said, is so various, that general rules can scarcely be drawn; but if any fact respecting it is better established than another, it is, that acids will not coagulate it. We have already observed, that milk must be coagulated before it can become subject to the digestive powers, and this is consonant to another fact, noticed in the article DIGESTION, q. v. that, unless the food or drink is delayed in the stomach, though absorbed, it is soon again carried to the excretory organs, as a substance foreign from the habit. This is even the case with water. That milk must be coagulated in the stomach is proved, not only by these circumstances, but by infants vomiting milk as it is taken in, when any disease occurs in the stomach, and their occasionally vomiting it in a coagulated state, when the discharge has been accidental, or from fulness. We recollect some experiments made, many years since, by Mr. Wilson, though we believe not published, in which, after the most attentive examination, no acid could be detected in the stomach of infants. We now see, that if it had been there it would not have produced coagulation. Acid, we know, does occasionally abound in the stomachs of infants, because we find it changing the colour of the bile; but it is not constantly present, and still less is it necessary to assist the digestive process. To assist in this enquiry, we mentioned the effect of rennet (the stomach of the calf), though carefully washed and dried, in coagulating cow's milk, and added a fact from Spalanzani, that the liver of the turkey would produce a similar change. Why may not the stomach of a child, and, in a less degree, that of an adult, occasion the coagulation? But, though this be not granted, we have seen that, when human milk has been once coagulated, the former coagulum is sufficient to produce this change in fresh milk; and this is certainly the most common cause. From these observations, we may, at least, draw one inference, that absorbents are too commonly given to children. Acid in the stomach seldom produces any bad effect. It is carried off like any foreign body, and soon neutralised by the bile. Our predecessors, in practice, used them freely; but by

employing the animal earths, they fortunately did not always exhibit an absorbent, and only threw into the stomach a small quantity of an indigestible powder, which was soon again discharged. Such was the Gascoyne's powder, the pearls, and a great variety of costly and fashionable medicines.

In the directions for a milk diet, equal absurdities prevailed. To prevent coagulation, we are sometimes advised to add aqua ammoniæ or lime-water (Motherby, fifth edition). We now know that these produce other changes not salutary, and coagulation appears really necessary. We may, indeed, admit, that the coagulum of cow's milk is sometimes too firm, and, with that view, a small stimulus may be necessary to enable the stomach to conquer it: and, for this purpose, a small portion of rum is sometimes added, and, perhaps, some of the warmer spices may be occasionally substituted with more advantage. But to add a medicine which will *promote*, in order to *prevent* coagulation—to prevent what is essentially necessary to the digestion of the milk, is an accumulation of absurdities without example, except in the work we are now attempting to improve.

Milk, we have seen, holds a middle place between vegetable and animal foods. It is milder than the latter, and more stimulating than the former; but in its effects on the constitution it approaches more nearly to animal than vegetable aliment. (See ALIMENT.) The milks preferred as medicinal are chiefly cow's, ass's, mare's, and female milk. The goat's whey is preferred to its milk.

Cow's milk we have found a rich nutritious fluid; but, by carefully choosing the kind, the age of the milk, the time of milking, &c. it is thinner and more digestible. In many stomachs it is, however, heavy and indigestible; and the idiosyncracy of the patient should be considered when it is prescribed. The quantity should, however, be also limited; for, if in excess, it produces great inconvenience from its bulk. Physicians have been so much afraid of its coagulating, that they have not employed a very convenient form of cow's milk, the slight curd produced by rennet. Cow's milk is often prescribed in hectic cases, sometimes in fevers, and in cases where the fluids are supposed to be acrimonious, as in cancers, cutaneous eruptions, and similar complaints. In many of these diseases it is, however, too stimulating, particularly in fevers, occasionally in hectics; and, as it has been observed, in the usual preparatory diet for the inoculated small-pox. In these cases it is diluted with water, with decoctions of the farinacea, as in gruel, and with whey. Butter-milk and whey have been sometimes substituted.

Ass's milk is, we have seen, a less stimulating fluid, and less nourishing. Its oily matter is in much less proportion, its coagulum weak, and, what is apparently of the greatest consequence, the caseous matter is not entangled with it, but precipitated. The little butter which it contains is readily dissolved in its serum. On these accounts, it appears peculiarly adapted to those states in which every stimulus is highly injurious, as in hectics. In the choice of this milk, there is not, however, sufficient discrimination. If many take the milk of the same animal, convenience, rather than the nature of the disease, determines the time; and the richer fluid of the last milking may be thus brought to the most irritable habit. The age of the foal is also seldom attended to, and the laxative colostrum of the early period may be given to those whose bowels are particularly irritable.

Female milk has been seldom employed, nor are we well aware of its medical effects. It contains a large proportion of cream, and a small one of cheese. Its coagulum is also tender, and it resists the effects of acids in producing this change. It will be, therefore, probably useful in all cases where asses milk has been recommended; nor can we think it, from the bosom of a healthy young woman, so disgusting a remedy as from the ass. *Mare's milk* has been employed, but of its efficacy we know nothing. From its fluidity, and small portion of caseous matter, we should suppose it to be an useful substitute for ass's or human milk.

The very large proportion of cheese in goat's milk does not seem to render it an eligible aliment for invalids, and we believe the whey is chiefly employed. This must probably prove a salutary beverage in some diseases, and we have heard many instances of its success. From our own experience, however, we know nothing.

The sugar of milk is sometimes separated, but rather for curiosity than use, for it is, we believe, never given medicinally. (See SACCHARUM LACTIS.) In the Paris Pharmacopœia, it is directed to be prepared from the whey of cow's milk, clarified, filtered, and evaporated. Whey is usually prepared by adding an infusion of rennet, and is thin in proportion to the hardness of the coagulum. Cheese whey is peculiarly thin, and merely a saline aqueous fluid. The whey prepared for drinking is an opaque fluid, with a proportion of the oil, and a small quantity of the curd suspended. It is not an easy task to bring it to the most pleasing consistence; and it is said a small portion of alum is employed for this purpose. The proportion, however, is so small, that we have not found it give uneasiness even in the most irritable bowels. Whey is, of course, less nutritious than milk, but is a mild soft demulcent, highly useful in the early stages of fever, in hectics, in coughs, and inflammatory complaints of every kind.

Milk is used as an intermede, or *vehicle*, at least to suspend, if not, in part, to render some medicines more miscible with water. Bark, in powder, is covered very successfully by milk; and with a small proportion of a decoction of liquorice is agreeably disguised. The volatile tincture of guaiacum, and similar preparations, are also very conveniently exhibited in milk.

See Dioscorides, lib. ii. cap. 64. Voltelen de Lacte Humano; Jacquin's Chemistry; Scheele's Works; Fourcroy and Chaptal, Annales de Chimie, vol. vii. x. and xxxi.; Jahrig; Parmentier and Deyeux, Journal de Physique, 1790 and 1791; Greive on the Koumiss, Edinburgh Transactions, 1788; Clarke on Human Milk, Irish Transactions, 1788; Stipraan, Livisens, and Bondt, Memoires de la Societé de Médecine Paris, 1787 and 1788; Hoffman's Dissertatio de Sero Lactis; Medical Musæum, vol. iii. p. 361, &c.; Cullen's Materia Medica.

LAC ACE'TOSUM. See ALCAOL.

LAC AMY'GDALÆ. MILK OF ALMONDS. See EMULSIO.

LAC ASINI'NUM ARTIFICI'ALE. See ERYNGIUM.

LAC CA'LCIS. MILK OF LIME; water whitened by a solution of quick-lime, which is also in part suspended in it.

LAC SPUMO'SUM. See APHROGALA.

LAC SU'LPHURIS. See SULPHUR PRÆCIPITATUM.

LAC VIRGINA'LE. See BENZOINUM.

LA'CCA, (from the Arabic *lakah*). LAC, or GUM LAC; *ancosa*; is a concrete brittle substance, of dark red colour, brought from the East Indies, incrusted on pieces of sticks, internally divided into cells. It is the gummy resinous substance from two species of ficus, viz. the *f. Indica* and *religiosa* Lin. Sp. Pl. 1514, effused in consequence of the puncture of a species of coccus. The nest in which the insect also is sometimes found adhering to the branches is called *stick lac*. In the cells small red bodies are often observed, which appear to be the young insects. If the stick lack is broken into small pieces, and infused in warm water until it ceases to give any tincture to the liquor, the remainder appears of a transparent, yellowish brown colour, and is called *seed lac*: and on raising the heat so as to melt the seed lac, it rises to the surface, and is formed into what is called *shell lac*. When melted, and cast in cakes, it is styled *lac in tablets*.

The seed and shell lacs being robbed of the colouring animal matter, seem to be of an intermediate nature between that of wax and resin, and to partake of the nature of both. They crumble on chewing, and do not soften or unite again; laid on a hot iron, they inflame, and soon burn. If distilled like wax, they yield an acid spirit, and a butyraceous oil. Alkaline lixivia, and volatile alkaline spirit, dissolve them into a purplish liquor. With the help of heat, they dissolve in rectified spirit of wine. Alum promotes their solution in boiling water. Lac is not used in medicine; but the colouring matter serves as a paint, and the remainder is an ingredient in sealing-wax. See Neumann's Chemical Works. Lewis's Materia Medica.

From lac an acid is procured, styled the *laccic acid*. Dr. Anderson, in 1786, received from the interior parts of Hindostan nests of insects, resembling cowry shells, which he found to be the coverings of the females of an undescribed species of coccus. Some of this matter, which resembled bees-wax, was sent to England; and, in 1794, Dr. Pearson, in the Philosophical Transactions, published an analysis of it.

About one quarter of this white lac contains a reddish acid, which tasted saltish, and not sour, though it changes paper, stained with turnsole, to a red colour. When heated, the smell is that of newly baked bread. The properties of this acid are very distinct; but as it has not been employed in medicine, they need not detain us.

LACCO'PEDON. See SCROTUM.

LACERATU'RA, (from *lacero, to tear*). See VULNUS.

LACE'RTULI and LACE'RTUS, (from *lacertus, an arm*). BUNDLES OF FIBRES. In every muscle, long, slender, soft fibres are found, possessed of some elasticity, running parallel with each other, surrounded with a large portion of cellular membrane, and collected into what are called *lacertuli*, in shape like the arm from the elbow to the wrist. These, bound together with a looser, generally adipose, membrane, run into large bundles, divided by cellular stripes, or partitions, and are then called *lacerti*. The lacerti running parallel, or inclined, surrounded with a thin cellular membrane, continuous with the partitions, and separated by a thicker cellular texture from the neighbouring fleshy parts, are considered as one muscle. See BRACHIUM, where the word lacertus is used in another sense.

LA'CERUM FORA'MEN, (from λακιζω, *to tear*); one of the inner foramina in the head, through which the third, fourth, first branch of the fifth, and the sixth pair of nerves pass.

LACERUM is also applied to a leaf whose margin is irregular.

LA'CRYMA, (from δακρυμα, *a tear*). A TEAR; and the gum of a tree, which appears in drops like tears.

LA'CRYMA ABIE'GNA. See TEREBINTHINA.

LA'CRYMA JO'BI, *lithospermum, millium arundinaceum*, REED MILLET, JOB'S TEARS. *Coix lacryma Jobi* Lin. Sp. Pl. 1378. The seeds resemble tears; and are said to be lithontriptic, but are little used. Raii Historia.

LACRYMA'LIA O'SSA, (from *lacryma, a tear*). See UNGUIS OSSA.

LACRYMA'LIA PU'NCTA, are two small orifices at a little distance from the internal angle of the eye, on the edge of the eye-lids, which lead to the lacrymal canals and sac.

LACRYMA'LIS GLA'NDULA. See GLANDULA LACRYMALIS.

LACRYMA'LIS NE'RVUS. The first branch of the fifth pair of nerves is called the *orbitary*; and this is subdivided into three others, the last of which is called the *lacrymal branch*; as it is chiefly dispersed on the lacrymal gland.

LACI'NIA COROLLÆ, (from *lacinio, to perforate*), Any part into which the border of a monopetalous corolla is cut. It is applied also to monophyllous calices, and a calyx which has two laciniæ is said to be bifid; or to divisions on the borders of leaves; hence called

LACINIA'TI, *jagged*, implying an irregularity in the division and subdivision: laciniæ, according to Linnæus, is the same with a part, segment, or cleft.

LACO'NICUM. See BALNEUM.

LACTA'NTIUM TABES, the hectic of nurses, chiefly from debility. See LACTATIO. It is characterised by every symptom of weakness in the animal and vital functions, to which evening exacerbations and morning sweats succeed, even when there is no peculiar affection of the lungs. Indeed the lungs are apparently never affected, unless there is a constitutional predisposition to phthisis. In this disease, the bark and mineral acids, where no pulmonic affection exists, and Griffith's mixture, with myrrh and steel, when such is suspected, are the best remedies. If decided hectic symptoms come on, the disease must be treated as a true PHTHISIS, q. v.

Weaning is often essentially necessary; but we have in general found it more useful first to try whether lessening the quantity of milk which the child takes will not succeed. Even where hectic symptoms have come on, we have thought moderate sucking rather advantageous than hurtful. Much, however, must depend on the mother's health, on that of the child, and many minute circumstances which it is impossible to detail.

See Fothergill in the Medical Observations, vol. v; and Walker on the Memoirs of the Medical Society.

LACTARIA, (from *lac, milk*). See LACTICINIA.

LACTATIO, (from *lacteo, to suckle*) SUCKLING. The child should suck, if possible, during the first month; for the early milk is not only advantageous to the child, but the discharge prevents many inconveniences to the mother. If, however, from extreme debility, a deficiency of milk, or too short nipples, this is impossible, it should be consigned to a healthy young woman, whose milk is nearly of the age of the child.

In general, the health of women during suckling is better than at any other period of their lives Their appetite is excellent; the sleep they have, sound and refreshing; their spirits free; their temper cheerful. If the nurse fails in any of these respects, suckling will be less beneficial either to herself or infant. If she fails in the greater number, particularly in appetite or sleep, she should decline the office.

When the new-born child is to be suckled by the mother, it should be applied to the breast in ten or twelve hours after delivery; for the milk is by this means sooner and more easily supplied; fever and inflammation of the breasts more certainly prevented.

If the mother does not suckle her child, her breasts should be kept warm with flannels, or with a hare-skin, to keep up a constant perspiration. If she does suckle, she should carefully cover the breasts when she first opens her bosom and when the child is taken from it, as the cold air is sensibly felt in that tender organ, the skin quickly corrugated, to which pain, inflammation, and abscesses often succeed.

A wet nurse should be young, of a healthy habit and an active disposition, a mild temper, and whose breasts are well filled with milk. If the milk is good, it is sweetish to the taste, and totally free from saltness: to the eye it appears thin, and of a blueish cast. The regular recurrence of the menses is generally an objection; and it is often a very strong one. The inconveniencies arise from the child being slightly disordered at the commencement of the return; and the symptoms of teething are often aggravated by the irritation which these returns produce. The menses are sometimes supposed to be advantageous, and are said to *renew* the milk when it is old; but this is an idea without the slightest foundation.

A hired nurse is generally kept from her husband; but by this restriction the temper is often ruffled, and more injury than advantage is sustained by the infant. If the nurse's child is of the same age with that she suckles, she will not probably be again with child till the period of weaning arrives. If older, the greater is the probability of her being again pregnant, and the separation from her husband more necessary. A child may be safely weaned at seven months, but should not suck more than ten. Changes of nurses should, if possible, be avoided; yet this is rather the caution of experience, perhaps of prejudice, than of reason.

Nurses should eat, at least, one hearty meal of animal food, with a proper quantity of vegetables, every day. Thin broth, or milk, is more proper for their breakfasts and suppers than tea; and if the strength should seem to fail, a draught of good ale may be occasionally allowed; but spirituous liquors should be avoided.

Every mother should, for her own sake, as well as her infant's, attempt to suckle. Yet some constitutions are so peculiarly weak and nervous, that the dread of increasing these complaints is a frequent impediment. It should not, however, at least, hinder the attempt; for weak habits have suckled with advantage even to themselves. If, however, the milk is scanty; if, though copious, it is thin and watery; above all, if the child is restless and uneasy; if it frets and pines; a healthy nurse should be procured. But the experiment should first be made, and the attempt should not be given up unless the child suffers. Let every young mother, however, reflect, that if she cannot give up midnight orgies; if she cannot, when her child, by the most pathetic cries, demands, yield it a genial balmy food, uninjured by fatigue, agitation of mind, or indigestion, let her resign her task, or rather forsake her duty. This she may, in part, compensate; but to destroy the health, the constitution of her infant, by the opposite conduct, must for ever be a thorn in her heart; A CRIME WHICH SHE CANNOT EXPIATE HERE, PERHAPS NEVER.

LACTAS, (from *lac, milk*). *Lactat.* Salts produced by the union of the acid of the LACTIC ACID, q. v., with different bases.

LACTEA FEBRIS, (from *lac, milk*). The MILK-FEVER. It is a frequent custom to apply the child only to its mother's breast, when the milk flows freely, on the third or fourth day. A fever is thus, from the irritation of the milk, brought on; but it rarely happens to those who have applied the child early to the breast. Where there is a secretion of milk, its due discharge is as necessary as that of the lochia; and the stoppage of either produces fever. Cold, or any cause of fever on the coming on of the milk, may occasion similar inconveniences.

The more immediate causes are a distension of the vessels of the breasts, readily distinguished by the swelling of the glands in the axilla; and an absorption of milk become acrid by stagnation. It is known by a rigor and looseness coming on after the breasts have been inflamed and painful, followed by thirst, headach, and burning heat. If the disorder is not violent, it soon spontaneously vanishes by a copious perspiration.

If the patient is full and robust, blood may be taken from the arm; but this evacuation is rarely required. A young, strong, hungry child should be applied to the breast; and linen cloths, dipped in fresh cool-drawn linseed oil, laid over them: the bowels should be emptied by a cooling purge, and the saline mixture, with the usual antimonial preparations, given. These, with a thin cooling diet, will generally remove the disease. If the breasts should suppurate, see ABSCESSUS PECTORIS and MAMMÆ; Kirkland on Child-bed Fevers.

LACTEA VASA, *galactophori ductus*, (from *γαλα, milk*, and *φερω, to carry*). The LACTEAL VESSELS. These vessels were not unknown to Erasistratus and Herophilus, and are distinctly mentioned by Galen. It was supposed, very early, that they conveyed the nutriment from the intestines; but, as usually the liver was considered to be the part in which the blood was elaborated, these vessels were said to terminate in that organ. Plates still exist in which they are represented as taking this course, though it had been contradicted by Galen.

To Asellius the credit of the discovery has been given, and the exact day fixed, viz. the 23d. of June, 1622,

when opening a dog for an experiment of a very different nature: but, in reality, he saw them only as Galen and his predecessors had done; and so far from tracing their course to the thoracic duct, he described them as terminating in the liver. He saw, however, their valves, and conjectured, rather than demonstrated, that they receive their contents by orifices opening into the intestines. It is singular that he had not connected with this discovery the description of the thoracic duct by Eustachius, in 1563, which would at once have cleared up the principal circumstances of this *lesser course* of the lymph or chyle.

Asellius never saw the lacteals in the human body, but supposed their existence from analogy; and it was twelve years afterwards, viz. in 1634, that Veslingius first discovered them, and added, in the year 1649, the revival of the discovery, of Eustachius, viz. the existence of the common receptacle of the lacteals and lymphatics, the thoracic duct. Rudbeck, nearly at the same era, without any previous communication, discovered the lymphatics in quadrupeds; and about the year 1654 traced the duct in the human body. About the same time our countryman, Dr. Jolyfe, also discovered the lacteals and lymphatics without any knowledge of Rudbeck's success. As these authors discovered them in man and in quadrupeds, so Bartholine seems first to have seen them in fish.

Thus the existence of an absorbing system was apparently ascertained; and, since that period, gradual additions were made to its extent; but the great questions remained undecided: was the absorbent system of vessels general in every part of the body; and were these newly-discovered vessels the only ones destined for this purpose? The answer to the first question would, in part, decide the second; for were they general, they were probably the only absorbents. As the extent of their range was increased, therefore the opinion of their being exclusively absorbents was stronger; but, in 1757, Dr. Monro published, at Berlin, a short dissertation, by which he endeavoured to prove, by a few simple and decisive experiments, that the lymphatics were a general system of absorbents. The honour of the discovery was soon after claimed by Dr. Hunter, and a controversy of some asperity was for a time carried on. The observations which we offered on the discovery of the circulation will apply precisely to the present dispute; nor was it without design that we have called the system of the lacteals the "lesser course," comparing it to the lesser circulation through the lungs. In fact, the former discoveries had placed this so much on a level with even a common capacity, that it required not the reach of a giant to grasp it. Dr. Monro had undoubtedly the honour of first bringing it forward in a compact scientific form.

At that time, however, and long since, the question was not decided, whether the lymphatics were exclusively absorbents. It is admitted that red veins *do* perform this office, in the fœtal part of the placenta, for instance, and in the corpora cavernosa penis. We cannot, therefore, deny their powers; and as the lymphatic system seems not to be equally extensive in every part, it is still possible that the veins may supply their place. We consequently have left the question apparently at issue in the articles ABSORBENTIA VASA and ABSORPTIO; but have little hesitation in offering our opinion, that the *lymphatics, except in parts of a peculiar construction*, are *exclusively absorbents*.

We have thus spoken of the lymphatics and lacteals as the same. In fact, they are the same in structure, in direction, and office. The lymphatics sometimes carry a milky fluid, and the lacteals a serous one; each conveys occasionally blood, dissolved or suspended osseous matter; in short, every thing which nature requires to be removed from the cellular or other cavities of the body.

The lacteals arise from the cavity of the intestines, from beginnings almost imperceptible. The discriminating eye of Lieberkühn, assisted by good glasses, perceived, on examining the villous coat, vesicles like a small egg, which he styled *ampullulæ*. These, he thought, were either the extremities of lacteals, or, at least, the receptacles of the chyle immediately absorbed. Later authors have denied the existence of these vesicles, and thought that the small ovoid receptacles were only convoluted arteries and veins surrounding the nascent lymphatic. From a careful comparison of the descriptions, we think it highly probable that Lieberkühn was deceived, and that these ovoid vesicles are really convoluted vessels. We know that the reputed acini of many glands have been found to be vascular. If also the chyle be absorbed by capillary attraction, we know that the vessel must be very minute, or the cohesion of the fluid very inconsiderable. The chyle is, however, a milky fluid, and most probably, like all such, its molecules possess a greater attraction to each other than those of water. A vesicle, therefore, is not well adapted for absorption, and would rather impede than assist the progress of the chyle, thus opposing a function of importance, which often requires a rapid exertion. It seems more probable that the orifices of the lacteals open into the intestines, and that their mouths are very numerous, actually constituting the villi, from which the internal coat has its name, and that each villus has its artery, vein, and nerve. In the usual state the villi are apparently pendulous; but when the minute arteries are excited to action, that they are erected like the fimbriæ of the Fallopian tubes; and that in this way their apertures are contracted, so as to become of a proper diameter to absorb the chyle by capillary attraction.

We must not, however, conclude that anatomists of eminence and character, who have described these ampullulæ, were wholly mistaken. They have been seen by Lieberkühn, by Sheldon, and by Cruickshanks; but as it is impossible to inject them, it is doubtful whether the chyle may not impart a white colour to the mass of convoluted arteries; and we rather suspect this may be the case, since, in the moment of the discovery, it seems to have been doubtful whether the supposed orifices were not rather the interstices between the adjoining vesicles. If they were the orifices, our objection lies with additional force, that such vesicles are not adapted for capillary attraction. If, too, these were the beginning of the lacteals, they should be scattered in much greater profusion than they are represented.

When the lacteals arise from the cavity, they run along the intestines in a longitudinal direction, freely anastomosing with each other; but the course of the contents of these vessels is opposite to that of the blood. This longitudinal direction is continued for some way,

and the lacteal then turns towards the mesentery, at an angle more or less acute. This lengthened course is probably designed for some peculiar purpose, probably for the animalisation of this newly introduced aliment. The vessel then proceeds to the glands interposed, in which they are lost, and from which similar vessels of larger size, but less numerous, emerge. These are styled glands of the first order, as in their course to the thoracic duct other glands are found. In the whole of their progress, numerous valves are interposed to prevent regurgitation; so that sometimes a lacteal, injected with quicksilver, resembles rather a string of silver beads than a continuous vessel.

In the course of the lacteals to the first order of glands there are few anastomoses; but before entering the glands they are minutely divided. It sometimes happens also, that a lacteal, when it arrives at a gland, will creep over it without being immersed in it; and, at others, a trunk will pass at a little distance. The former fact we do not remember being noticed in any author; but we have often seen it in injected lacteals. Both circumstances are important, as they show how the body may be occasionally nourished when all the glands are apparently obstructed. This also appears the object of nature, in offering different orders of glands, since it is equally necessary that the body should be nourished, and the new fluid elaborated, so that the vessel which escapes the first order may be immersed in some gland of the second, and one that has passed through the first may escape the second. The lacteals, however, which come off at the upper portion of the canal, pass through fewer glands than those from the ileon; and in old age many of the glands are obliterated. In the duodenum, perhaps, the more perfect chyle is separated; and in old persons the fluids are so highly animalised, that less precaution is necessary in preparing the new aliment. In the colon, the cœcum, and rectum, no lacteals have been discovered; though, from the numerous lymphatic glands in the mesocolon, lacteals must be found there. From the glands the lacteals pass on to the thoracic duct, and probably, in their course, anastomose with some of the lymphatics.

For the structure of the lacteals, see LYMPHÆ DUCTUS, and for the glands, LYMPHATIC GLANDS. See also DUCTUS THORACICUS; Monro de Venis Lymphaticis Valvulosis; Meckel de Finibus Venarum, &c.; Monro's three Treatises, and his Observations Anatomical and Physiological; Hewson's Experimental Inquiries, part ii.; Sheldon on the Absorbent System; Cruickshanks' Anatomy of the Absorbent System; Mascagni Vasorum Lymphaticorum Corporis Humani Historia.

The *chylifera vasa* are also called *venæ lacteæ*, because their valves are disposed as those of the veins are, and because, like them, they convey their contents from smaller to larger tubes.

Dr. Harvey discovered the lymphatics in the year 1616. In 1627, they were published by another author. Uzzalius discovered the lacteals in a dog, running to the mesenteric glands, in the year 1662. See Winslow's Anatomy.

LACTESCE'NTIA, (from *lactesco, to become milk*). The plants whose juices are milky. See LACTIFERUS.

LACTIC ACID. The lactic acid is found in whey when kept till the acetous fermentation has commenced. It was first shown to be a distinct acid by Scheele in the Stockholm Transactions for 1780. This acid will not crystallise, but in the open air deliquesces, and probably differs very little from the acetous. Its affinities are nearly the same. See AFFINITY.

LA'CTICA. See TYPHOS, and TYPHODES.

LACTICI'NIA, (from *lac, milk*). *Galactina, lactaria*; aliments prepared of milk. See ANIMELLÆ.

LACTI'FERI DU'CTUS, vel TU'BULI, (from *lac, milk*, and *fero, to bring*). LACTIFEROUS DUCTS or TUBES. The glandular body of the breast consists of a collection of membranous ducts, narrow at their origin, broad in the middle, and contracted again as they approach the papillæ, near which they form a circle of communication. See MAMMÆ.

LACTI'FERUS, (from the same). The term, though strictly applicable to plants which abound with milky juices, sometimes comprehends those which discharge white, red, or yellow fluids when wounded. The juices of the *euphorbium, papaver, asclepias, campanula*, and many of the plants in the first division of the class *syngenesia*, afford a white fluid; those of the *chelidonium, bocconia, sanguinaria*, and *cambogia*, a yellow; of the *rumex sanguineus* a red.

LA'CTIS FLOS. See APHROGALA.

LACTU'CA, (from the milky juice it produces on being wounded). LETTUCE; *marullium, eunuchion*, is a plant with slender but firm stalks, which yield, as well as the leaves, a milky juice. The flower consists of a number of flat flosculi, set in a small scaly cup, followed by short flat seeds, pointed at both ends, and winged with down. It is also the name of some species of chondrilla.

LACTU'CA ANGIN'A; *locusta, valeriana campestris inodora major, valerianella arvensis præcox humilis semine compresso, album olus, valeriana locusta* Lin. Sp. Pl. 47, α, LAMB'S-LETTUCE, and CORN-SALAD.

LACTU'CA HORTE'NSIS. *Lactuca sativa* Lin. Sp. Pl. 1118. GARDEN-LETTUCE.

LACTU'CA MARI'NA. (See FUCUS.) In general lettuces are very slightly nutritious, refrigerant, and diuretic: they should be eaten raw. They are easily digested, but afford very little nourishment. Their milky juice inspissated resembles opium; but, as a medicine, they are of no importance, though the seeds triturated with water are mucilaginous, and supposed to be useful in ardor urinæ.

LACTU'CA VIRO'SA. STRONG-SCENTED WILD LETTUCE; *lactuca virosa* Lin. Sp. Pl. 1119. The upper leaves only of this plant are jagged at the edges. In Britain it is indigenous; found in hedges, and by the sides of ditches; flowers in June; smells strongly of opium; and appears to participate in no small degree of its virtues. The narcotic power, noticed by Haller, resides in its milky juice. It is said to quench thirst, to be gently laxative and diaphoretic, powerfully diuretic, not disordering the stomach; but during its operation plentiful dilution is allowed. Out of twenty-four dropsical patients, twenty-three were cured with this medicine, according to the account of Dr. Colin of Vienna. It is given in the form of an extract, made from the expressed juice, and recommended in small doses; though in dropsies of long continuance, from visceral obstructions, it has been administered to the

quantity of half an ounce a day. This plant is, however, now neglected even in Vienna; Quarin and Plenciz have either spoken of it with faint praise or rejected it wholly. In this country it seems never to have been fairly tried.

LACTUCI'MINA, (from *lacteo, to suckle*; a disease of children while they suck). See APHTHÆ.

LACTU'MEN, (from *lac, milk*; because the eruption is covered with a white scab). See ACHOR.

LACTU'MINA, (from *lac, milk*). Little ulcers or crusty scabs in the skin, chiefly occurring in children at the breast.

LACU'NÆ, are excretory ducts in the vagina and glans, or their excretory ducts in the urethra. The term sometimes implies drain or furrow (from *lacus, a standing pool*).

LA'DA. See PIPER NIGRUM.

LA'DA CHILLI. See PIPER INDICUM.

LA'DANI EMPLA'STRUM. See EMPLASTRUM STOMACHICUM.

LA'DANUM, (from *ladon*, Arabic); *labdanum, cistus, cistus ladanifera, ledon Cretense.* The TRUE LADANIFEROUS SHRUB. *Cistus ladaniferus* Lin. Sp. Pl. 737, or rather *c. Creticus* Lin. Sp. Pl. 738. The gum labdanum is a resinous juice which exudes upon the leaves of the shrub, which grows plentifully in Arabia, Candia, and other parts of the Archipelago. The juice is collected during the summer with a kind of rake, which hath several leather thongs fixed to it instead of teeth, with which the leaves of the shrub are lightly brushed: the juice adhering to the thongs is separated with knives, and formed into regular masses for exportation. The plant grows on the sea shore; and much sand is consequently mixed with the gum.

The best sort is in dark coloured black masses, of the consistence of a plaster, which grows still softer when handled: the other is in long rolls curled up, harder than the former, but of a paler colour.

In general, this gum agrees in virtues with the balsam of Peru; but is rarely used except in external applications. It hath an agreeable smell, and a light, pungent, bitterish taste. Rectified spirit of wine dissolves nearly the whole of the pure gum; and water takes up much of its smell and taste. By distillation with water an essential oil arises, leaving behind it a brittle resin.

Heat quickly destroys the specific flavour of this gum, which was formerly given as a pectoral and astringent in catarrhal affections and dysenteries; but is now confined to external use in the form of a plaster (see EMPLASTRUM STOMACHICUM); or in fumigation. See Lewis's Materia Medica; Neumann's Chemistry.

LÆDE'NTIA, (from *lædo, to hurt*). See JUVANTIA.

LÆ'MOS, (from λαυω, *to feed*). See ŒSOPHAGUS.

LA'GAROS. LOOSE. An epithet for the right ventricle of the heart, from its looser texture. See COR.

LAGOCHEI'LOS, (from λαγος, *a hare*, and χειλος, *a lip*). See LABIA LEPORINA.

LA'GON. The FLANK.

LAGO'NDI. See BERIBERI.

LAGOPHTHA'LMIA, and LAGOPHTHA'LMUS, (from λαγος, *a hare*, οφθαλμος, *an eye*). See ECTROPIUM.

LAGOPO'DIUM, and LA'GOPUS, (from λαγος, *a hare*, and πους, *a foot*); *pes leporinus*; *trifolium arvense humile spicatum*; HARE'S-FOOT TREFOIL, or TRINITY-GRASS; *trifolium arvense* Lin. Sp. Pl. 1083; is a low spreading plant with narrow hairy leaves like a hare's-foot; the flowers are of a purple colour; the root perishes in winter. It grows amongst corn, and in fallow fields; flowers in June and July: the whole plant is reckoned astringent; but rarely used.

LA'GOPUS. HARE-FOOTED; the name of some species of trifolium. See ATTAGEN.

LAGO'STOMA, (from λαγος, and ςομα, *os, the mouth*). The HARE-LIP. See LABIA LEPORINA.

LA'LO. See BAOBAB and COUSCOUS.

LA'MAC. See GUM ARABICUM.

LAMBDACI'SMUS, (from λαμβδα, the Greek letter λ). A defect in speech, consisting in an inability to pronounce certain consonants, particularly L.

LAMBDOI'DES, *proræ sutura*, (from the Greek letter Λ, and ειδος, *likeness*). The name of the suture which runs betwixt the ossa occipitis and parietalia, called from its resemblance to the Greek letter Λ, *lambda*. It is also a name of the os hyoides.

LAMELLÆ. LITTLE LAMINÆ.

LA'MINA, (from ελαμινη, from ελαω, *to beat off*). A bone, or any substance resembling a thin plate of metal. The lap of the ear.

LA'MINA CRIBRO'SA. The cribriform lamella; the horizontal plate of the os ethmoides, through which the olfactory nerves pass.

LA'MINÆ SPONGIO'SÆ INFERIO'RES. See CONCHÆ NARIUM INFERIORES.

LA'MIUM, (from *lama, a ditch*, where it usually grows). DEAD NETTLE.

LA'MIUM A'LBUM, Lin. Sp. Pl. 809, *urtica mortua, Archangelica flore albo, urtica alba, urtica iners.* WHITE ARCHANGEL, or DEAD NETTLE.

LA'MIUM LUTE'UM; *galeopsis galeobdolon* Lin. Sp. Pl. 810, *galeopsis, leucas montana.* See GALEOBDOLON. YELLOW ARCHANGEL.

LA'MIUM MACULA'TUM, Lin. Sp. Pl. 809, *galeopsis lutea, milzadella, urtica lactea.* SPOTTED ARCHANGEL.

LA'MIUM RU'BRUM, also called *lamium purpureum fœtidum, galeopis*; *lamium purpureum* Lin. Sp. Pl. 808. RED ARCHANGEL, or SMALL DEAD NETTLE.

Infusions of these plants are commended in the fluor albus; but experience hath not supported the high character given them by popular report.

LA'MPATAM. See CHINA ORIENTALIS.

LAMPOU'RIS, (from λαμπω, *to shine*). See CICINDELA.

LA'MPSANA, (from λαπαζω, *to evacuate*; because it relaxes the bowels): *papillaris herba, napium, endivia erecta*, &c. DOG-CRESSES, NIPPLE-WORT, is a rough plant, bearing small yellow flosculous flowers; annual; growing wild in fields, and by the sides of the roads. It is one of the bitter lactescent plants, nearly similar in virtues to dandelion and endive. It hath been applied to ulcerations on the nipples, whence one of its names; but the present practice does not notice it. It is also a name of rapistrum.

LA'NA, (from *lanio, to tear*). WOOL. Burnt wool is escharotic.

LA'NA SU'CCIDA. SORDID or YOAKY (*unwashed*) WOOL; *aplytos* by the Greeks.

LANA'RIA, (from its woolly leaves). A name of the *lychnis sylvestris, saponaria*, and *verbascum.*

LANA'TUS, applied to leaves covered with a downy softness.

LANCET. A well known surgical instrument.

LA'NGUOR, (from λαγγεω, *to pine*). WEAKNESS OF MIND AND BODY.

LA'NGUOR PANNO'NICUS. See AMPHIMERINA HUNGARICA.

LANI'GERUS, (from *lana, wool,* and *gero, to bear*); an epithet of trees, which bear a woolly or downy substance, like what is contained in the catkins of the willow.

LA'NTANA. See VIBURNUM.

LANU'GO, (quasi *lanam ago, bearing wool*). DOWN. The seeds of plants surrounded by a downy substance which carries them in the air are termed *lanuginous,* or *pappous.* See CHNUS.

LACO'NICA CURA'TIO. A method of curing the gout by warm applications.

LA'PARA, (from λαπαζω, *to empty*). The FLANKS, which seldom appear distended.

LAPAROCE'LE, (from *lapara, the flanks,* and κηλη, *rupture*). A rupture through the side of the belly.

LA'PATHUM, (from λαπαζω, *to evacuate*; because it purges gently). DOCK.

LA'PATHUM ACU'TUM; *rumex, oxylapathum,* SHARP-POINTED DOCK; *rumex acutus* Lin. Sp. Pl. 478. This species, denominated from its sharp-pointed leaves, hath a bitter astringent taste, with no remarkable smell: its roots discover their astringency, both by the taste and by striking an inky blackness with a solution of vitriol; and this astringency is stronger in the present than in any other species. It is also slightly laxative; and its affinity with the rhubarb is equally conspicuous in a botanical and a medical view. Water takes up all their virtue, and in spring they are used with the greatest advantage.

LAPATHUM ALPI'NUM, *hippolapathum rotundifolium, lapathum montanum,* BASTARD MONK'S RHUBARB; *rumex alpinus* Lin. Sp. Pl. 480. The leaves are very broad like those of burdock; the root is externally brown, and intensely red within. It has, however, no peculiar virtue, except that it is supposed to be more active as a laxative than the other species.

LA'PATHUM AQUA'TICUM; *hydrolapathum, herba Britannica, lapathum palustre,* GREAT WATER-DOCK. The hydrolapathum of the Edinburgh Pharmacopœia is referred to the *rumex aquaticus, foliis cordatis acutis, floribus hermaphroditis, valvulis integerrimis nudis* Lin. Sp. Pl. 479. Muntingius has taken great pains to prove this species the herba britanica of the ancients; not from Britain, but from *britanicus,* a Teutonic word, which signifies a power to fasten loose teeth. Linnæus, however, gives the preference to a species which he styles "*Britannica*;" but Lobelius, with great reason, supposes it to be a species of cochlearia. The leaves of the rumex aquaticus are from two to three feet long, said to be laxative, but are very inconsiderably so: the roots are blackish on the outside; internally white, having a faint reddish tinge, which, in drying, changes in some parts to a yellowish or brown. It is found in most parts of England by river sides; and supposed to be a powerful antiscorbutic, if freely taken internally. A strong decoction of it is supposed to heal spreading ulcers in the mouth and tonsils; to cure spongy gums, &c. Boerhaave, from his own experience, commends it in scurvy, rheumatism, as well as in disorders of the skin, and from obstructed viscera. It is probably useful in flatulent complaints, and seems occasionally to assist digestion. Linnæus speaks highly of its utility.

The root dried and powdered is said to be antiseptic, useful in nervous disorders, an useful dentifrice, and a good substitute for the bark. Where the powder is unacceptable as an internal medicine, the decoction may be used: half a pound of the bark of the root is boiled in three to two quarts of water, and half a pint drank four times a day.

The bark of the root contains the greatest proportion of the active parts; but the whole plant resembles in its medical virtues the root. See Medical Musæum, vol. i. p. 46, &c. It seems, however, to be in no respect superior to other astringents, and inferior to many of this class.

LA'PATHUM HORTENSE; *rhabarbarum monachorum, patientia, hippolapathum,* MONKS' RHUBARB; *rumex patientia* Lin. Sp. Pl. 476. The stalk of this dock is red, and branched towards the top: the root is thick at the head, but soon divides into several branches of a brown colour outwardly, and a deep yellow within. Its virtues are similar to those of rhubarb, but it is less purgative and more astringent.

LA'PATHUM CHINE'NSE ORIENTA'LE. See RHABARBARUM.

LA'PATHUM RU'BRUM; *lapathum sanguineum, sanguis draconis herba,* BLOOD WORT; *rumex sanguineus* Lin. Sp. Pl. 476: the leaves are recommended as laxative, and the seeds for restraining uterine fluxes.

LA'PATHUM UNCTUO'SUM. See MERCURIALIS.

LA'PATHUM VU'LGARE; *anaxyris;* BROAD-LEAVED WILD DOCK, or COMMON DOCK; *rumex obtusifolius* Lin. Sp. Pl. 478. The leaves are large, roundish at the points, and sourish to the taste; the root bitter, astringent, and of a pale or yellowish colour. In France the root is most frequently used, and for the same purposes as the great water-dock. The largest grow in moist grounds, the smallest and most astringent in dry.

LAPIDES CANCRORUM. See CANCER.

LAPIDI'LLUM, or LAPIDI'LLUS, (from *lapis, a stone*). The name of a kind of spoon, formerly used to take out small stones and fragments from the bladder.

LAPI'LLI, (a dim. of *lapis, a stone*). See OCULI CANCRORUM.

LAPIS, λαας. A stone differs from an earth in consistence only; but there are some bodies, evidently stony, which contain no earth, as the diamond. The mineralogists who arranged fossils from their external forms of course distinguished *stony bodies,* but this arrangement has been superseded by the chemical systems of the moderns; and Wallerius is the last author of credit who has followed it. Stones are defined by that naturalist as hard bodies which cannot be cut with a knife, seldom rasped by a file, brittle, without ductility, insoluble in water or oil; but falling into small particles by exposure to air.

We need not pursue the qualities of stones farther than to mention Wallerius' subdivisions of this class of bodies into *calcareous, vitrescible, fusible,* and those *unaffected by fire.* The compound stones he styles *rocks.*

It will be obvious from the medical bodies styled "*stones,*" which follow, with what little accuracy the

term has been bestowed. It is, however, now disused in a very great degree, and will not be again revived. Wallerii Systema Mineralogicum. See MINERALOGY.

LA'PIS CALAMINARIS. See ZINCUM.

LA'PIS CALCAREUS. See CALX.

LA'PIS AMPELI'TES. CANAL COAL. See AMPELITES.

LA'PIS A'LCHERON. See BEZOAR BOVINUS.

LA'PIS BE'NZAHAN. See BEZOAR FOSSILE.

LA'PIS BEZO'AR, and PERUVIA'NUS. See BEZOAR ORIENTALIS and OCCIDENTALIS.

LA'PIS PORCI'NUS et MALACE'NSIS. See BEZOAR HYSTRICIS.

LA'PIS SEPTICUS. MELTED KALI.

LA'PIS NEPHRITICUS is a variety of the jaspis, the *jade* of Haüy iv. 368; of the Sciagraphia; and of Kirwan, vol. 1. p. 171. It is very hard, but melts in the focus of a mirror, to a transparent glass, with some air bubbles. Its specific gravity is about 3. Its look and touch greasy, and it contains about 0.38 of magnesia. It is celebrated for relieving the pains of gravel, and even of destroying the calculus. It has this effect, it is ridiculously supposed, when hung about the neck. Boot Gemmarum & Lapidum Historia, ii. 110.

LA'PPA, (απο τȣ λαϐειν, from its sticking to the clothes). See BARDANA MAJOR, MINOR, and ARCTIUM.

LAPPA'GO, (a dim. of *lappa*). See HIPPOPHÆS; sometimes the aparine. Blanchard.

LA'PPULA CANA'RIA, (from *lappa, burdock*). See CAUCALIS.

LAPSANA COMMUNIS, Lin. Sp. Pl. 1141. DOG CRESSES or NIPPLE-WORT. It is cooling, and somewhat astringent, but differing little from the endive or succory. As its name implies, it has been most commonly used as an application to sore nipples.

LAQUE'US, (from the Hebrew term *laquah*). See BROCHOS.

LAQUE'US GU'TTURIS. A malignant inflammation of the tonsils.

LA'RDUM, (from *lar, a chimney*, in which it is dried). BACON. See ALIMENT.

LA'RIX, (λαρος, *pleasant*, from its beautiful appearance). The LARCH-TREE; *pinus larix* Lin. Sp. Pl. 1420. The leaves are long and narrow, produced out of small tubercles, but fall in winter; the cones are small and oblong; the branches regular; common on the Alps, and in several parts of Germany: from it is produced the Venice turpentine. Raii Historia. It is also a name for several species of cedar. See CEDRUS.

LA'RVA, (from *lar, a shadow*, or *familiar spirit*). A MASK. When the face is burnt with gunpowder, &c. the application is a linen mask, moistened with proper remedies, and applied to the face: it is tied behind with six tapes. The appellation also of insects in the form of caterpillars, which is considered as their disguised state, since their perfect form, in which the species will be reproduced, is that of a butterfly.

LARYNGÆ'Æ ARTE'RIÆ, (from λαρυγξ, *the larynx*). See GUTTURALIS ARTERIA.

LARYNGOTO'MIA, (from λαρυγξ, *the throat*, and τεμνω, *to cut*). See TRACHEOTOMIA.

LA'RYNX, (a Greek primitive). See ASPERA ARTERIA.

LASCI'VUS, (from *lacio, to ensnare*). See CHOREA SANCTI VITI.

LA'SER. LASERPITIUM. See ASAFŒTIDA.

LASERPI'TIUM, (from the Arabic *lazar*); the name of the *oreoselinum*, and of the *silphium*, the *altiht* of the ancients.

LASERPI'TIUM VULGA'RE; *bupleuron arborescens salicis folio*; *gentiana alba*; *cervicaria nigra et alba*; *Libanotis*; *Thapsia*; *seseli Æthiopicum*; the LESSER HERB FRANKINCENSE; LASERWORT; *laserpitium latifolium* Lin. Sp. Pl. 356; is a plant found in Switzerland, and on the Pyrenean mountains. The root is supposed to be alexipharmic and uterine; the seeds are somewhat acrid. It flowers in August.

LASSITU'DO, (from *lasso, to weary*). MUSCULAR DEBILITY.

LA'TA LIGAME'NTA. The BROAD LIGAMENTS of the womb are properly only a duplicature of the peritonæum, reflecting from the loins to the uterus, and are long enough to admit it to hang down into the vagina.

LA'TER, (from *latus, broad*). A BRICK. Bricks are heated and applied to various parts of the body, or on cataplasms, to continue their heat. An oil is made by quenching hot bricks in olive oil until the whole is imbibed, which is afterwards drawn off. This oil is named *oleum lateritium, philosophorum, sapientiæ, perfecti magisterii, divinum, benedictum*; but is now deservedly neglected.

LATERA'LES MUSCULUS, (from *latus, a side*). See MASSETER.

LATERA'LIS MUSCULUS NA'SI. See OBLIQUUS NASI.

LATERA'LES PROCESSUS OSSIS SPHENOIDES. See SPHENOIDES OS.

LATERA'LIA, (from *latus, a side*). LIGAMENTA. On the body of the os humeri there are two particular ligaments, which may be called *lateral* or *intermuscular*: they are long, flat, thin, narrow, fixed on one edge along the two lower thirds of the bone, and reaching to both condyles. They are braced pretty tight, and are very narrow at the upper part, but broader towards the condyles, from whence they are expanded like a goose's foot, and form the brachio-cubital and brachio-radial ligaments.

LATERI'TIUM OLEUM. See LATER.

LATERI'TIUM SEDIMENTUM. A SEDIMENT IN THE URINE, resembling *brick-dust*, observed after the crises of fevers, particularly intermittents; and the most certain mark of a salutary termination of a gouty paroxysm.

LATHY'RIS, (from λαθω, *to forget*, as affecting the memory). See CATAPUTIA MINOR, OCHRUS.

LATI'SSIMUS, *dorsi musculus*, (from *latus, broad*). ANISCALPTOR, because it bends the arm backward. This muscle rises from the fascia lumborum at its lower part; and higher, from the sixth, seventh, or eighth vertebræ. At its anterior part, it rises from the ninth, tenth, eleventh, and twelfth ribs: its fibres run round the posterior and inferior angle of the scapula; and its tendon is inserted into the posterior ridge of the groove of the biceps.

LAUCA'NIA, (from λαυω, *to receive*). See ŒSOPHAGUS.

LAU'DANUM, (from *laus*, as worthy of praise); generally confined to preparations of opium. See OPIUM.

LAUREOLA FŒ'MINA, (a diminutive of *laurus, laurel*; which it resembles); *mezerion, chamælæa, thymelæa folio deciduo*, MEZEREON, SPURGE-OLIVE, WIDOW-WAIL; *Daphne mezereum* Lin. Sp. Pl. 509; is a small tree, or bush, with pale purplish or white flowers, followed by bay-shaped leaves; flowers in January; the berries, called *cocci cnidii*, ripen in August and September. This plant, especially when fresh, if retained in the mouth, and chewed a little, is so very acrid as to occasion violent heat and inflammation in the fauces and throat. The berries have the same effects, and when swallowed prove a most destructive poison. The bark and berries have been long applied externally, in different forms, to old and ill-conditioned sores. The former is strongly recommended in France as an application to the skin, producing, by proper management, a serous discharge, without blistering, which may be continued as a perpetual blister, with less pain and inconvenience than the cantharides. It has been used as a seton in inflammations of the eyes. The recent bark, about three-quarters of an inch broad, and one inch long, after macerating a little time in vinegar, is applied for this purpose to the skin; over which is placed an ivy or plantain leaf; and the application is renewed night and morning till it bring on a serous discharge. A renewal once in twenty-four hours is afterwards sufficient to continue it.

A decoction of the cortical part of the fresh roots is a powerful remedy in many venereal symptoms, especially when assisted by the hydrargyrus muriatus. The best grows in a light soil. An ounce of the fresh-gathered bark must be boiled in twelve pints of water to eight; and at the end of the boiling an ounce of liquorice-root added: of the strained liquor half a pint may be drank four times a day. Dr. Russel strongly recommends the use of this decoction, particularly when nocturnal pains are violent in the syphilis; and for washing those nodes which proceed from a thickening of the membrane of the bones. See Lewis's Materia Medica; London Medical Observations and Inquiries, vol. iii. p. 189, &c.

It is said to cure the remains of the lues venerea, where mercury has failed. Dr. Cullen and Dr. Home found it not only cure schirrous tumours, and obstinate ulcers, which remain after the venereal disease, but that it sometimes healed schirri from other causes. In cutaneous affections, in chronic rheumatisms, and palsy, it has sometimes been successful. In the case of a difficulty of swallowing, thought to be occasioned by a paralytic affection, Dr. Withering directed a thin slice of this root to be chewed as often as the woman could bear it. Though the complaint had been of three years standing, she was relieved within a few weeks.

LAURE'OLA MAS, *chamædaphne, eupetalon, thymelæa, laurifolia semper-virens, daphnoides*, SPURGE LAUREL, *daphne laureola* Lin. Sp. Pl. 510; is a small shrub: its leaves are less than those of the laurel, and the flowers consist of one leaf, which is greenish, and appear in April; the berries open in September. The leaves, berries, and bark, are highly acrid, burning and inflaming the mouth: if swallowed, they vomit and purge. See Raii Historia; Lewis's Materia Medica.

LAURIFO'LIA MAGELLA'NICA, (from *laurus*, and *folium, a leaf*; because its leaves resemble those of the laurel). See WINTERANUS CORTEX.

LAURI'NUM OLEUM, (from *laurus*). See LAURUS VULGARIS.

LAU'RO-CAMPHORI'FERA, (from *laurus*, *camphora*, and *fero*). The CAMPHOR-BEARING LAUREL, or BAY-TREE. See CAMPHORA.

LAU'RO-CERA'SUS, (from *laurus*, and *cerasus, cherry*; because it bears a cherry, and has leaves like the laurel); *padus-cerasus, cerasus avium nigra, cerasus racemosa fructu non eduli folio laurino, or trapezuntina*, BAY-CHERRY, LAUREL-CHERRY, or CHERRY-BAY, *prunus-lauro-cerasus* Lin. Sp. Pl. 678.

The root of this tree or shrub is large, rough, and furnished with many fibres. The branches are woody, numerous, brown on the outside, and white within. The leaves are large, fleshy, oblong, shining, pointed at both ends, and slightly serrated at the edges: their upper surface is smooth, and of a light dark green colour; the under side is of a light green, rough, strongly marked with fibres. The flowers appear towards the superior part of the branches; are pentapetalous, in five-leaved cups, followed by clusters of berries resembling cherries, and containing an oblong stone. It flowers in May, and ripens its fruit in September.

The leaves have a bitter taste, with a flavour resembling that of bitter almonds, or the kernels of peaches and apricots, which is communicated to water and alcohol by infusion or distillation. These preparations are so suddenly deleterious, either in the stomach or rectum, or applied to wounds, as sometimes to occasion instant death. Dr. Mead relates, that a few spoonfuls of laurel water killed a large dog before it could be supposed to have reached the stomach; and it acts by destroying the mobility of the nervous power without exciting inflammation, or producing any sensible change in the state of the fluids. Like all other powerful sedatives, it produces violent spasmodic motions of the whole body; though, when in a concentrated state, it is often immediately fatal without such previous symptoms.

As it evidently lessens or destroys the irritability of the nervous system, increasing at the same time, according to Wurtzer, the action, he thinks it useful in great nervous irritability, particularly where from this cause the heart is affected with palpitations.

On dissection, no uncommon appearances are observed in the stomach or intestines; the arteries are found empty, and the veins turgid with blood. The sinuses of the brain, and the veins of the pia-mater, are distended; the effect rather of the convulsions than the particular properties of the poison. Less than two spoonfuls of the first runnings of the simple water of laurel leaves killed, within a short time, a healthy young woman, previously producing violent convulsions. Various have been the speculations respecting the action of this poison. It has been supposed to affect exclusively the vital functions, as it produces death independent of sleep; but the brain is the great source of every power, and we are not yet prepared to say, that different portions of it may be affected, to any considerable degree, without an affection of the whole; or that functions of any kind are connected with a determined part of the organ. The disputes, whether it coagulates or dissolves the blood, are still more trifling; for the extravasations observed are very certainly owing to a loss of tone in the vessels. It has been employed as a medicine in the cure of intermittents; in resolving schirrous tu-

mours; and in phthisis pulmonalis; but neither its dose nor its powers are so properly ascertained as to enable us to speak of it with precision; and its deleterious effects are so striking, as to deter us from even the most cautious trial.

Although the poison of laurel appears to consist in the essential oil which it affords in distillation, yet it is suspected that an infusion of the leaves is also injurious. Even the flavour communicated in some galenical and culinary processes has been dreaded, though without reason. The mucilage dissolved with the essential oil seems a sufficient guard.

It hath been generally observed, that if the animals that had swallowed this poison vomited it up readily, they recovered; but its action seems too speedy on the human race to hope for relief by any means. See VENENUM; Wilmer on Poisonous Vegetables; and Cullen's Materia Medica.

LAU'RUS ALEXANDRI'NA, (from *laus*, *praise*; as it was the reward of victors). *Hippoglossum, epiglossum, daphne, diglossum, epiglottis, ruscus latifolius, bonefacia, coracobotane gazar, uvularia; ruscus hippoglossum* Lin. Sp. Pl. 1474, LAUREL OF ALEXANDRIA. The root of this plant is knotted at the head; the stalks tough and pliant; the leaves placed alternately; on the middle of the back of each grows a small mossy flower, succeeded by a red berry. It grows in the mountainous part of Italy and Hungary, and is said to be diuretic.

LAU'RUS VULGA'RIS, *diahexapela, diahexapte*, COMMON LAUREL, or BAY-TREE, *laurus nobilis* Lin. Sp. Pl. 529; is an evergreen, with oblong, stiff, smooth leaves, flowers of a palish yellow colour, followed by oblong dry berries, containing, under a thin black skin, an horny shell, within which are lodged two dark brownish seeds joined together. It is a native of the south of Europe, and common in our gardens. The flowers appear in April or May, the berries ripen in September; but those which are used in the shops are generally the fruit of the laurus Alexandrina, from the Mediterranean.

The leaves have a light agreeable smell, and a weak aromatic rough taste. In distillation with water they yield a small quantity of a very fragrant essential oil; and with rectified spirit a moderately warm pungent extract. They are, however, rarely employed except in an enema, and the decoctum pro fomento, Pharm. London.; though sometimes the infusion is drank as tea. The berries are stronger than the leaves, and yield more essential oil: the expressed oil is fluid and insipid; but when the berries are ripe and boiled in water they afford a thick oil of a yellowish green colour, the oil of bay, which is bitter, acrid, and an useful application in palsies, or nervous disorders. The oil of bay-berries is called *daphnelæon* and *oleum laurinum*. The berries are an ingredient in the emplastrum cumini; and Bergius thinks them stomachic, resolvent, promoters of the menses, urine, and perspiration, recommending them, however, only in hysteria. They have long been thought to act with peculiar power on the uterine system, and improper to be used during pregnancy. The essential oil of the berries may be taken in doses of from one to five or six drops on sugar, mixed with mucilage, or in the spirit of wine.

LAU'RUS CA'SSIA. See FOLIUM.

LAU'RUS RO'SEA. See NERION.

LAVA'CRA, (from *lavo*, *to wash*). WASHES, designed to improve the skin.

LAVE'NDULA, (from *lavando*, *washing*; because it was used in baths). LAVENDER, *stœchas*.

LAVE'NDULA LATIFO'LIA, *nardus Italica, spica mas, pseudonardus aspic*, COMMON BROAD-LEAVED LAVENDER, or SPIKE LAVENDER, *lavendula spica* Lin. Sp. Pl. 800. β, is a shrubby plant, with its leaves set in pairs, the stalks square while young, and round when old; on the tops of the branches are naked spikes of blueish, sometimes of white, flowers; and this species hath by much the larger spike, though the flowers are less. Of all the verticilated plants, this alone bears a spike, and from hence its trivial name is taken. It is common in the southern parts of Europe; stronger both in smell and taste than the narrow-leaved; and by distillation yields near twice the quantity of essential oil, which is both heavier and more pungent than that from the other kind, but of a less pleasing flavour. The water and spirituous extracts from each sort are nearly alike.

In the south of France, where both species are indigenous, the broad-leaved is only used for obtaining the oil called *oil of spike*, named *daveredon*, and *oil of aspic*, which, if genuine, is limpid, though sometimes yellowish. The flowers contain almost all the oil, and should be macerated some days before they are distilled. This oil is adulterated with oil of turpentine, and with rectified spirit of wine; but, if genuine, it dissolves sandarac, and copal; and is the best known solvent of amber.

LAVE'NDULA ANGUSTIFO'LIA, *spica fœmina*, and *vulgaris, pseudo-nardus*, COMMON LAVENDER, SPIKE, or NARROW-LEAVED LAVENDER, *lavendula spica* Lin. Sp. Pl. 800. α. The leaves of this variety are very narrow and somewhat hoary; native in the southern parts of Europe, but growing in our gardens vigorously. The flowers appear in June or July, are very fragrant and agreeable, bitterish, and pungent; sometimes used as a mild stimulant and corroborant, in vertigos, palsies, tremors, and other debilities of the nervous system. Dr. Cullen asserts that, both externally or internally, it is a powerful stimulant of the nervous system, chiefly exciting the nerves of the animal functions, seldom those of the vital. It will consequently be safer in palsies than the warmer aromatics, if not given in a spirituous menstruum, or with more heating aromatics.

Water extracts by infusion near all the virtue both of the flowers and leaves; but the flowers are greatly superior: they afford the most oil when ready to fall off spontaneously and the seeds to appear.

The essential oil when fresh, and from flowers in perfection, is of a pale yellow colour, of a pungent taste, very fragrant, and of the peculiar smell admired in the flowers. These may be separated from the plant by drying, and then gently beating them; they should be immediately committed to the still, and the process conducted with a gentle heat. The oil is given internally as a cordial, from one drop to five, and used as a stimulant in palsies, lethargies, and the various debilities of the nervous system, particularly of the animal functions. Murray forbids it when any danger from stimulating the sanguiferous system exists. If soft paper moistened with it is applied to any part infested

with cutaneous insects, as the pediculi inguinales, they will soon be destroyed.

Rectified spirit extracts the oil most completely, and in distillation carries some of the odoriferous part with it. The *simple spirit*, according to the London college, is prepared by adding a gallon of proof spirit to a pound and half of the fresh flowers, and distilling five pints. The formula for the *compound spirit* follows: ℞. spt. lavendulæ m. libras tres, rorismarin. m. ℔i. corticis cinnamomi contusi, nucis moschatæ contusæ singulorum, p. unciam dimidiam; santali rubri, p. ℥i. Digere per dies decem et cola. Ph. Lond. 1788. This used to be called the *English palsydrop*, or *English drop*. The dose is from ten drops to a tea-spoonful. See Lewis's Materia Medica.

LAVAPRA'TAS. See MAMANGA FRUTEX.

LA'VER, (from *lavo, to wash*; plants generally found in streams by which they are washed). A name for the *becabunga, sium, nasturtium aquaticum*; but more commonly applied in the west to the sea-weed; *ulva umbilicalis* Lin. Sp. Pl. 1633. See ALIMENT.

LEVIPE'DIUM, (from *lavo, to wash*, and *pes, the foot*). See PEDILUVIUM.

LA'XA CHIMO'LEA. A PURGING MEDICINE, principally designed for the venereal disease. Paracelsus. Johnson says it is a salt which grows on stones, resembling in appearance the anatron, or usnea lapidea, *lichen chalybeiformis* Lin. Sp. Pl. 1623.

LAXA'TOR MEMBRA'NÆ TY'MPANI, (from *laxo, to relax*). This muscle arises from the upper part of the bone, above the membrana tympani, runs inward, and is inserted into the thick process of the malleus; *mallei musculus internus* Winslow.

LAXA'TOR EXTE'RNUS; *externus tympani auris*; rises in the upper sinus of the auditory passage, and is inserted in the membrana tympani, with a slender tendon to the malleus, drawing the membrane upward and outward.

LAZARETTO. See PESTIS.

LA'ZARI MO'RBUS, or MA'LUM. The DISEASE OF LAZARUS. See ELEPHANTIASIS.

LEAVEN, strictly speaking, is dough which has attained the acetous fermentation. It sometimes, however, means beer in a state of fermentation, when the air is entangled so as to form barm or yeast. See FERMENTUM.

LECHE'NEON. See CEREBRUM.

LECTUA'LIS MO'RBUS, (from *lectus, a bed*). A disease which confines the patient to his bed.

LE'CTULI, (from *lectus*). COUCHES, stuffed with proper ingredients coarsely powdered, whose qualities were supposed to affect the patient laid on them.

LE'CTULUS. See EPITHEMA.

LE'DON CRETE'NSE. See LADANUM.

LE'DUM PA'LUSTRE, Lin. Sp. Pl. 561; *cistus ledon, rosmarinum sylvestre*, MARSH CISTUS, or WILD ROSEMARY, rises with a slender shrubby stalk about two feet high, dividing into many slender branches, garnished with narrow leaves, not much unlike those of the heath. The flowers are produced in small clusters at the end of the branches, shaped like those of the strawberry-tree, but spreading wider at the top, of a reddish colour, and succeeded by seed-vessels, filled with small seeds which ripen in autumn. It grows naturally upon bogs and mosses in many parts of Yorkshire, Cheshire, and Lancashire; hath a strong though fragrant smell, and is bitter to the taste. It is considered to be possessed of sedative powers, from its narcotic and inebriating qualities; and has been said, without any previous evacuation by emetics and purgatives, alone to cure the dysentery. See Linnæi Materia Medica, and Richter's Observations.

LEGUMINO'SA. See FABAGO.

LEGU'MEN, (from *lego, to gather*; usually gathered by the hand). The seeds of the leguminous plants are called *pulse*, as pease, beans, &c. Ray calls all those plants *leguminous* which have a papilionaceous flower. See FARINACEA.

LEIO'PODES, (from λειος, *plain*, and πους, *a foot*). EVEN-FOOTED; *plancus*, SPLAY-FOOT. Those the soles of whose feet are without the usual hollow part.

LEIPHÆ'MOI, (from λειπω, *to be deficient*, and αἱμα, *blood*). Those who have too little blood.

LEIPODE'RMOS, (from λειπω, and δερμα, *the skin*). See PREPUTIUM.

LEIPOPSY'CHIA, (from λειπω, and ψυχη, *the soul or life*). A FAINTING FIT, LANGUOR; synonymous with adynamia.

LEIPOTHY'MIA, (from λειπω, and θυμος, *the mind*). A FAINTING FIT, a SWOONING. See LIPOTHYMIA.

LEIPY'RIA, (from λειπω, *to leave*, and πυρ, *heat*). A dangerous species of tertian, in which the internal are scorched, whilst the external parts are cold.

LEMNIA TE'RRA. EARTH OF LEMNOS, the dried pulp of the adansonia baobab. See BAOBAB.

LE'MPNIAS CA'LCIS. SCALES OF BRASS, which separate when beat with a hammer.

LE'NOS, (from ληναιω, *to bruise*). Hollow troughs where grapes are bruised. In surgery, a channel or excavation, made in some machines for extending and reducing fractured bones. Hippocrates. See CEREBRUM.

LENS, (*è lentore, viscidity*; from their glutinous quality). LENTILS, *phace*, or *phacos*, are shaped like tares, but less, and are a flatulent indigestible food; *ervum lens* Lin. Sp. Pl. 1039. It is not now used in medicine. Lens is also the appellation of the crystalline humour of the eye, then denominated from its shape. See OCULUS.

LE'NTA FE'BRIS. SLOW FEVER. See HECTICA.

LENTI'CULARIA, (from *lenticula, a lentil*). See MILLEFOLIUM.

LENTI'CULÆ, LENTI'GENES, (dim. from *lens*). A SMALLER SPECIES OF LENTILS, and FRECKLES on the face or breast. See EPHELIDES, EFFILA, and also PETECHIA.

LENTI'CULA PALU'STRIS. DUCK-MEAT, *lens palustris, aquatica, lenticularia minor, lemna minor* Lin. Sp. Pl. 1376; grows on the surface of stagnant water, and is in appearance simple and foliaceous; its roots slender, capillaceous, and pellucid. Externally it is supposed to be cooling.

LENTI'CULA PALU'STRIS MA'JOR, and AQUA'MICA TRISU'LCA; *hederula aquatica, lemna trisulca* Lin. Sp. Pl. 1376; its qualities are similar to the former.

LENTICULA'RE. A LENTICULAR; A RUGINE.

LENTICULA'RE OS, (from *lenticula, lentil*). A name of the fourth bone in the first row of the wrist; *os orbiculare*, and *pisiforme*.

The os lenticulare, or orbiculare, of the ear, Dr. Hunter thinks, is part of the incus, as its extremities stand upon a narrow neck, and are soon broken off: in the adult it is one continued bone with the incus.

LENTICULA'RES, GLA'NDULÆ, (from the same); small glands of the intestines; so called from their size. See PETECHIÆ.

LENTI'GINES, (from *lens, a lentil*). FRECKLES. See EPHELIDES.

LENTI'SCUS, (from *lentisco*; from the clamminess of its juice). *Mastiche*; the LENTISK or MASTICH-TREE, *pistachia lentiscus* Lin. Sp. Pl. 1455, is an evergreen, with soft branches hanging downwards, and small stiff leaves pointed at both ends. Some trees produce reddish flowers, others blackish berries with white kernels: each is a native in the southern parts of Europe, but bear the usual winters of our climate. We chiefly receive it from Aleppo and Smyrna, but in Turkey, where it grows, plantations are made for the sake of the resinous gum, called *mastich*; though the Indian mastic is called *moll*. It is obtained from incisions made in the trunks, and flows in drops in August. The wood is sometimes brought from Marseilles, in thick knotty pieces, covered with a brownish bark; internally of a whitish or a pale yellowish colour.

The wood is mildly balsamic and astringent; the small tough sprigs are stronger than the larger ones, and the bark is more so than either. No part is of much value in medicine; though a decoction of the wood hath obtained the name of *aurum potabile*. The wood itself has been highly extolled in dyspepsia, gout, hæmorrhagies, and dysentery. The resin, usually called *gum mastich*, by means of gum-arabic, is rendered miscible with water, and supposed to possess the virtues of turpentine, and is sometimes used as a masticatory. See Lewis's Materia Medica; Neumann's Chemical Works.

LENTI'SCUS FOLIIS SPINOSIS, FLORE SPICATO, &c. See BONDUCH INDORUM.

LE'NTOR, (from *lentus, viscid*). A VISCIDITY or SIZYNESS; in the humoral pathology, the supposed source of many diseases. See MORBI FLUIDORUM.

LE'O, (from the Hebrew *levia*). The LION, the name of several preparations of the Spagirists, of the leprosy, &c.

LEONI'NA LE'PRA, or LEONTIA'SIS, or LEO'NTION, (from *leo, the lion*; because lions are said to be subject to it). A variety of the ELEPHANTIASIS.

LEO'NIS OS and O'RA SÆ'VA; from its prickly mouth. See ANTIRRHINUM.

LEO'NTICE VE'TERUM. See CACALIA.

LEO'NTODON, (from λεων, *the lion*, and οδους, *a tooth*). See DENS LEONIS.

LEONTOPO'DIUM, (from λεων, and πους, *a foot*; from its supposed resemblance); *filago Alpina, leontopodium majus, gnaphalium Alpinum*, LION'S FOOT, *filago leontipodium* Lin. Sp. Pl. 1312, grows on hills, and flowers in July. The bruised roots were once famed for removing the blackness of bruises in the skin.

LEONU'RUS, (from λεων, *a lion*, and ουρα, *a tail*). See CARDIACA.

LEPIDI'UM, (from λεπις, *a scale*; from its use in cleansing the skin from scales). *Piperitis, raphanus sylvestris, iberis, Dionysius*, POOR MAN'S PEPPER, PEPPER-WORT, DITTANDER, *lepidium latifolium* Lin. Sp. Pl. 899, is a plant with undivided leaves, small white flowers on the tops of the stalks, followed by heart-shaped pods; perennial, growing wild on the sides of rivers and shady places: it flowers in June and July. The whole plant is pungent like pepper.

LEPIDI'UM A'RABIS. See DRABA.

LEPIDI'UM GRAMI'NEO FOLIO, *Iberis cardamantica, agriocardimum*. SCIATICA CRESSES; *lepidium iberis* Lin. Sp. Pl. 900. This species hath long narrow leaves; the lower of which are on long pedicles and serrated; the upper entire, without pedicles; annual, and raised in our gardens for culinary use.

All these plants, when fresh gathered, have a quick, penetrating, pungent taste, though almost dissipated in drying; it is retained in the expressed juice; extracted by water and by spirit; and rises with both in distillation. In external applications they have been used against the sciatica; internally in intermittents, chronic rheumatism, and palsy.

LEPIDI'UM MONSPELLIACUM. See PLUMBAGO.

LEPIDOCARPODE'NDRON, (from λεπις, *scale*, καρπος, *fruit*, and δενδρον, *a tree*; because its calyx is scaly). All the species are natives of the Cape of Good Hope, near Table Mountain, and arranged by Linnæus under the genus *leucandron*; but neither seems entitled to attention in a medicinal view; so that we need not distinguish them more minutely.

LEPIDOI'DES SUTU'RA, (from λεπις, *a scale*, and ειδος, *likeness*). See SUTURÆ.

LEPIDOSARCO'MA, (λεπις, *a scale*, and σαρξ, *flesh*). A sarcomatous and scaly tumour of the mouth. Severinus.

LEPORI'NA LA'BRA. See LABIA LEPORINA.

LEPORI'NUM RO'STRUM, (from *lepus*, and *rostrum, a beak*). The piece of flesh often seen between the divisions of the hare-lip.

LE'PRA, (from λεπις, *a scale*). The LEPROSY. See ALPHUS.

The leprosy is a chronical disease; in warm climates infectious, but not evidently so in cold countries; though its infectious nature was formerly suspected, and the unhappy victims separated in distinct establishments from the rest of mankind. Dr. Cullen places this disease in the class *cachexiæ*, and order *impetigines*; defining it, the skin rough, with white, furfuraceous, chapped eschars, sometimes moist underneath, and pruriginous. Of the only species known, Sauvages notes six varieties; but the *lepra Græcorum* and the *lepra ichthyosis* only occur in this country.

The leprosy of the Greeks has been very often confounded with the lepra Arabum, which, however, is a very different disease, and already noticed in the article ELEPHANTIASIS, q. v. The latter appears to be rather a disease of the constitution, and affects the hair, not only of the head, but over the whole body; attended with deep ulcerations, loss of sensation in the swollen parts, and fœtid sweats. The lepra, on the contrary, seems to be an affection of the cutis vera only, whose papulæ are either enlarged, or tumours of a different nature are formed on it, which press outwards on the cuticle, and occasion scaly indurations on the surface.

The first appearance of leprosy is discovered by reddish shining elevations on the skin, often on those parts where the bone is covered only by the integuments, as the skin, on the outside of the fore arm. A thin white scale is soon formed on the top of these elevations, which quickly flatten, while their bases enlarge. The enlargement of their bases continues; but the separate patches constantly preserve a roundish form, though, when they approach and unite, it is generally elliptical. When the scales either fall off by the rubbing of the linen, or are separated by violence, they are soon reproduced; but the surface below appears red and wrinkled, though the rugæ do not resemble those of the cuticle, nor are they continuations of the furrows in the contiguous sound surface. Lepra does not appear to be peculiarly the disease of the hairy scalp, though we have generally found traces of it in this part of the body, when it has before appeared on the surface. At the edge of the hair on the forehead it often first attacks, though more frequently the leg, just below the knee, or the fore arm; rising gradually to the trunk.

The stiffness of the skin is troublesome, and the itching, which is extremely distressing in hot climates, is, even in these, troublesome while the patient is warm in bed; but the general health seems in no respect affected, and nature, without assistance, will not relieve. The signs of amendment are the diminution of the ridge round the patch, the scales not reproduced when rubbed off, and the appearance of a red more natural cuticle in the centre. All the patches at the same time begin to assume a more healthy look.

The lepra is said to be hereditary. We own that we have not found it so; but Dr. Willan thinks a predisposition to it may be transmitted from parents. In more than one family where there was this *tendency*, those in whom it appeared on the surface, and who were relieved by medicine, lived long afterwards in a healthy state, while those in whom it did not appear died young, apparently consumptive. In a constitution of this kind we once observed the phthisis from calculus. The diseases, however, in these cases were not perhaps strictly leprous, though nearly resembling it. In one instance mania supervened on the disappearance of a true leprosy.

Dr. Willan thinks that a slow pulse, or a languid circulation, with what may be expected to attend them, a deficiency of perspiration, constitutes a fundamental part of the predisposition. We cannot say that we have seen the disease most frequently in such constitutions, nor does our recollection furnish any particular habits in which it has appeared most frequent. An indulgence in spirituous liquors has appeared a remote cause; but we have not seen any peculiar diet contribute to it. Those who work among dry powders are said to be subject to it; but we have only seen what resembles it in those who follow one occupation of this kind, viz. millers. Wheat, when ground, rapidly absorbs moisture, and every part of a miller's house is dry. The hands of the labourers are consequently often chopped, sometimes covered with eruptions; but the disease seemingly differs from true lepra. Bricklayers' labourers suffer from lime, and laboratory men from acids; in neither, however, is this disease peculiarly prevalent.

Lepra is a complaint of singular obstinacy, and often resists the best concerted plans. As it appears not to be influenced by diet or situation, and not to be hereditary, it may seem to be merely local; and the ancient physicians, after bleeding and purging, applied the most acrid substances from the animal, vegetable, and mineral kingdom, to cure it. These undoubtedly remove the scales, but they are soon reproduced; for the cause is beyond the reach of applications to the surface only. When internal medicines have in part removed the cause, liniments of tar, sometimes with sulphur, at others with kali or alum, are often useful. The warm bath is a pleasant and salutary application, whose effects extend beyond the surface; but which also relax the hardened scales, and immediately remove part of the inconvenience, the stiffness. The sulphur waters of Harrowgate and Moffat combine both views, and are highly useful. The Harrowgate water may be easily imitated for this purpose by uniting the hepar sulphuris with sea-salt.

The Bath waters combine the good effects of a warm bath with an internal medicine which excites the action of the extreme vessels, an object of considerable importance in the cure of lepra. The minutes of the Bath hospital, on this subject, published by Dr. Falconer, give a very favourable prospect of its advantages. Sea water, used as a bath, both warm and cold, has been equally useful, especially if, like the Bath waters, it is taken internally. Other external preparations have been chiefly mercurial, as a solution of the hydrargyrus muriatus, and the unguentum hydrargyri nitrati of the London dispensatory. Dr. Willan does not think these applications preferable to the tar ointment.

Though it is admitted that the lepra is most commonly a topical disease, yet, from the thickness of the scales, and from the chief seat being in the cutis vera, topical remedies alone scarcely affect it. Medicines, therefore, which excite the action of the cutaneous vessels are chiefly of service. The principal of these is mercury and antimony. The most powerful mercurial is undoubtedly the hydrargyrus muriatus, which often succeeds. It is the active ingredient of Spilsbury's drops, which are highly celebrated; and the same remedy would be more celebrated in regular practice, could the scientific physician condescend to adopt the pompous boasts of the empyric, or was the same confidence placed in the man of experience and judgment, as in the pretending illiterate quack. Other mercurials are also useful, but perhaps not in an equal degree. Antimonials alone will not cure the complaint; but with calomel, as in the pill of Dr. Plummer, they will often succeed, if the calomel be not triturated too long with the sulphur auratum. We have usually directed it to be added to the mass, after the other ingredients were united. The advantages of these medicines are assisted by the warm diaphoretics of the vegetable kingdom, as the mezereon, the elm bark, the sarsaparilla, the guaiacum, and sassafras. We place them in the order of their activity, for the mezereon is most effectual; but combining them, as in the Lisbon diet drink, renders them more useful.

The mineral acids have lately succeeded in removing slighter kinds of this disease, and we think we have found them more effectual than the aqua kali puri recommended by Dr. Willan. The tincture of cantharides is better adapted to relieve tettery eruptions than lepra: in the latter we believe it very generally fails. Every plan of cure we have found greatly assisted by a

milk and vegetable diet, interposing, every two or three days, a purgative of neutral salts. This method also most effectually prevents a relapse.

We need scarcely mention many other remedies recommended for this purpose, as the water-dock, if this be really the herba Britannica; the dulcamara, which seems to have succeeded with Dr. Crichton; the cucumbers, recommended by Willis; the roots of hellebore, particularly the black hellebore, used by the ancients, and particularly noticed by Oribasius. The flesh of vipers, or of chicken nourished by it, will scarcely at this time be trusted, though highly commended by the same author.

See Aretæus, iv. 13; Lorry de Morbis Cutaneis; Mercurialis de Morbis Cutis; Falconer in the Memoirs of the Medical Society of London; London Medical Transactions, vol. i. and ii.; Medical Observations and Inquiries, vol. i. p. 201; London Medical Journal, vol. i. p. 94; Willan on the Diseases of the Skin, order ii. vol. i. p. 112, &c.

LE'PRA A'RABUM; usually considered as synonymous with the ELEPHANTIASIS, q.v. See also LEPRA.

LE'PRA GRÆCO'RUM, *alba, nigra,* and *impetigo* of Celsus. See LEPRA.

LE'PRA ICHTHYOSIS. FISHY LEPROSY; *albaras nigra* of Avicenna. This term is often applied by Avicenna to elephantiasis, and we think, with Dr. Willan, that the albaras nigra of the Arabians, and the black morphea of the Greeks, are varieties only of elephantiasis. See ALPHOS.

The lepra ichthyosis is a more general affection of the whole skin, while the lepra græcorum appears in patches. The name is derived from the imbricated situation of the scales, which resemble those of a fish; but round the elbow and knee they are round, prominent, and small. The neck of the scales is small, but they are flatter as they rise, and often very hard and sharp, rendering the parts hard and brittle. On the inside of the arms and thighs, in the bending of the knees and elbows, and wherever the skin is thin, there are no scales. The scales are sometimes intersected with white furrows, and the surface is often broken by inflamed and painful boils.

If the scales are picked off in warm water they do not again return, but the skin beneath is dry and hard. It must, however, be often moistened, and rubbed as much as it will bear without pain. A disease of this kind is described in the fourteenth volume of the Philosophical Transactions (Shaw's Abridgement, iii. 43), in a letter from the famous Lewenhoeck, and another in the thirty-seventh volume (Abr. vii. 543). The sequel of this last case is given in the forty-ninth volume, and the disease there appears to be hereditary. A complaint so closely interwoven with the texture of the skin would be probably intractable; and the only method of relief is that mentioned, viz. drawing out the scales after maceration in warm water. Mercury has been tried without success. A less degree of this complaint occurs in worn-out constitutions, in anasacra, &c. where it appears to be only an enlargement and thickening of the natural scales, of which the cuticle consists.

LE'PRA NIGRICANS differs from the LEPRA GRÆCORUM, q. v. in colour, and in appearing as a disease more strictly connected with the constitution. The spots are smaller in size, the border livid, and the incrustations, which are thin, seem to derive their hue from the lividness of the skin below. When the scales are removed they are not so soon restored, and the discharge is bloody. It affects persons exposed to great fatigue, in damp situations, and has been considered as the true lepra in constitutions where the blood is greatly dissolved. The remedies of lepra are useless or injurious; and bark, mineral acids, with sea bathing, contribute to the cure. The *black scurvy of the West Indies* seems to be the same disease, though, like this, allied to elephantiasis, since a numbness is felt in the fingers and toes, the voice is hoarse, and fever supervenes.

LEPTOPHO'NIA, (from λεπῖος, *slender*, and φωνη, *the voice*). See PARAPHONIA.

LEPTOPI'TYRON, (from λεπῖος, *thin*, and πιτυρον, *bran*). See FURFUR.

LE'ROS, (from ληρεω, *to trifle*). See DELIRIUM.

LESE'OLI MO'RBUS. See ICTERUS.

LESE'OLUS. A diaphanous salt, which cures the jaundice. Paracelsus.

LETHA'RGUS, (from ληθη, *forgetfulness*, and αργος, *slothful*). LETHARGY; *veternus.* See CAROS, and APOPLEXIA.

LEUCA'NTHEMUM, (from λευκος, and ανθεμος, as it only differs from the chrysanthemum in the white floret). A name also for the common and other species of camomile. See CHAMÆMELUM.

LEUCA'NTHEMUM BE'LLIDIS FA'CIE. See BELLIS MAJOR.

LEUCA'NTHEMUM CANARIE'NSE; *chamæmelum Canariense.* The effects are the same as those of the pellitory root, if chewed.

LEUCA'NTHE VE'TERUM, (from λευκος, *white*, and ακανθα, *a thorn*). See CALCITRAPA OFFICINALIS.

LEU'CAS MONTA'NA. See LAMIUM LUTEUM.

LEU'CE, (from λευκος, *white*). See ALPHUS.

LEUCOI'UM, (from λευκος, *white*, and ιον, *a violet*). See CHEIRI, and BULBONACH.

LEUCOLA'CHANON, (from λευκος, *white*, and λαχανον, *a herb*). See VALERIANA SYLVESTRIS.

LEUCO'MA, (from λευκος, *white*). See ALBUGO.

LEUCO'MA NEPHE'LIUM. See ACHLYS.

LEUCONYMPHÆ'A, (from λευκος, *white*, and νυμφαια, *water lily*). See NYMPHÆA.

LEUCOPHLEGMATIA, (from λευκος, *white*, and φλεγμα, *phlegm*). In leucophlegmatia, Aretæus observes, the flesh is not wasted as in anasarca, and it is more easily cured: indeed it is only the beginning of anasarca. Sometimes this word signifies an *emphysema.*

LEUCOPI'PER, (from λευκος, *white*, and πιπερις, *pepper*). See PIPER ALBUM.

LEUCORRHŒ'A, and LEUCO'RRHOIS, (from λευκος, *white*, and ρεω, *to flow*). See FLUOR ALBUS.

Since that article was printed, we find cantharides proposed as a remedy for this disease, in consequence of its resemblance to gleet. It was given, it is said, by Greenfield with success; and, indeed, a topical stimulant may be occasionally useful. The balsam. copaiba is probably no more.

LEVA'TOR, (from *levo, to lift up*). The name is given to many muscles, whose office it is to elevate different parts into which they are inserted, viz.

LEVA'TOR PALA'TI MO'LLIS, rises from the basis of the skull, near the articulation of the lower jaw, runs

down the fauces, passes inwards and forwards, spreads itself on the palatum molle, and goes to the uvula.

LEVA'TOR PA'LPEBRÆ SUPERIO'RIS, ELEVA'TOR, *aperiens palpebrarum rectus*, named from its straight progress and use by Fallopius and Douglas. It arises on each side from the bottom of the orbit by a small tendon, and as the fleshy fibres of the muscle pass over the globe of the eye, they gradually spread, and afterwards terminate by a broad tendinous expansion on the superior part of the tarsus belonging to the upper lid.

LEVA'TOR SCA'PULÆ, *levator proprius* of Winslow; *musculus angularis, seu patientiæ musculus*, is divided at its origin into four little muscles, from the transverse processes of the four superior cervical vertebræ. The branches join, and form one muscle on each side, inserted into the bases of the respective scapulæ above the spine.

LEVATO'RES ANI, and ELEVA'TORES, rise with a broad base from the symphysis of the os pubis, the internal part of the ileum, the membrane of the obturator internus and coccygæus, and the sharp process of the ischium, directing their course downwards as to a centre, and blending part of their fibres with those of the sphincter, the acceleratores urinæ, and the anterior part of the extremity of the coccyx, surrounding the prostate gland, the vesiculæ seminales, and the neck of the bladder, which they contribute to support. They contribute to expel the fæces; but do not, as is generally supposed, very powerfully compress the vesiculæ seminales in coition.

LEVA'TORES COMMU'NES LABIO'RUM, *elevatores labiorum*, rise from the cavity under the os jugale, in the os maxillare, and are inserted, with the zygomaticus major and others, into the angle of the lips, on each side.

LEVATO'RES COSTARUM, *supracostales*, rise from the transverse processes of the vertebræ, and are inserted into the ribs; they are divided into the longiores and the breviores. The latter rise from the transverse processes, and are inserted into the next rib; the longiores run over one rib, and are inserted into the next.

LEVATO'RES LA'BII INFERIO'RIS, ELEVATO'RES, *par mentale, incisivus inferior* of Winslow, and *levator menti* of Albinus, rise from the sockets of the incisores, and are inserted into the lower lip.

LEVATO'RES LA'BII SUPERIO'RIS, ELEVA'TORES, rise from the os maxillare, and descend obliquely under the skin of the upper lip, orbicularis muscle, and the outer part of the alæ nasi.

LEVIGA'TIO, (from *levis, light*). The pharmaceutical operation, by which hard substances are reduced to an impalpable powder; but unless the instrument is very hard, as much of the stone as of the medicine may be discovered in it. In many instances the substances are levigated with water, and suffered to dry on chalk; sometimes the fine powder is separated, after levigation, by washing. If the whole is agitated in water, the coarser parts will subside, while the finer ones may be poured off with the fluid, and will subside after a longer rest. Thus the powder may be obtained of any degree of fineness, according to the time suffered to elapse before the water is first poured off. We observe, however, in the Encyclopedia Britannica, a very convenient instrument, called a *fanner*, which separates the finer powder by a blast of air, on the same principle as the machine for winnowing corn acts, but know not how it really succeeds in practice, so that we shall not fill our page with the description.

LEVI'STICUM, (from *levo, to assuage*; from its relieving painful flatulencies). *Ligusticum, angelica montana perennis*. COMMON LOVAGE; *ligusticum levisticum* Lin. Sp. Pl. 359; is a tall umbelliferous plant, with leaves divided like those of smallage; the root thick, fleshy, juicy, branched, and of a brown colour outwardly; a native of the south of Europe. It is perennial, flowers in June, and its seeds are ripe in August. This plant hath a strong and peculiarly ungrateful smell: to the taste it is warm and aromatic, resembling angelica, but less agreeable; and its yellowish gummy resinous juice much resembles opoponax.

The seeds are warm and pungent, of a more agreeable flavour; the roots sweetish, and more pleasant than the leaves; its essential oil is in a small proportion, and an extract made with rectified spirit retains both the aroma and the sweetness. Lovage is similar to angelica and masterwort, as a carminative, sudorific, and deobstruent, and might be a good substitute for either, had we not more effectual medicines in the galbanum and asafetida. The leaves, eaten as salad, are accounted emmenagogue. See Raii Historia; Lewis's Materia Medica.

LE'VITAS INTESTINO'RUM, (from the food passing quickly). See LIENTERIA.

LIBANO'TIS, (from λίβανος, *frankincense*). *Cachrys, cachrysea*, FENNEL HERB, FRANKINCENSE, *athamanta libanotis* Lin. Sp. Pl. 351, more probably *laserpitium ferulaceum* Lin. 358, grows on mountains in Italy and Sicily, and flowers in May. It is also a name for several sorts of *laserpitium, ferula glauco folio, ferula minor, rosmarinus, oreoselinum opii*, and several other plants.

LI'BERANS A'QUA. See CALCIS AQUA MAJUS COMPOSITA.

LIBI'DO. See PRURITIS.

LI'BRA, (from λίτρα, *a pound*). See PONDUS.

LICHA'NDOS, (from λειχω, *to lick*; because used in the action of licking). FORE-FINGER. See INDEX.

LI'CHEN, (from λειχω, *lambo, quia lambendo serpant*), a cutaneous disease called *lichen*, from its resemblance to the spots scattered over the tuberculated lichen. It is a papulous eruption, sometimes rising into tumours of a more considerable size; but in its milder forms rather a deformity than a disease. The term has been variously applied, and the eruption confounded with herpes, scabies impetigo, &c. The confusion is of little consequence, since the complaint is usually trifling; and we may define it, with Dr. Willan, an extensive eruption of papulæ affecting adults, connected with internal disorder, usually terminating with scurf, recurrent, not contagious. This genus he divides into five species, the *lichen simplex, agrius, pilaris, lividus*, and *tropicus*. The first commences with slight feverish symptoms, which in a few days are relieved by distinct red papulæ about the cheeks and chin, or on the arms; and in three or four days the same appearances take place on the neck, body, and lower extremities, accompanied with an unpleasant sensation of tingling, aggravated during the night. The eruption fades in about a week, and the whole surface is covered with large scurfy exfoliations, which continue longest in the flexure of the joints. The period of its termination

is seldom the same in any two cases; and on different parts of the surface of the body there is some difference in the form of the papulæ. On the face they are large, rounded, often forming small tubercles like vari; on the neck, breast, and extremities, they are most distinct and acuminated; and on the hands they resemble obscure watery pustules, which exfoliate without any discharge of fluid. This disease most commonly affects persons of a weak irritable habit, and occurs about the beginning of summer or autumn, sometimes general, at others partial, occasionally disappearing or returning without leaving any scurf, and often without any previous fever. A light cooling diet, or, if necessary, some easy laxative, is only necessary. Sometimes the simple lichen is chronical, and then styled *scurvy;* sometimes critical, and called *scabies critica.* It sometimes terminates in a dry tetter.

The *l. agrius*, from *αγριος, immanis*, is preceded by a fever approaching the typhus. The eruptions are of a deep dark red, with an inflamed basis, itching and tingling after any stimulating food and drink, or in the warmth of the bed. In the morning the uneasiness is inconsiderable. Straw-coloured pustules are occasionally intermixed, and by the continuance of the complaint the skin is thickened, chapped, and painful. The pustules are usually confined to the upper part of the body.

Its continuance is uncertain, and it sometimes appears and disappears; but if repelled, general constitutional disorder follows. If any wound is made by scratching, it is with difficulty healed, and the disease sometimes terminates in an ulcerated psora. This species differs from the former in the nature of the fever, the greater violence and obstinacy of the complaint. It is exasperated by mercurials, though calomel has been recommended in the beginning as a laxative; and the best medicines are the bark, with the mineral acids. We know not that a perpetual blister or an issue has been tried; but it appears a probable means of relief. The itching is best relieved by the spittle or a little rose pomatum.

The *lichen pilaris* is the lichen simplex, affecting chiefly, or exclusively, the roots of the hair, and from around the hair exfoliations take place. It differs in no respect from the first species.

The *lichen lividus* seems little different from petechiæ, with which they are often mixed, and the disease chiefly confined to the poor, whose diet is frequently unalimentary: it is best relieved by the bark and mineral acids. No fever precedes. Papular eruptions, resembling the lichen lividus, sometimes occur among the secondary appearances of lues; but in this last the papulæ are smaller, more numerous, more generally diffused; their points are, after some time, depressed; they do not disappear and return, but occasionally terminate in a foul ulcer.

The *lichen tropicus* is the prickly heat of tropical climates, resembling the papulæ produced by sweating in the more temperate. It appears without any preceding disorders of the constitution; but the papulæ, about the size of a small pin's head, are numerous, of a vivid red, and elevated so as to produce a considerable roughness in the skin; but no redness or inflammation surrounds them. The eruption is chiefly confined to those parts of the body which are usually covered, and sometimes appears on the forehead contiguous to the hair, though never on the palms of the hands, the soles of the feet, or on the hairy scalp: flannel or warm clothing, increases the number of the papulæ. Small pearly pustules, containing a limpid fluid, are often intermixed with the prickly heat, when perspiration is very copious, more especially on the breasts and about the wrists. They have no disposition to ulcerate, though violently scratched, but terminate in scales. A troublesome itching attends the prickly heat, and prevents sleeping during the night, with an acute sensation of pricking, which often also takes place suddenly after drinking any warm liquor. The eruption is sometimes stationary, appearing equally vivid in the day and night; sometimes quickly disappearing and returning, without any obvious cause; but whenever it continues for any length of time, the papulæ throw off minute scales, and are succeeded by a fresh crop, without leaving any vestiges on the skin. Persons of a fair complexion, with red hair, and a soft skin, are more liable to this eruption, and have it in the greatest quantity. Those of dark complexions have it slightly, or remain free from it. As the prickly heat is considered to be a salutary eruption, no attempts should be made for its repulsion. Its sudden disappearance is rather the effect of internal disorder than a cause, and occasioned by fever, or any slight complaint of the stomach: in the latter case a stimulus applied to that organ, as spirits, or warm liquids reproduces it. Its appearance on the skin of persons in a state of convalescence is always a favourable sign. To alleviate the itching and tingling of the prickly heat, a light and cool dress, and avoiding warm liquors, have been found most serviceable.

A vivid eruption of papulæ, somewhat analogous to the prickly heat, appears in our own climate, on the arms, hands, face, and neck of labourers, and other persons who use violent exercise during the hot months of summer. It produces a sensation of tingling, a smarting, rather than of itching, and disappears in a short time without any particular consequences. See Willan on Cutaneous Diseases.

In veterinary medicine the term lichen is applied to a species of leprosy and warts which grow on horses legs.

In botany it is called *liverwort*, and is a floriferous and seminiferous moss, whose flowery little heads are furnished with many grains, variously shaped, producing as they ripen several little monopetalous flowers. The seeds, which are small, flat, and orbicular, are contained in some peculiar open capsules, resting upon the plane of the leaves, and are sometimes found in the same plant that bears the little heads, sometimes in other plants of the same species. Besides these flowery heads, in some species there are umbellated heads of different figures, which produce neither flower nor seed. The pedicles of both species are for the most part naked, and proceed from no vagina. The leaves are of an herbaceous consistence, and of an indeterminate figure, widely spreading, and running out into various roots from their back part. Every plant under the name of lichen is warm and astringent; and this term is applied to the *muscus pyxidatus, hepatica vulgaris*, &c besides the succeeding.

LI'CHEN ARBO'REUS PU'LLUS, *muscus crustæ*. TREE LIVERWORT, *lichen plicatus* Lin. Sp. Pl 1622, grows on trees, and is used instead of the pulmonaria arborea. It is astringent, and chiefly used in pulmonary hæmorrhages.

LI'CHEN CINE'REUS. ASH-COLOURED GROUND LIVERWORT; *lichen caninus* Lin. Sp. Pl. 1616. It consists of roundish thick leaves, divided about the edges into obtuse segments, flat above, of a reticular texture below, fastened to the earth by small fibres, of an ash-grey colour, by age turning darker or reddish. It grows on commons and open heaths, spreads quickly on the ground, and is found at all times of the year, but supposed to be most active from the end of autumn to the winter. A powder, called *pulvis antilyssus*, used to be formed of two parts of this moss, and one of black pepper: ʒi. ss. in half a pint of cow's milk, for four mornings successively, was to be taken fasting. (See HYDROPHOBIA.) It has now fallen into disrepute; and does not appear to be possessed of any useful degree of medicinal virtue.

LI'CHEN ISLA'NDICUS, Lin. Sp. Pl. 1611; *lichen terrestris; lichenoides;* and *rigidum;* ERYNGO-LEAVED, EATABLE, ICELAND LICHEN, is a native of Britain, and grows both in Scotland and Wales. It is foliaceous, erect, large; leaves crowded, connected, about two inches high, stiff when dry, but soft and pliant when moist: they are variously divided, without order, into broad distinct segments, turned in at the edges, and fringed with short strong bristles; the upper surface is smooth, concave, shining, of a pale green, or chestnut colour, but red at the base; the under is smooth and whitish, a little pitted and sprinkled with very minute black warts: the fructifications are large, of a reddish colour, and placed on the lobes of the leaves. This plant is extremely mucilaginous, has a bitter and somewhat astringent taste, and is considered as a laxative and an anthelmintic in its recent state: but its bitterness and aperient quality are in a great measure destroyed by drying, or a slight infusion. The Icelanders make a flour of it, called *fialgras*, either by first washing and cutting the plant into small pieces, or by drying it, putting it into a bag, which is well beaten, and working it into flour by stamping. This is tolerably agreeable and grateful food. As a medicine, Scopoli and Haller recommend it in coughs and consumptions; and it has proved efficacious in dysentery and diarrhœa. Dr. Hertz found it so successful in dysentery, that after the repeated administration of emetics and cathartics he seldom used any other medicine, to which he occasionally added opium. Dr. Crichton recommends it in *phthysis* attended with hæmoptoe and pituitous or mucous discharges; and thinks he has found it of considerable service. It is given in decoction, made by boiling one ounce and an half in a quart of milk, over a slow fire, exactly a quarter of an hour. The dose is about a pint in the day. If the milk disagrees, water may be used. This medicine has lately become fashionable; but we have only found it a mild nutrient. The bitter is apparently of the narcotic kind, and at times is cold and heavy on the stomach. If this is taken away by a slight previous infusion, a mucilaginous, or rather a farinaceous, matter only remains, without apparently any distinguishing property. At Berlin it seems to have been used with different success. M. J. C. Fritze thinks it a valuable medicine, even when purulent matter is expectorated; and he added to the decoction, either in milk or water, the flowers of St. John's-wort and coltsfoot. F. Fritze, in his Clinical Annals, chiefly confines its utility to its mildly nutritious powers; and Scheffer was usually unsuccessful with it, except in recent, apparently catarrhal, cases.

LI'CHEN PYXIDATUS, Lin. Sp. Pl. 1619, (from *pixis, a cup*, in consequence of its bearing little cups). See MUSCUS PYXIDATUS.

LICHENOI'DES, (from *lichen*, and ειδος, *likeness*). See LICHEN ISLANDICUS.

LI'EN, (from λειος, *soft*, or *smooth*). See SPLEN.

LI'EN SINA'RUM. See FABA ÆGYPTIA.

LIENTE'RIA, (from λειον, *smooth*, and εντερον, *the gut*). A LIENTERY. LEVITAS INTESTINORUM, q. v. In Dr. Cullen's system it is the fifth species of diarrhœa; defined a diarrhœa in which the aliments are quickly hurried through the body in a nearly undigested state. Fernelius attributes this disorder to a weakness of digestion, Friend to an obstruction of the intestinal glands, and Fr. Sylvius to an obstruction of the orifice of the lacteals. Actuarius observes, that an inveterate diarrhœa or dysentery most commonly produces the distemper. The fault is generally in the stomach, as the digestion is not complete; and the unaltered food producing an unusual impression, excites the action of the intestinal fibres, and probably also of the mucous follicles. The chief remedies are warm strengthening medicines, with moderate exercise and warm clothing. See DIARRHŒA.

LIENTE'RIA SPONTA'NEA. See DIARRHŒA.

LIGAME'NTUM, (from *ligo, to tie*). *Colligamen, copula, syndesmos*, a LIGAMENT. The ligaments are tendinous, inelastic, glistening bodies. Every articulated bone is furnished with a capsular ligament, which is composed of two layers: the external layer is the stronger, formed by the periosteum; the inner is thin and uniform.

This part of anatomy, though so important in many respects, has been, however, greatly neglected, if we look at those aids which are not derived from actual dissection. The representations of the ligaments have, in general, been mean, incorrect, and inelegant. While each bone is delineated so as to display every little prominence and furrow by Albinus and Le Sue; while each unimportant muscle is represented in all its varieties by Bidloo; the ligaments have been little noticed. The minute accuracy of Soemmering cannot find, in the fasciculi of Haller, the discriminating genius of Albinus. De Corp. Fabrica, v. xxxi.

In Vesalius we perceive the ligaments of the lower limbs delineated, and in Winslow they are described. Walter has figured and described the ligaments of the lower extremities (Disput. Anatom. Halleri, vol. iv.); Schwencke, in his Hæmatologia, those of the acetabulum: but the first professed work in which all the ligaments were described and delineated, was that of Weitbrecht, published at Petersburg, 1742, in quarto. His dissections were numerous; and he not only collected the observations of former anatomists, but compared them with what his scalpel had shown. His engravings, however, imperfectly represent the objects; and some ligaments are omitted, particularly of the os sacrum. Yet till lately Weitbrecht was our only assistant, and his plates have been professedly copied in an elegant work on the bones by Losche, concluded at Erlang, 1790; and in another by Schenke, published at Leipsic in 1795. In these, however, the objects are

diminished, and the representations are consequently still more distant from nature.

Somewhat before these copies of Weitbrecht, Loder published his anatomical tables at Weimar, viz. in 1794; and, perceiving that this part of anatomy had received less attention than some others, introduced new plates of the fresh joints, from his own preparations. The abilities of the engraver were not equal, however, to the diligence and ability of the anatomist; yet Loder greatly excelled his predecessor. The order of time, rather than the improvement, leads us to speak of Mr. J. Bell's plates of the joints, subjoined to those of the bones. The errors of the osteology are, however, continued in the ligaments; and the plates are so miserably executed, that without the explanation no anatomist could guess at the object before him. Anatomical plates are, however, often miserably executed; and, in a Dictionary now publishing, we showed a view of the basis of the brain to several anatomists, who supposed it a herniary sac; and, indeed, every thing but what it was.

Morgagni long since observed, that many of the ligaments remain to be more accurately examined than in Weitbrecht's work; and that to which we have been indebted for our plates is, undoubtedly, the most perfect which has yet been published. We mean the Syndesmology of Caldani, published at Venice, in imperial folio, 1803. The elegance, the accuracy, and the minute precision of the descriptions have led us to copy from it freely; and we have engaged in this short account of what was before done, to show the importance of what we have added to the stock of the English anatomist.

LIGAME'NTUM ANNULA'RE. The appellation of ANNULAR LIGAMENT, or *frænum*, is given to that on each ankle and each wrist, rather on account of their use than their figure; they confine the tendons of the muscles which pass through them.

LIGAME'NTUM ARTERIO'SUM. See DUCTUS ARTERIOSUS.

LIGAME'NTUM CILIA'RE. White, striated, ligamentous fibres arise out of the choroid membrane, from the ciliary circle, which are covered with a black pigment, and are attached to the membrane of the vitreous humour, where it joins the crystaline lens. The fluctuating extremities of these striæ are spread on the edge of the lens, but not united with it. The whole is generally described under this term.

LIGAME'NTUM CO'LI DE'XTRUM. The mesentery having reached the end of the ileum joining the colon, the lamina which is turned to the right side forms a small transverse fold, distinguished by this appellation.

LIGAME'NTUM CO'LI SINI'STRUM. The mesentery, here called *mesocolon*, having passed below the left kidney, contracts and forms a transverse fold thus named.

LIGAME'NTUM CO'LLI vel NUCHÆ. See CUCULLARIS.

LIGAME'NTUM CUTA'NEUM O'SSIS CO'CCYGIS. It passes anteriorly from the extremity of the os coccygis; is very slender, and divides into two portions at the orifice of the anus, which run in the membrana adiposa, and, when expanded, are inserted in the skin on each side of the anus: they continue to divaricate, and are lost on the two sides of the perinæum.

LIGAME'NTUM DENTICULA'TUM. Between the anterior and posterior bundles of fibres which form the spinal nerves, a ligament is connected by a number of threads, to each side of the pia-matral covering of the spinal marrow, through its whole length, for its support. As this ligament is fixed by a number of teeth to the inner side of the sheath formed by the dura mater, it has been called *denticulatum*. The greater number of these teeth run transversely; some ascend, others descend; all split into fibres, which are incorporated with the fibres of the inner layer of the dura mater. From the conical lower end of the spinal marrow, a cord is produced, which reaches to the os coccygis, and there splits into threads, which may be considered as the termination of the last teeth of this ligament.

LIGAME'NTUM FALLO'PII. See LIGAMENTUM POUPARTII.

LIGAME'NTUM HE'PATIS SUSPENSORIUM, the remains of the umbilical vein.

LIGAME'NTUM INTERMAXILLA'RE. A ligament on each side of the face, which connects the two jaws, and receives the posterior fibres of the buccinator muscle. (Winslow.) It is strong and broad, fixed to the outside of the upper jaw, above the last dens molaris, and at the side of the apophysis pterygoidæus internus. By the lower end it is fixed on the outside of the lower jaw, below the last dens molaris.

LIGAME'NTUM LATUM, or SUSPENSO'RIUM HEPATIS, is made up of the double membrane of the peritonæum, which covers the liver on each side, and meets to be joined by the sternum.

LIGAME'NTUM POUPA'RTII, or FALLO'PII. POUPART'S LIGAMENT. It is only the lower border of the descending oblique muscle of the belly stretched from the fore part of the os ilium to the pubes.

LIGAME'NTUM PU'BIS INTEROSSEUM, is a strong triangular ligament, fixed by two of its edges in the inferior branches of those bones, all the way up to their common symphysis; the third edge, which is lowest, is loose; and this whole membrane, the middle of which is perforated by a particular hole, is stretched very tight between the two bones, and under their cartilaginous arch, to which it adheres very closely.

LIGAME'NTUM ROTU'NDUM. The ROUND LIGAMENT. One of these is found on each side of the uterus; and each is composed of a plexus of blood-vessels upon the fore part of the ligamenta lata, running in the duplicature of these ligaments. From the corners of the fundus uteri, they pass through the annular aperture of the obliquus externus, and are lost in the middle and upper part of the fat in the groin.

LIGAME'NTUM SUSPENSO'RIUM. See CORPORA CAVERNOSA PENIS.

LIGA'TIO, and LIGATU'RA, (from *ligo*, *to bind*). A BANDAGE, or LIGATURE (see FASCIA): a stiffness of the joint, and sometimes that impotence supposed to be induced by magic.

LIGATU'RA VE'NERIS. Camphor, which is supposed to check the venereal appetite. See CAMPHORA.

LIGNUM, (from *lego*, *to gather*). WOOD; because its branches are gathered into bundles for domestic use; a term applied to many medical substances; as, LIGNUM ALOES, LIGNUM GUAIACUM, LIGNUM QUASSIÆ, &c. vide in verbis.

Li'gnum Campechia'num. See Campechenese lignum.

Li'gnum colubri'num; *strychnos colubrina* Lin. Sp. Pl. 271. It is of the same genus, perhaps the same species, which affords the nux vomica, and is, like it, intensely bitter and acrid. Like every poisonous substance, it excites the greatest commotions in the system, and is emetic, cathartic, diaphoretic, and anthelmintic, seeming to affect also the intellectual powers. As its name imports, it has been given to those bitten by serpents, to cure intermittents, and to destroy worms.

Li'gnum moluccense vel pavanæ. The seeds of the tree, *croton tiglium* Lin. Sp. Pl. 1426, which affords this wood are called *grana tiglii;* and these, as well as the wood, are highly acrid, producing the most violent commotions in the whole body, with discharges from almost every excretory. The oil of the seeds is, however, perfectly mild; and the genus is nearly allied to the ricinus which affords the castor oil.

Li'gnum nephri'ticum. It is supposed that this wood and the Behen nuts are from the *guillandina moringa* Lin. Sp. Pl. 546. The first is of a pale yellow, though it tinges wood of a fine blue colour; the taste is slightly acrid and bitterish. The nuts are mucilaginous and oily; their oil keeps long without rancidity. It has been used in itch, besides the disease from which its name is derived.

Li'gnum rho'dium, probably from the *genista canariensis* Lin. Sp. Pl. 997. Much confusion has arisen respecting the real tree from which this wood is taken, in consequence of its being supposed the same with the *aspalathus* of Dioscorides; for the *aspalathus* of Galen was a bark. The aspalathus of the moderns was the calambour wood, or the lignum aquilæ, resembling the lignum aloes. The lignum rhodium, at present sold, is in long crooked pieces, full of knots, of a reddish yellow colour. The largest, smoothest, most compact, and the deepest coloured, is preferred. The taste is bitterish, and somewhat pungent. It smells strongly like a rose; and the wood, as well as the oil, is supposed to be sudorific.

Li'gnum se'rpentum. The wood of the *ophioxylum serpentinum* Lin. Sp. Pl. 1478.

LIGU'STICUM, (from *Liguria*, the country where it flourished). See Levisticum.

LIGU'STRICUM. See Seseli vulgare.

LIGUSTRUM, (from *ligo, to bind,* from its use in making bands). Privet.

Ligu'strum I'ndicum; *alcanna, Cyprus Dioscoridis & Plinii, elhanne Arabum.* Eastern privet; the *henna* of the Turks and Moors, and *lausonia inermis* Lin. Sp. Pl. 498. It is reckoned emmenagogue, but is little used, except to impart a red colour to the nails of women and the beards of men.

Phillyrea, or mock-privet, is said to be an astringent; but, like the rest, is neglected in practice.

Ligu'strum vulga're, *ligustrum Germanicum,* primprint, or common privet; *ligustrum vulgare* Lin. Sp. Pl. 10; is a shrub with rough pliant branches, and much used for hedges in gardens; the flowers grow in spikes, and are of a whitish colour, followed by clusters of black berries: they appear in May and June; the berries are ripe in September.

There are other plants of this name reckoned somewhat astringent, and useful in hysteric disorders, but they are never used.

LILIA'STRUM ALPI'NUM MINUS, (from *lilium, the lily,* which it resembles). Spider-wort. *Phalangium allobrogicum, anthericum liliastrum* Lin. Sp. Pl. 445. This plant is chiefly used as an ornament in gardens, though it is said to resist poison, and to be useful in relieving colic.

LI'LIO-HYACI'NTHUS, (from *lilium,* and *hyacinthus,* because its roots resemble those of the lily, and the flowers those of the hyacinth). The lily-hyacinth. *Scilla lilio-hyacinthus* Lin. Sp. Pl. 442. The roots, like those of the lily, promote suppuration.

LI'LIUM, (from λειος, *smooth, graceful*). The lily.

Li'lium convallium minus. See Monophyllon.

Li'lium a'lbum. The common white lily, *lilium candidum* Lin. Sp. Pl. 433, is perennial, a native of Syria and Palestine, common in our gardens, and flowers in June. The flower gives an agreeable flavour to expressed oil, and the roots are extremely mucilaginous: boiled with milk or water, they are useful in emollient and suppurating cataplasms: but the bread and other farinaceous poultices possess equal advantages. Dr. Alston thinks the roots are of the nature of squills. Godorus, serjeant-surgeon to queen Elizabeth, cured many dropsical people, by giving them bread in which these roots were baked.

Li'lium conva'llium, *convallaria Maianthemum,* May lily, and lily of the valley, *convallaria majalis* Lin. Sp. Pl. 451. Its flowers are smaller than any other lilies, have a penetrating bitter taste and a fragrant smell: the bitter remains both in the spirituous and watery extract; and is nearly as purgative as aloes. The dried flowers are a strong sternutatory; and the roots possess the bitter and purging qualities of the flowers. The flowers were formerly used in nervous complaints, sometimes in spasmodic asthmas, or catarrhs.

Li'lium ru'brum, *hemerocallis fulva* Lin. Sp. Pl. 462, *lilium purpurocroceum, lilium croceum.* Orange lily. The leaves are cooling, and the roots aperient and stimulating.

Li'lium Paracelsi, a fanciful term of that enthusiast for a very pungent penetrating alkaline tincture.

LIMACES. Snails. The common garden snail; *limax agrestis* Lin. Syst. Natur. 1082, is viscid and glutinous, supposed to be highly nutrient, and employed sometimes, seemingly with advantage, in hectics. The gluten of the *l. maximus cinereus* L. 1081, is used as a resolvent liniment in glandular tumours. See Mollusca.

LIMATU'RÆ FE'RRI, (from *lima, a file*). See Ferrum.

LIMO'NIUM, (from λειμων, *a marsh,* from its colour); sea-lavender; *statice limonium* Lin. Sp. Pl. 394, is astringent, and said to be given with success in diarrhœas, dysenteries, mœnorrhagia, and all kinds of hæmorrhages. The roots and leaves are chiefly used. A name also for *behen rubrum,* and *beta sylvestris.*

LIMONUM, (from λειμων, from the green colour of its unripe fruit, or from the Hebrew term *rimon*). The lemon-tree; *citrus medica, malus medica* and *persica* Lin. Sp. Pl. 1100, *β*, is a native of Asia, but cultivated in the warmer parts of Europe. Linnæus reckons the citrons and lemons to be only varieties of one species, distinguished from the oranges only by the pedicles of the leaves being naked.

The yellow rind of lemons is a grateful aromatic, and very commonly used in stomachic tinctures and infusions, as it conceals the disagreeable flavour of many bitters. It affords an extremely volatile essential oil, of a pale straw-colour, in smell as agreeable as the fresh peel, which is employed as a perfume; but often adulterated with spirit of wine, or with oil of turpentine. If it is adulterated with oil of turpentine, on adding a little spirit of wine, the mixture becomes milky; if with spirit, the addition of oil of turpentine has the same effect.

The juice of lemon is more acid than that of oranges: half an ounce of good lemon juice saturates about a scruple of fixed alkaline salt; and this mixture, with the addition of a small quantity of any aromatic water, is useful in relieving nausea and vomiting; especially if taken during its effervescence. It is called the saline draught of Riverius, is cooling, and from this effect promotes perspiration in fevers. The juice often allays hysterical palpitations of the heart, and, in jaundice, four or six ounces taken in a day are highly useful. Its other properties are similar to those of the orange juice. The salt of lemons usually sold is the salt of wood sorrel, the oxalic acid differing, however, but slightly from the citric, and flavoured with the essential oil of lemons. The concrete salt is pure acid separated from the mucilage in the way recommended by Scheele, viz. uniting it with calcarious earth, and separating the acid by means of the vitriolic. As an antiscorbutic, lemon juice is generally taken on board of ships; but it spoils by long keeping, unless a small portion of ardent spirit be added. It is sometimes boiled to the consistence of a rob; but the mucilaginous part is then burnt, which gives a bitter flavour, and the acid is in part decomposed: indeed, for all the purposes of an antiscorbutic the juice must be fresh. See Neumann's Chemical Works; Lewis's Materia Medica.

LINAGRO'STIS, (from λινον, *cotton*, and αγρωστις, *grass;* from the softness of its texture). See PANICUM.

LINA'RIA, (from the resemblance of its leaves to those of flax), *osiris urinaria*, FLAX-WEED, or COMMON TOAD-FLAX, *antirrhinum linaria* Lin. Sp. Pl. 858. The common sort resembles the esula minor so closely, that it cannot be distinguished before the flowers appear but by breaking the stalk, as the toad-flax is destitute of the milky juice. It is perennial, grows wild about the side of dry fields, and flowers in June and July. If the leaves, which are bitterish, and of a saline taste, resembling in smell, when rubbed, the elder, are inwardly used, they are diuretic and purgative, and particularly powerful in the latter view. The plant has been supposed also an aperient and deobstruent, and used in jaundice. Externally they have been commended against the piles. A name also for a species of *elichrysum*.

LINA'RIA HEDERA'CEO FO'LIO. See CYMBALARIA.

LI'NCTUS, (from *lingo, to lick*). *Lohoc eclegma, elexis, eclectos, illinctus*, LAMBATIVE; a composition thicker than syrup, but softer than an electuary, first made to be licked from a stick of liquorice, and then gradually swallowed. A linctus is usually formed of mucilages, or of oils mixed by means of mucilage, and often slightly acidulated. It is chiefly used in disorders of the inward parts of the mouth, the fauces and œsophagus, as in aphthæ, and tickling coughs from defluctions of thin serum; but it soon palls.

LI'NEA A'LBA, vel CENTRALIS, (from *linum, a thread*, and *album, white*, from its appearance and colour, or situation). It extends from the os pubis to the cartilago ensiformis, and so high as the navel it is a mere line, but above broader. It is formed by the union of all the tendons of the abdominal muscles, which, by their united action, compress the belly. In this line the trochar, in tapping, is often introduced, and it is divided in hysterotomy, as the wound is attended with but a slight hæmorrhage.

LI'NEÆ SEMILU'NARES terminate the lower part of the external oblique muscle of the abdomen, and are lost at the upper part.

LI'NEÆ TRANSVE'RSÆ pass between the linea alba and lineæ semilunares, formed by the tendinous lines of the recti muscles. They are not directly transverse, as often represented, but irregularly waved.

LINEA'TUS, (from *linea, a line*). A leaf whose surface is streaked with lines.

LINGO'DES, (from λιγγω, *to sound*). An appellation of fevers attended with an hiccough.

LI'NGUA, (from *lingo, to lick*). The TONGUE, *glotta, plectrum.* This term is also applied to some vegetable substances, from their similarity in shape to the tongue. In animal bodies it is composed of two parts; the inferior is a mass of muscle; the upper surface is, towards the apex, full of papillæ, which, when traced backward, become more irregular and flat, whence authors distinguish the papillæ pyramidales, capitatæ, and lenticulares; but each kind is a mass of vessels running from the basis towards the apex. Near the epiglottis the surface of the tongue is glandular; and near the middle is a chap, called the *foramen cæcum*, first described by Morgagni, and since supposed by Vaterus, without foundation, to be the orifice of salivary ducts. Under the papillæ, on the surface of the tongue, are fleshy fibres running in every direction; to these its great variety of motions is owing: under the tongue is a membranous substance, called *frænum*, or *filetum;* the part next the root is called *cephaline;* the tip, *proglossis*.

LI'NGUA A'VIS. The seeds of the ash, so called from their resemblance. See FRAXINUS.

LI'NGUA CANI'NA. See CYNOGLOSSUM.

LI'NGUA CERVI'NA, *calcifraga, phillitis, scolopendrium, asplenium scolopendrium* Lin. Sp. Pl. 1537. HIND'S, or HART'S TONGUE, is a plant with long, uncut, narrow leaves, of a bright green colour, standing on long hairy pedicles, without any stalk or manifest flowers: the seeds are a fine dust, lying in large, rough, brown, transverse streaks on the backs of the leaves. The plant is perennial, found green every season, delighting in moist, shady, stony places. The leaves are commended as aperient and corroborant, particularly in diseases of the viscera; but not at present employed.

LI'NGUA SERPE'NTIS. See OPHIOGLOSSUM.

LINGUA'LES, (from *lingua, the tongue*). The ninth pair of nerves. See HYPOGLOSSI EXTERNI.

LINGUA'LES GLA'NDULÆ; those at the basis of the tongue. See LINGUA.

LINGUA'LIS MU'SCULUS. The MUSCLE of the TONGUE, rises from the basis of the os hyoides, and runs to the tip of the tongue. It consists in general of fleshy fibres, which run in many directions; but

those fibres chiefly distinguished by this appellation turn the tongue laterally and downwards.

Mr. Home has shown, that the tongue is by no means an irritable muscle, and that any part of it may be cut off with little danger.

LINIME'NTUM, (from *lino, to anoint*). LINIMENT, *hypaleipton, litus, perichrisis*, is a thin ointment, and principally designed for an application where the tenderness of a part will not admit of a hard one. Sometimes the term is applied to an application almost fluid; but when it approaches this state the appropriate application is *a wash*. The minute precision of the ancient pharmaceutists is now, however, often disregarded.

LINIME'NTUM A'LBUM. See SPERMACETI.

LINIME'NTUM ARCÆ'I. See ELEMI.

LINIME'NTUM BITU'MINIS AMMONIATUM. ℞. Petrolei Barbadensis ℥i ss aquæ ammoniæ puræ ℥ss. m. This is a strong stimulant, applied in diseases of the hip.

LINIME'NTUM CA'MPHORÆ COMPO'SITUM. ℞. Camphoræ ℥ij. olei olivæ ℥i. aq ammon. puræ ℥iij m. in oleo prius solvatur camphora, deinde adjiciatur aqua ammoniæ puræ; an application of use in deep-seated inflammations, and to hasten suppuration.

LINIME'NTUM CA'MPHORÆ AMMONIA'TUM. ℞. Spiritus camphorat. ℥ij aquæ ammoniæ puræ ℥ij. m. used in chronical enlargements of the joints, and other affections, which require the use of external stimulants.

LINIME'NTUM CERU'SSÆ cum SAPO'NE. See PLUMBUM.

LINIME'NTUM OLEO'SUM. See AMBUSTA.

LINIME'NTUM SAPONA'CEUM, *linimentum saponis*, formerly called *opodeldoc*, and saponaceous balsam, and chiefly employed for external purposes in rheumatic pains, sprains, and bruises. The London college directs the following very liquid form, because the soap acts more advantageously when diluted —Take of the spirit of rosemary, ℔i.; hard Spanish soap, three ounces; camphor, one ounce; digest the soap in spirit of rosemary until it is dissolved, and add to it the camphor. Ph. Lond. 1788. See OPODELDOC.

LINNÆA, *borealis* Lin. Sp. Pl. 880. Its leaves are bitterish and subastringent. They are employed in decoction as a fomentation in rheumatism, and the infusion in milk has been recommended in sciatica.

LINO'SYRIS, (from λινον, *flax*). An herb whose leaves resemble those of flax. See ELICHRYSUM.

LI'NQUART. See DISCESSUS.

LI'NTEUM, LINT, (from *linum, flax*; of which it is made). When lint is used in a flat oval form it is called a pledget; when cylindrical, a dossil. It is used as a medium for applying ointments, to stop hæmorrhages, and, in the form of a dossil, to prevent wounds from closing. When merely to defend wounds is required, poultices are now preferred to lint. See CARBASUS.

LI'NUM, (from λειος, *soft, smooth*; from its smooth texture). FLAX. *Linum usitatissimum* Lin. Sp. Pl. 397, is properly called *line*, only while standing green in the field, without any inner bark: when the inner bark is perfected, it is called flax.

Line, or lintseed, is of a reddish-brown colour, glossy, flat, slippery, nearly oval, and pointed, with an unctuous, mucilaginous, sweet taste, but no smell. On expression much oil is obtained from it, which, if drawn without heat, is insipid, but does not congeal with the winter's cold, nor form a solid soap when mixed with alkalis, but acts more powerfully than any expressed oil as a menstruum on sulphureous bodies. When this oil is sweet it is emollient; when rancid, it is said to be more powerful as an expectorant. It is supposed to be more healing than the other oils of this class, and consequently more often employed in pulmonary complaints, in colics, and constipations of the bowels. In burns and scalds, and when women's breasts are inflamed from the milk stagnating in them, it affords considerable relief. If the seeds are boiled in water, they afford a large quantity of mucilage; but if designed for internal use, an infusion is more agreeable. Infusions of lintseed are emollient and demulcent; of use in tickling coughs, stranguries, &c. A spoonful of the seeds unbruised is sufficient for a quart of water; but liquorice root is often added, and, with the addition of colt's-foot leaves, it is called the *pectoral infusion*.

The mucilage obtained by inspissating the decoctions is an excellent addition for reducing powders of an unpleasant taste into the form of an electuary. The seeds may be used for promoting the digestion of abscesses after the oil is expressed from them; but such applications are generally made by stirring a sufficient quantity of the meal into boiling water to form it of a proper consistence. A cataplasm of this kind is esteemed as an emollient; but the lintseed meal alone is so mucilaginous that it requires the addition of some soft bread to adapt it for this purpose. See Lewis's Materia Medica.

It is the name also of some of the finer species of AMIANTHUS, q. v.

LI'NUM CATHA'RTICUM, Lin. Sp. Pl. 401, *linum minimum, chamælinum*, MOUNTAIN FLAX, MILL MOUNTAIN, and PURGING FLAX, is a small plant, with little, oblong, smooth leaves, having one rib running along the middle. The stalk is slender, reddish, divided towards the upper part into fine branches, bearing on the tops white flowers, followed, as in the common flax, by roundish-ribbed capsules, with ten flattish unctuous seeds in each. It is annual, and grows wild on chalky hills and dry pasture grounds; is an effectual, safe purge; for which purpose a handful of the fresh leaves infused in wine or whey, or a dram of the leaves in powder, is sufficient. See Raii Historia; Lewis's Materia Medica.

LIPARIS, (from λιπος). FAT.

LIPAROCELE, (from λιπος, *fat*, and κηλη, *a tumour*). Any tumour containing a fatty substance.

LIPODE'RMUS, (from λειπω, *to leave*, and δερμα, *the skin*). See PRÆPUTIUM.

LIPOMA, (from λιπος, *fat*). An indolent, fatty tumour, often fluid in the centre.

LIPO'ME. See NÆVUS.

LIPOPSYCHIA. See LEIPOPSUCHIA.

LIPOTHY'MIA; LEIPOTHY'MIA, (from λειπω, *to leave*, and θυμος, *the mind*). FAINTING. *Deliquium animi, defectio, exanimatio, syncope, asphyxia; virium lapsus*; in a greater degree, *apopsychia*, and *echysis; syncope* of Dr. Cullen, who places it in the class *neuroses*, order *adynamiæ*; defining it the motion of the heart diminished, or at rest for some time. The species are, 1. *Syncope cardiaca*, when it often returns without any

evident cause, with violent palpitations of the heart at intervals; from some fault of the heart, or contiguous vessels. 2. *Syncope occasionalis*, when it arises from a manifest cause, from an affection of the whole system. Each is styled idiopathic: the symptomatic species are, *syncope febrilis, exanthematica; stomachica; hysterica; arthritica; scorbutica.* The ancients named it *cardia*, when caused by anger: and what we termed syncope they called CARDIACA PASSIO, q. v.

In this disease the pulse and respiration become suddenly weaker than usual, and, to the perception of the attendants, seem often wholly to cease. In its slightest degree the patient constantly perceives and understands, without the power of speaking; and this often happens to those who are disturbed with flatulencies, without any remarkable alteration in the pulse.—If he loses his feeling and understanding, with a considerable sinking of the pulse, it is called a *syncope*. If so violent that the pulse seems totally to have ceased, without any discernible breathing, and a manifest coldness of the whole body, with a wan livid countenance, it is sometimes followed by death, and called an *asphixy*, or a total resolution. This last degree, in most instances, constitutes, according to Dr. Cullen's arrangement, varieties of apoplexy, and these chiefly of the species which he calls *venenata*.

The causes are either an excess or a deficiency of blood, a loaded or disordered stomach, violent pains, nervous complaints, passions of the mind, a polypus in some of the principal blood-vessels, and opiates, or active deleterious medicines, or effluvia.

The different degrees of this disorder should be distinguished from hysteric fits, epilepsy, and the apoplexy. In the two former diseases there are generally spasms; in the latter the breathing continues, and is laborious, or stertorous. When either disease is without these appropriate symptoms it becomes syncope, or distinction is of little importance, as the remedies are the same.

Those subject to frequent faintings, without any manifest cause, usually die suddenly, and polypi are found in the large blood-vessels. When anger, in weak persons, or worms, are the cause, the disease is dangerous.

During the fit, cold water, or vinegar and water, may be sprinkled on the face, and a little of the same poured down the throat. Strong vinegar, or volatile spirit, may be held under the nostrils, the extremities well rubbed, and, as soon as the power of swallowing returns, a glass of wine, brandy and water, of fetid tincture, or of the spirit of hartshorn with water may be given.

When the fit is over, the cause must be diligently examined, and the morbid state of the system, from which it seems to arise, will determine the plan of treatment. When no distinct cause can be assigned, when the face is livid, and the breathing difficult; when the left hand is cold, and the patient cannot be easy on either side; when it is brought on by extraordinary exertions, by exercise, or whatever increases the circulation through the lungs, we have much reason to fear that it proceeds from an affection of the heart. This is sometimes an enlargement of its cavities, or its contiguous vessels; sometimes an accumulation of water in the pericardium or lungs, or ossifications of the valves. In such circumstances medicine is of little avail. Small bleedings, easy laxatives, camphor, with nitre, and whatever lessens the impetus of the blood, are advantageous. The most perfect repose of body and mind, the mildest food, and the most cooling liquors, are necessary. A blister from some part of the chest has also been found of service.

It often happens, however, that syncope arises from fulness of the stomach and bowels, and, in the greater number of cases, emetics, with repeated laxatives, will succeed. These, at least, should be tried before the patient is alarmed with apprehensions of a topical affection of the heart.

Excess or deficiency of blood are obvious causes, and easily removed, at least for a time; but one less within our power is that general mobility of the system where every excitement is followed by a proportional sinking. Tonics and cold bathing will have some effect; but the cure is only found in the torpor of advancing years. See ASPHYXIA.

LIPPITU'DO, (from *lippus, blear-eyed*). See EPIHORA and XEROPHTHALMIA. Celsus means by it an ophthalmia.

LIQUEFA'CTIO. MELTING. The fluidity of a body when exposed to heat, probably from the combination of caloric. Though we know bodies permanently æriform, we know none permanently fluid, except alcohol and ether; and those are apparently such, because they have not been exposed to the requisite degree of cold. It is not necessary to liquefaction that the body wets; for this effect is owing to the greater attraction of the fluid particles to the body than to each other. Quicksilver is fluid, but does not wet. Melted lead does not adhere to a polished iron immersed in it.

LIQUIDA'MBAR, (from *liquidus*, and *ambar*). *Styrax liquida, acer virginianum odoratum, liquidambar stiraciflua* Lin. Sp. Pl. 1418, is a resinous juice, of a yellow colour, inclining to red; about the consistence of turpentine; by age hardening into a brittle resin. It is moderately warm and pungent, but rarely met with genuine, and chiefly used as a perfume. See Lewis's Materia Medica.

LIQUIRI'TIA, (from *liquor, juice*; or the Welch term *llkoris*). See GLYCYRRHIZA.

LIQUOR CYRENIACUS. See BENZOINUM.

LIQUOR ÆTHEREUS. See ÆTHER.

LIQUOR CERERIS. See ALLA.

LIQUOR METALLICUS. See ARGENTUM VIVUM.

LIQUOR SALIS. See CIRCULATUM.

LIQUOR VENERIS. See ÆRUGO ÆRIS.

LIQUOR A'MNII, in midwifery called the WATERS, is the fluid in which the fœtus swims during gestation. The quantity of this fluid is different in different women, and in the same woman in different pregnancies. It is largest in the earliest months, and when the mother is past the prime of life, or the child is weak. At parturition the *waters*, as they are called, exceed two quarts, and sometimes scarcely two ounces. There are occasionally what are styled false waters, which are frequently discharged at different periods of pregnancy; but if the amnios be really ruptured, labour is inevitable. It is now admitted that this fluid is exhaled from the vessels of the fœtus, and does not contribute to its nourishment. See FŒTUS and AMNION.

LIQUOR MINERALIS ANODYNUS HOFFMANNI. Hoffman, the inventor of this medicine, highly extols it

as an anodyne and antispasmodic. In the Paris Pharmacopœia the following formula is given; but it is not certainly known to be that which Hoffman employed, as he never revealed it.

Hoffman's mineral anodyne liquor.—To one pint and a half of highly rectified spirit of wine, placed in a large glass retort, pour, by little and little through a long stemmed glass funnel, half a pound of concentrated oil of vitriol. Stop the mouth of the retort; digest for some days; and then distil with a gentle heat. At first a fragrant spirit of wine will arise, and after it a more fragrant volatile spirit, which is to be caught in a fresh receiver: the receiver being again changed, a sulphureous volatile acid phlegm comes over; and, at length, a sweet oil of vitriol, which should be immediately separated, lest it be absorbed by the phlegm. Mix the first and second spirits together; and, in two ounces of this mixture, dissolve twelve drops of the sweet oil just named. If the liquor hath any sulphureous smell, re-distil it from a little salt of tartar. This liquor is a mixture of what is styled the *sweet* spirit of vitriol, ether, and the oleum vini; a preparation not very different, probably, from the ether of Tickel. It is imitated in the London Pharmacopœia, by adding three drams of the oleum vini to two pounds of ether; and that of Dublin orders it to be prepared by drawing over one half of the residuum, after the vitriolic ether is separated. It is given as a sedative, and antispasmodic, in hysteric, arthritic, and other painful complaints; to adults from thirty to an hundred drops, or more, with some sugar, or in an appropriate mixture. See Æther.

LITHAGO'GUS, (from λιθος, *a stone*, and αγω, *to bring away*.) An epithet for a medicine that expels the stone.

LITHA'RGYRUM, (from λιθος, and αργυρος, *silver*). Litharge; *lithargyrum auri, almakanda, almakarb, chrysitis, chrysitis spodos; cycima; calciteosa, argyritis; cathmia.* Litharge was usually prepared from the lead employed in refining silver; and it was of a deep yellow, or of a whitish colour, according to the different bodies mixed with it, or according to different degrees of heat to which it was exposed I its colour is dark it is called litharge of gol *aiatan*; if light, of silver, *almarcarida*. This method, however, is not sufficient for the supply; and it is often prepared by melting oxidised lead by a hasty fire. There are a very great variety of medical compositions, of which litharge, or some of its preparations, make the principal, and always a material, ingredient.

LITHA'RGYRI ACETA'TI A'QUA, (see Plumbum), is made by dissolving two pounds four ounces of litharge in a gallon of distilled vinegar, by boiling to six pints.

Litha'rgyri aceta'ti cre'mor. See Plumbum.

Litha'rgyri composita aqua. See Lotio hydrargyri acetati.

Ceratum saponis is, strictly speaking, a preparation of litharge, and is made by boiling a pound of litharge with a gallon of vinegar over a slow fire, constantly stirring it till it thickens; then adding ten ounces of yellow wax and a pint of olive oil.

Collyrium lithargyri acetati.—1. Let ten drops of the water of acetated litharge be added to four ounces of rose water; 2. To the above let twenty drops of camphorated spirit be added; but mix the spirit with the acetated litharge before the water, which must be added afterwards, to prevent the camphor from separating.

Linimentum lithargyri compositum.—℞. Unguenti lithargyri cum aceto ℥ss. camph. gr. viij. cerussæ acetatæ gr. xvi opii pulverizati gr. viij. m. with this the inflamed edges of the eye-lids are sometimes ordered to be anointed at bed-time.

Lotio lithargyri acetati camphorati. See Ambusta.

Emplastrum lithargyri.—See Emplastrum commune, and Emplastrum.

Lotio lithargyri acetati, is made by adding one ounce of rectified spirit of wine, to two pints of distilled water, mixed with two drams of the water of acetated litharge; two drams of proof spirit, added to the same quantities of the other ingredients, forms the aq. lithargyri acetati composita of the London Pharmacopœia.

Cataplasma lithargyri acetati. See Plumbum.

Ceratum lithargyri.—℞. Emplastri lithargyri; adipis suillæ āā ℥iv. ceræ flavæ ℥ss. colliquantur, et quando fere frigida fiat mixtura, adjiciantur aquæ lithargyri acetati ℥ij. agitentur simul donec frigescant. For superficial sores, or ulcers whose edges are inflamed, this application is much recommended.

Unguentum lithargyri acetati, made by adding half a dram of the aqua lithargyri acetati to an ounce of unguentum ceræ, is applied to small ulcers whose edges are in a state of inflammation, and preferred to the unguentum cerussæ acetatæ, because it is more readily made, and does not soon grow rancid. See Nutritum unguentum.

Unguentum lithargyri compositum.—℞ Emplast. litharg. ℔ss. adipis suillæ pp. ℥iv. olei olivæ, unguenti ceræ, āā ℥vi. aceti uncias quatuor; aquæ lythargyri acetati ℥ij. After the unctuous ingredients are melted together and suffered to cool, the water of acetated litharge, and the vinegar, are to be gradually incorporated. This ointment is applied with great effect in inflammations of the skin.

Ceratum lithargyri acetati.—Take water of acetated litharge, two ounces and an half by measure; yellow wax, four ounces; olive oil, nine ounces by measure; camphor, half a dram: rub the camphor with a little of the oil: melt the wax with the remaining oil; and, as soon as the mixture begins to thicken, pour in by degrees the water of the acetated litharge, and stir constantly till it is cold: then mix the camphor previously rubbed with oil. Ph. Lond. 1788.

LITHI'ASIS, (from λιθος, *a stone*). The Gravel or Stone; more commonly the disposition to this disease. (See Calculus and Adamita). Also a tumour on the eye-lid, containing a hard concretion between its coats.

LITHIAS, (from λιθος, *a stone*). Lithiat. Salt formed by the union of the lithic acid, or acid of the calculus and different bases.

LITHODE'NDRON, (from λιθος, and δενδρον, *a tree*). Coral; from its resembling a petrified branch. See Corallium.

LITHOEIDES, (from λιθος, and ειδος, *form*; from its hardness). See Temporum ossa.

LITHONTRIPTICUS, (from λιθος, *a stone*, and θρυπτω, *to break*). An appellation of medicines supposed to break or dissolve the stone in the bladder; *calculifragus*. Though the different stones generated in the human bladder may require different solvents when out of the body, and though art hath not yet afforded a medicine, which, when injected into the bladder, will, without injury, dissolve the contained stone, we must not conclude that no medicine has this power, when taken into the stomach, for the solvents already mentioned (see CALCULUS) certainly produce some effect on the urine; and more powerful ones may be found, which will destroy the stone, without hurting the human body. The water into which the boiled white of egg melts will liquefy myrrh, but will give no uneasiness to the eye.

We have spoken already of the greater number of lithontriptics, particularly the alkalis and the bitters, which act, as we have said, by checking the acidity in the stomach, on which the formation of calculus appears to depend. To the authorities before quoted, that the alcali penetrates with undiminished properties to the bladder, or at least with properties which arise from its union with the lithic acid, we may add that of professor Mascagni, of Sienna, supported by that of Hufeland. The pure kali, it is remarked, may be taken in the quantity of a dram daily, in a pint of veal broth, or a quart of pure water; and the carbonated kali in three times that dose. The liquor lithontripticus Loosii consists of a dram of muriated lime dissolved in two ounces of pure water, of which thirty drops are to be taken four times a day, and the dose increased as the stomach can bear it. The aerated water, viz. water combined with carbonic acid gas, or with carbonated alkali and this gas, in excess, have been often used with success as lithontriptics.

LITHOPHY'TON, (from λιθος, *a stone*, and φυτον, *a plant*). A LITHOPHYTE, *keratophyton coral*; a species of plant of a horny substance, seeming to be of a middle nature betwixt wood and stone.

LITHOPHY'TON NIGRUM. See CORALLIUM NIGRUM.

LITHOSPE'RMUM, (from λιθος, and σπερμα, *semen*; from the hardness of its seed). *Milium solis*, *Ægonychon*, *atonychum*, GROMWELL, GRAYMILL, LITHOSPERMUM OFFICINALE Lin. Sp. Pl. 189, is a rough plant, with stiff branched stalks, oblong acuminated leaves, set alternately without pedicles, and whitish monopetalous flowers, scarcely longer than the cup, followed by roundish, hard seeds. It is perennial, grows wild in fields, and flowers in May and June. The seeds are diuretic; but rarely used. See Lewis's Materia Medica. It is also a name for the *lacryma Jobi*.

LITHOTO'MIA, (from λιθος, *a stone*, and τεμνω, *to cut*). *Cystotomia*. LITHOTOMY, or cutting for the stone.

This operation was performed in the time of Hippocrates, but confined to one family; and, in the oath to be taken by practitioners, this operation is forbidden, apparently, because those to whom so delicate an incision was familiar would perform it more dexterously. The method employed we shall soon describe as that with the "lesser apparatus." This method was improved in the sixteenth century, by Joannes de Romanis, whose operation was styled that with the "*greater*," as it was a more complicated "*apparatus*." It is described by Marianus Sanctus, who wrote so clear and comprehensive a description of the operation, with the parts concerned, that it includes every method of opening the bladder, and very plainly hints at the improved lateral method. The high operation was first proposed by Franco, a French surgeon, in the same century. The various inconveniences which attended each rendered the attempt uncommon, till a French priest, Frere Jacques, probably catching the hint from Marianus, attempted the lateral method; which, though unskilled in operations, and indifferently provided with instruments, he executed with a success which excited the applause of the world, the indignation, and at last the emulation, of the faculty. Various improvements have been since made, which we shall notice in their place.

We have already spoken of the symptoms of CALCULUS, vide in verbo, nor need we add to them, since the ultimate decision depends on the sound. This is, in fact, a part of the operation.

When a stone is suspected to be lodged in the bladder, and a fuller examination is necessary, an instrument called A SOUND is introduced into the bladder, if possible, to feel the stone. For this purpose, Mr. Sharp directs "the patient to be laid on an horizontal table, with his thighs elevated, and a little extended: the sound, previously warmed and oiled, is then passed, with the concave part towards the operator, until it meets with some resistance in the perinæum, a little above the anus: it must then be turned without much force, pushed gently on into the bladder; and if it meets with an obstruction at the neck, its extremity is raised upwards, by inclining its handle. If it do not then slip in, it should be withdrawn a quarter of an inch, the fore-finger introduced into the rectum, and the point lifted up, which will facilitate its admission." See CATHERISMUS.

When the sound enters the bladder, it must be moved round in every direction. It sometimes at once strikes against the stone, and by no artifice is the stone again found. Sometimes none meets the instrument. As its weight may drag the bladder down on the rectum, the finger should be introduced into the gut, and that part of the bladder raised, or the body should be moved into different positions. We have remarked, that in discovering a stone we are more often indebted to chance than to skill; but, if once found by an experienced surgeon, the operation may be performed. We say by an experienced surgeon, since it is said that pieces of sand may strike against the catheter, and give the sensation of a stone. This, however, will not mislead a person who has once felt it. The sensation imparted by the instrument is not decisive of the size of the stone; and a small stone is often as readily found as a large one: but if inclosed in a sac, or if adhering to the bladder, the wrinkles of the inner coat defend it, and the sound will not detect it. If the patient uses some exercise before the search, it may detach the stone from slight adhesions.

After the operation, children relapse more frequently than adults; and adults run greater hazards in the operation than children.

The method employed from the first attempts to ex-

tract the stone has been called the Celsian, sometimes the Guidonian, operation, cutting upon the gripe, or with the lesser apparatus. This operation will appear to be an obvious one; but the term apparatus is improper, since it only requires a common scalpel, and occasionally a hook. The child, for it is confined to children, though Paulus of Ægina observes that he has practised it in a more adult age, is held in an oblique position, and the finger, introduced into the rectum, is employed in pressing the stone forward against the perinæum, and confining it. The operator then cuts on it, and extracts it, assisting the extraction, if large, with the hook. Heister tells us, that he continued to employ this mode of operating in young subjects. The operation was too simple perhaps for modern refinement, but it had also some inconveniences. It was not easy to find the stone from the rectum, or to confine it against the perinæum, for the time necessary to extract it. The operation also was confined to young subjects, where the parts were thin, and the pressure of the stone against the very sensible bladder was often followed by mortification.

The method of De Romanis, or with the greater apparatus, was suggested by the facility with which stones are extracted from the female bladder, in consequence of the greater size of the urethra, and its running in a less curved direction. He supposed that if the urethra in men could, by any operation, be so far curtailed, as to resemble this canal in women, the operation would be equally easy. This method was discovered about the year 1520, but not publicly described by Marianus till fifteen years afterwards. We are expressly told, that the urethra must be divided from a little above its curvature, till the incision reaches the curvature. Then the urethra is strait and dilatable. It is consequently dilated by proper instruments, and the stone extracted. The plan appears plausible, but it seems, on the whole, impracticable to extract a large stone in this way; and we are led to suspect that De Romanis, under the pretence of dilating the urethra, really divided the neck of the bladder. Whether he was aware of this division, and dared not direct it, since Hippocrates had spoken of wounds in the bladder as fatal, Aphor XVIII. lib. vi., and Celsus had repeated the observation, V. xxvi. or that it was an accident which accidentally followed, is uncertain. Le Dran however found, on dissection, that, in almost every instance, the neck of the bladder was split or divided; and Falconet, with other authors, have contended, that this division was intended, though dilatation only was described.

The inconveniences of this operation are too obvious to be detailed. Were dilatation only meant, the effect of this violent and continued distension would be incontinence of urine. Were laceration, as must be very often the case, to take place, mortification would generally ensue, and such we find was frequently the consequence. At least the greater number of patients died; and these fatal events gave an importance to the improvement first attempted by Frere Jacques. But one other operation was previously suggested.

Peter Franco, already mentioned, operating on a child of two years old, found the stone too large to be removed through the wound: accident suggested the possibility of opening the bladder above the pubes, which he effected, and extracted the stone with success. Yet alarmed, apparently, at his own temerity, he never repeated the attempt and dissuaded his followers from the operation. Even candour might suggest that he really failed; but, when it was recollected that, just above the pubes, the peritonæum did not cover the bladder, and that, of course, it might be opened, without opening the cavity of the abdomen; when to this was added, that the bladder, when dilated, rose far above the pubes, and that a wound might be safely made of an extent to extract any stone which might be contained in that cavity; it did not appear to be a very extravagant attempt. In fact, after Hildanus, Riolan, Dionis, and others, had given a reluctant consent to the trial, and admitted its safety, it was often attempted, before it was publicly recommended, by James and John Douglass, and practised by the latter, by Heister, by Cheselden, and others, in the former part of the eighteenth century.

There are many objections to this method; but, on again going over the subject in the original authors, for the purposes of this short history, we were surprised to find them so few and inconsiderable. It is certainly not necessary to distend the bladder very considerably; yet, on the whole, it is expedient to do so, and to retain the urine for a time longer than usual, several days previous to the operation, to give the bladder greater facility of distension. The distension need not, however, be so great as to injure its tonic power. The operation indeed, for reasons which we cannot explain, has not usually succeeded, when the patient has exceeded the age of thirty, or in those whose bladders are small. When the kidneys are diseased also, it is said that the modern method succeeds better. A singular and unexpected inconvenience, however, which the advocates of this operation endeavour to elude, is the difficulty of healing the wound. The muscular fibres of the bladder are circular, more thick and strong round the sphincter, in fact thus forming the sphincter itself. When the distension of the bladder therefore excites the action of its fibres in general, the resistance is less at the wound above than at the sphincter below; and indeed it is so little at the wound, that when the high operation has followed, at the interval of a day, the puncture through the perinæum, the urine is discharged above. The dressings are therefore constantly wet, and the wound soon becomes fistulous.

But whatever may have been the advantages or inconveniences, they have all yielded to the operation proposed by Frere Jacques, whose name it has been said was Beaulieu, and who came to Paris in 1697 from the provinces, destitute of money, clothes, and victuals. He was of an open, ingenuous temper, great simplicity of manners, requiring only what would repair his instruments and mend his shoes. His operation is that which we shall soon describe as the *lateral*, but his instruments were coarse, often a razor, or a common pen-knife; his manner rash and violent, without any fixed plan, or any knowledge of the anatomy of the parts. He soon lost his credit at Paris, and repaired to Holland, where he scarcely succeeded better; but we find him in Germany, fifteen years afterwards, greatly improved, and very successful. It is said, that he had been the servant of an itinerant practitioner,

from whom he had learnt the art, which, from want of anatomical knowledge, he was unable at first to practise with advantage.

The physicians of Paris, though they did not treat the good friar with much candour, artfully availed themselves of his hint. The same operation was supported by Meri, but first practised by Mareschall. The lateral operation was soon improved by Rau of Amsterdam, by Heister, and Cheselden; and, in its present state, has superseded the three former. On this account we have not described them more particularly; but it was necessary, in giving a general view of the subject, to notice the attempts and errors of others. If our readers derive from this comprehensive sketch as much entertainment and improvement as the author has done, they will not regret the little time they will have employed in the perusal.

The lateral operation is described by Mr. Sharp in the following words from Mr. Cheselden: "The patient being laid on a table, with his hands and feet tied, and the staff passed, as in the old way, let your assistant hold it a little slanting on one side, so that the direction of it may run exactly through the middle of the left erector penis and accelerator urinæ muscles; then make your incision through the skin and fat, very large, beginning in one side of the seam in perinæo, a little above the place wounded in the old way, and finishing a little below the anus, between it and the tuberosity of the ischium. This wound must be carried on deeper between the muscles, till the prostatæ can be felt, when searching for the staff, and fixing it properly if it had slipped, you must turn the edge of the knife upwards, and cut the whole length of that gland from within outwards, at the same time pushing down the rectum with a finger or two of the left hand, by which precautions the gut will always escape wounding; after this, introduce the forceps to take out the stone. After the operation is ended, if there is an hæmorrhage from the prostate gland, a silver canula of three or four inches long, covered with fine rag, may be introduced into the bladder, and left there two or three days; for it rarely fails to check it:—the patient may also take an opiate. If the wound does not bleed, a little dry lint, or a pledget of digestive, may be laid in it. If a pain is felt near the bladder soon after the dressings are finished, a bladder of warm water may be applied over it; and if it increases, as there will be much danger therefrom, bleeding and clysters will be necessary."

The present improved practice demands, however, a minuter detail. When a stone has been discovered by the sound, and the operation is determined on, every source of irritation must be removed. The patient, if plethoric, should be bled, the bowels emptied by mild, but sufficiently active, laxatives, interposing a dose or two of calomel, and giving some doses of helleboraster to evacuate worms, should any be present. The warm bath and opiates are advised occasionally, but are apparently unnecessary. The diet should be light and mild, and diluent liquors drank freely. It is recommended that the bladder be moderately filled previous to the operation, that, in the incision, the exterior part only should be wounded: but as the incision is made on the staff, this appears to be an useless refinement.

The patient is placed on a table, about three feet high, and bends forwards so as to take each foot in the corresponding hand; the wrists and ancles are respectively confined by a broad tape. The buttocks are then, by pillows, raised above the shoulders, and brought forward a little beyond the table.

The sound is introduced, and the stone again sought for. If it was before certainly discovered, though it should not be at this time found, the operation generally proceeds; but if the slightest doubt existed in the previous searches, and it cannot now be felt, a prudent surgeon will defer the operation. If it be determined to proceed, the surgeon makes an incision from the symphysis of the pubes, just below the scrotum, downwards and outwards to the part between the anus and the tuberosity of the ischium, a little below the basis of the process. His next incision he carries nearer the raphe and anus, to avoid dividing the pudica. He thus divides the transversalis penis and part of the levator ani, so as to enable him to feel the prostate. He must guard against cutting the crura penis, which he can easily feel, and the rectum, which is best secured by introducing a finger into it.

He must now feel for the grooved staff, which his assistant must keep against the side of the raphe, by pressing its handle back against the right side of the patient's abdomen. The operator must find the staff steadily opposed to him, from the bulb of the urethra to the prostate gland, and on this he must cut, from below upwards, till the staff can be felt perfectly bare, and the incision will admit the finger, which not only keeps the parts stretched, but guards the rectum from injury.

The next step is to divide the prostate gland and the neck of the bladder. This is sometimes performed by the knife, but the gorget, or, as the French call it, the gorgeret, is employed for the purpose. Its beak is fitted to the groove of the staff, and along it this hollow conical instrument was forced into the bladder, tearing in its passage the neck of the bladder and the prostate, till Mr. Hawkins bent the edges a little more outwardly, and gave them an edge. This *cutting gorget* is now preferred. As the groove in the staff is continued to its end, the beak of the gorget slides easily off; and this part of the operation is so nice and important, that the operator usually chooses to manage both instruments himself.

When the gorget is in the bladder, the urine flows out, and the operator usually attempts to feel for the stone with his finger. Whether he can discover it or not he introduces the forceps, and attempts to take hold of it; opening the forceps when he perceives them touch the stone, and cautiously sliding a blade under the stone, the other is of course over it. The forceps are rough at the hollows, and finely polished between these and the rivet, so that if the stone comes near the latter, it slides to the former. The operator must hold the stone with sufficient firmness to prevent its sliding, but not so closely as to break it, if brittle, and must extract it slowly and steadily. In general, one blade of the forceps should be under the symphysis of the pubes, and the other obliquely below. When the stone is small, it often falls below the line of the instrument; and, in this case, some operators recommend bent forceps, but it is better to introduce the finger

into the rectum to raise the stone, for by the bent forceps the bladder is often injured. Should the blades of the forceps appear distant, it is probable that the stone is large, or that it is held disadvantageously. The last is most frequently the case, and the operator should therefore loosen his hold in order to take it in a more convenient position. It has scarcely ever happened that the stone is too large to be extracted, if drawn forward cautiously, assisted by the finger. Should it slip and fall back at the edge of the wound, the sound and the gorget must be again introduced to guide the forceps.

If the stone is broken, the larger pieces should be extracted by the forceps, and the smaller with a scoop. Afterwards warm water is to be injected, and the patient raised to an upright posture. We think, however, that the anxiety for evacuating the smallest particles has been too great, and that their discharge may be safely trusted to the first flow of urine.

If an artery bleeds, it must be confined by a ligature; but if this is impracticable, a roller should be placed in the wound, preserving a passage for the urine by a canula. The body should then be raised, so that the wound may depend; and in this state the patient must be placed in bed.

The operation sometimes fails by the incision being made too far towards the urethra; for wounds in the urethra cannot facilitate the extraction of the stone; and, in these instances, the bladder is opened imperfectly, and the gorget slips into the cellular membrane. The urethra is indeed divided by the cutting gorget, with the neck of the bladder; but the perfection of the operation consists in making a fair and proper opening into the bladder itself. Sometimes, when the operator has not made a fair, bold incision, too much is trusted to the gorget, and the bladder is lacerated. We know from De Romanis' operation, that lacerations of the bladder are not always fatal, as well as from the lateral method, previous to the introduction of the cutting gorget. But there is much reason to believe that such lacerations are at least dangerous, and probably some of the fatal events may have been from the mortification subsequent to such violence.

Another error is carrying the incision too low, or in the lower part too near the raphe, by which the rectum is wounded, and the fæces afterwards constantly discharged from the wound. The error is not indeed fatal, but the future life is truly miserable. The place at which the proper incision must be made is indeed limited; but it is so nicely defined, that we have heard a professor declare he could perform the operation in the dark; and we once knew a celebrated operator who remarked, that he declined the operation, rather from the bluntness of his touch than of his sight.

After the operation tired nature sinks to rest; but from forty to fifty drops of laudanum are usually given to take off irritation. After a few hours, however, pains, apparently spasmodic, come on in the lower part of the abdomen. These are relieved by anodyne clysters and fomentations. Should the pain increase, and the belly become hard, the case must be treated like enteritis; but anodynes may be more freely given, and warm clysters frequently thrown up. The warm bath is in these circumstances often useful. In many cases, however, notwithstanding every care, mortification comes on, the wound appears foul and livid. In better circumstances it looks healthy; in a day or two the urine is discharged from the urethra, and a cicatrix is formed in about six weeks or two months. Incontinence of urine, which often follows, is relieved by tonics and cold bathing.

Calculus in females is by no means a common complaint, and the operation is rarely required. When the neck of the bladder and the urethra are opened from the vagina, great inconveniences occur in future labours, from the contraction induced by the cicatrices; but, when the operation *is* performed, these parts are usually divided by the cutting gorget. We suspect that, in women, what is called the high or De Romanis' method would be most advisable; but as the urethra is so easily dilated, there are few stones that could not be extracted without cutting.

Mr. Bromfield describes the following method of dilating the urethra, apparently better than by means of tents. With the assistance of a straight, blunt, director, he introduced into the bladder the closed end of the apendicula intestini cæci of a small animal; and leaving out, at a proper length, the open end, he filled it with warm water by means of a syringe, and prevented the water's escape by a ligature. He then, by twisting the exposed end of the tube, forced the contained water forwards, and this operation was repeated from time to time, till the neck of the bladder was so much opened, that the forceps might have easily been admitted, if required. The stone however was propelled by the urine, and the instrument was not necessary. After the passage of the stone, the parts were fomented with warm milk, and with camphorated spirit of wine. Very little inflammation came on, and no disagreeable symptom. See his Observations and Cases, vol. ii.

Mr. Gooch extracted a stone of four ounces weight, through an incision which he made from the vagina into the bladder. This operation was attended with very little trouble, either to himself or the patient; the ulcer soon healed by the use of soft balsamic injections, and no inconvenience was observed after the healing of the parts. See Cases and Remarks, vol. ii. p. 182, &c.

Stones impacted in the urethra are often discharged by the efforts of nature, and it is frequently astonishing to what a degree the canal may be dilated. Gentle means are therefore first necessary, and oily frictions, gentle pressure, with the semicupium, and large doses of opium, will often succeed. If an operation is required, the skin should be drawn forward, and the urethra divided on the stone. The skin, when restored to its former position, will prevent the urine from flowing through the wound, which will often heal by the first intention. The operation should not, however, be so long delayed as to allow inflammation to come on, for mortification would be the consequence. When the stone is impacted near the neck of the bladder, the operation is the same as cutting on the gripe. When near the orifice of the urethra, the canal may be dilated by elastic forceps. When near the scrotum, it should be either pushed backwards or forwards, and treated according to the plans already described.

See Sharp's Operations of Surgery. Sharp's Critical Enquiry. Heister's Surgery. Bromfield's Cases and Observations, vol. ii. ch. 8. Le Dran's Operations. Heister's Dissertation on the High Apparatus. Bell's Surgery, vol. ii. p. 41, &c.

LITRON. NITRON. See ANATRON.

LITUS, (from *lino, to anoint*). See LINIMENTUM.

LIVER OIL. See OLEUM JECORIS ASELLI.

LIVIDUS MUSCULUS, (from λιϐος, *blackish*, from its colour). See PECTINEUS.

LIX, (from λιξ, *light;* or from the Hebrew term *lus*). See CLAVELLATI CINERES.

LIXIVIATIO, the separation of salts by solution.

LIXIVIUM, (from *lix, wood-ash*). A LEY. That is, water impregnated with the salts of burnt vegetables.

LIXIVIUM TARTARI. See KALI AQUA.

LIXIVIUM SAPONARIUM. See KALI PURI AQUA.

LOBELIA. An American plant named in honour of Lobel, found in woods and dry marshes. With the root of the *lobelia syphilitica* Lin. Sp. Pl. 1320, the American Indians cure the most virulent pox. Five or six of the plants are boiled in water, and the patient drinks as much as he can of this decoction, in the morning, and during the day. It soon purges, and the strength of the decoction is increased or lessened as the patient can bear the evacuation. If any part is sore, it is to be washed with this decoction, and thus in two or three weeks a cure is performed. Every part of this plant abounds with a milky juice, and has a rank smell. The root, which is the part preferred in medicine, in taste resembles tobacco, and sometimes excites vomiting. A handful of it, dried, is boiled in twelve pints of distilled water, till they are reduced to eight. The patient begins with half a pint, morning and evening, then more frequently if the purgative effect is not too violent. Should it be so, the medicine must be omitted for three or four days, and then again taken, till the cure is completed. The ulcers are to be washed with a decoction of the root, and if deep and foul, sprinkled with the powder of the inner bark of the *ceanothus Americanus* Lin. Sp. Pl. 284. We owe this description to Sir W. Johnson's influence, who received it from the American Indians. The practitioners of their country, however, do not repose in it much confidence, and seem to think its purgative effect the most striking.

LOBELLUS, LOBULUS, (a dim. of *lobus, a lobe*). A SMALL LOBE. The cells of fat are called *lobuli adiposi:* and the extremities of the bronchiæ, which end in little knobs, are called *lobuli pulmonum.* Winslow calls the lobe of the ear *lobus*, or *lobulus*. See AURICULA.

LOBUS ECHINATUS. See BONDUCH INDORUM.

LOCALES, (from *locus, a place*). Diseases that affect, or have their seat, only in a particular part of the body. See MORBI ORGANICI and PLAGÆ.

LOCALIS MEMBRANA. See PIA MATER.

LOCHIA, (from λοχευω, *to bring forth*). The DISCHARGES OF THE UTERUS AFTER CHILD-BIRTH, *gynæcia*, the third species of Dr. Cullen's *menorrhagia*, which he defines, a sanguinary menorrhagia in lying-in women. This discharge arises from the distended vessels, and proceeds till the removal of the distension admits of their contraction. In weak, exhausted constitutions, the discharge often continues for several days, and then only becomes a disease. In healthy habits it continues to flow freely for an hour and more, and the discharge afterwards lessens; in a few days it becomes less red, and then greenish. The redness begins to disappear when the breasts fill with milk. Its quantity is generally less after a miscarriage than when a woman goes her full time; and it sooner stops when a woman gives suck, than when she does not.

The *lochia* may produce disease when deficient or redundant. The discharge in many women is inconsiderable; but, as this appears constitutional, no inconvenience arises. When exposed to cold, or fever comes on, the discharge often suddenly stops, the belly swells and is sore; a heavy load is felt in the lower part of the abdomen and in the loins; the pulse is full and hard; pain in the head and back; a nausea, sometimes a vomiting, and a difficulty of breathing, come on. Feverish symptoms, particularly rigor, generally precede the suppression of the discharge, rather than follow it, and are the cause, instead of the effect; though the effect so soon follows, that it is often difficult to say which has preceded. Violent passions will sometimes check the lochia, and sudden grief be equally injurious. Errors in diet, and particularly indulgence in spirituous liquors, seems occasionally to bring on a spasmodic stricture, accompanied often with fever. A diarrhœa, or any other copious discharge, will also check the flow, though with less inconvenience. The nearer the period of the suppression is to that of delivery, the greater is the danger; and the occasional returns of the discharge are symptoms of recovery. The lochia sometimes diminish gradually, and sometimes cease at once. A delirium, in many instances, succeeds, occasioning convulsions and death, and if the patient escapes with life, she sometimes continues lunatic.

In general no medicine will force the return; and our chief attention must be directed to procure a relaxation of all the extreme vessels. When the patient is full and plethoric, the pulse full and hard, the face flushed, it has been the practice to bleed copiously, and this has been attended with success, even no fever has come on. It must, however, be done early and boldly, or it will be injurious. As this then is the case, the practitioner should be cautious in what constitutions he makes the attempt.

Emetics are often remedies of importance in this complaint, and should be repeated. To these the relaxing diaphoretics should succeed; and when any organ is overloaded, in consequence of the suppression, a blister applied to the part will be of singular service.

Cathartics are equally necessary, but we should be cautious lest too great a discharge from the bowels prevent a return of the salutary evacuation. It is necessary to relieve too great fulness, and equally proper to avoid irritation; and the infusion of sena with manna, or castor oil, so as to procure two or three motions, will be sufficient. We must then return to the mild relaxing diaphoretics, avoiding great heat, and admitting free air, if not too cold.

In the usual course, the milk is the vicarious discharge of the lochia. This evacuation should therefore be encouraged by warmth to the breast, by glasses; but, above all, by applying a strong, healthy child. If a flow of milk can be determined to these organs, the woman is secure. This, however, is often with difficulty obtained; and we more frequently find, that by removing congestions of every kind, supporting the patient with mild, nourishing food, she gradually re-

covers without a return. We need not add, that the disease is highly dangerous.

The spirits, whatever be the cause, are usually much depressed, and it will be right to cheer our patient in this period of peculiar distress and disappointment, by every favourable representation. In fact, however, the lochia are seldom wholly checked without accession of fever, which, from the time of its attack, is styled puerperal. (See PUERPERALIS FEBRIS.) The idea of checking the discharge by rising too soon, if cold be avoided, is truly ridiculous.

The lochia are sometimes redundant; but this disease must be distinguished from flooding during labour, from an attachment of the placenta to the os uteri, or other causes. The complaint we now speak of is the discharge subsequent to labour; and, in this place, we cannot add to what we have said in the article HÆMORRHAGIÆ, q. v. As the disease is rapid and violent, so our remedies should be proportionally active and continued. Fainting should not be obviated; and the practitioner should be particularly cautious that no irritation is kept up from any accumulations in the rectum. Ligatures on the lower extremities are not only useless, but soon become injurious.

LOCHIORRHŒ'A, (from λοχια, *the lochia,* and ρεω, *to flow*). An excess of the lochia after they become pale or whitish.

LOCULAME'NTA, (from *loculus, a bag*). The cells in the fruit of plants, where the seeds are lodged, divided by small partitions. See CAPSULA.

LOCU'STA, (quasi *locus ustus;* because from their influence corn is apparently burnt). The GRASSHOPPER; the outer covering of the flower and grain of corn which incloses the chaff; and a name for the LACTUCA AGNINA.

LO'HOC. See LINCTUS.

LO'GAS, (from λεγω, *to elect*). The white of the eye. See ADNATA.

LO'LIUM. (from λαιον ολειν, *segetem perdere*); *aira, gramen loliaceum, lolium tremulentum* Lin. Sp. Pl. 122; DARNEL, IVRAY, and COCKLE.

It is distinguished from other corn by its slender flat ear, but is not used in medicine. It is said to produce drunkenness if taken inwardly, and to prevent it if applied outwardly. It is certainly a narcotic, and imprudently taken has been highly injurious. See Raii Historia.

LOME'NTUM FA'BÆ, (from λειοω, *to levigate*). BEAN-MEAL, or bread made from it. See FABA MAJOR.

LONCHI'TES, (from λογχη, *a lance;* because its leaves are sharp pointed). *Filix aculeata, polypodium lonchitis* Lin. Sp. Pl. 1548. The root is aperient and diuretic, but not used in the present practice.

LONCHO'TON. See VITRIOLUM.

LO'NGANON, (from *longus, long*). See RECTUM INTESTINUM.

LONGI'SSIMUS DI'GITUS. See DIGITUS.

LONGISSIMUS DORSI, is a muscle named from its length, and has the same origin with the sacrolumbaris. It is inserted by several digitations into the ribs on the inside of the upper part of this muscle; between it and the complexus, the transversalis colli of Albinus is seated, which runs from the transverse processes of the vertebræ of the back to those of the neck, and raises the body.

LONGI'SSIMUS O'CULI. See OBLIQUUS MAJOR OCULI.

LONGI'SSIMUS PO'LLICIS MA'NUS. See FLEXOR TERTII INTERNODII POLLICIS.

LO'NGUS COLLI, (from λογχη, *a lance*), Rises from the two upper vertebræ of the back, and is inserted into the three upper vertebræ of the neck. It is made up of two plates, which decussate each other; and receives slips from some of the lower transverse processes of the neck. Its office is to bend the neck.

LONI'CERA PERICLYME'NUM. See CAPRIFOLIUM.

LOOK, a gum resin, whose source is unknown. It is a stimulant, and supposed to be a resolvent.

LOPE'ZIANA RADIX, a root brought from Goa, and first described by Gaubius in his Adversaria. It is brought to us in pieces, about two inches thick; of which the woody part is lightish and white, the medullary part more dense and reddish. The bark is rough, wrinkled, brown, soft, and apparently woolly, covered with a paler cuticle. Neither had any striking smell or taste; but it was found highly useful in colliquative diarrhœas, especially in the last stages of phthisis, appearing to act rather as a narcotic than an astringent. Gaubius thinks that it resembles the simarouba.

LOPHA'DIA, LO'PHIA, (from λοφος, *the hinder part of the neck*). See SPINA. Lophia sometimes signifies the upper part of the back of the neck.

LO'PIMA, (λοπιζω, *to decorticate*). See CASTANA.

LO'RA. See DEUTERIA.

LORDO'SIS, (from λορδος, *bowed* or *bent inward*), is an incurvation of the spine toward the fore parts; and the opposite to gibbosity. It is synonymous with lumbago, tabes dorsalis, and with a curvature of the legs inward.

LORICA, (from *lorica, a coat of mail*). A lute with which glass retorts, &c. are coated, before they are put into the fire.

LO'RIND MATRI'CIS. An epilepsy, or a convulsive disorder supposed to proceed from the uterus.

LOTIO, (from *lavo, to wash*). A LOTION; an external fluid application. When used on the eyes, it receives the name of *collyrium;* on the face, a *lotion;* on any other part, an *embrocation.* It is the appellation of clyster, and a name of the urine.

LO'TIO ALU'MINIS. See INFLAMMATIO.

LO'TIO AMMO'NIÆ MURIATÆ, LO'TIO AMMO'NIÆ ACETATÆ. See INFLAMMATIO MAMMÆ.

LO'TIO AMMO'NIÆ MURIA'TÆ CUM ACE'TO. See INFLAMMATIO.

LO'TIO SPIRITUO'SA. See AMBUSTA.

LO'TUS, (from λω, *to desire;* from the deliciousness of its fruit). The species used in medicine are noticed under the different names they bear.

LO'TUS A'RBOR, *Celtis Australis* Lin. Sp. Pl. 1478, the LOTE or NETTLE-TREE, grows in the southern parts of Europe; its berries are astringent.

LO'TUS URBANA, *trifolium odoratum, melilotus major odorato violacea, trifolium m. officinale* Lin. Sp. Pl. 1078. SWEET TREFOIL. The seeds, leaves, and flowers, are supposed to be anodyne and diaphoretic.

LOXA'RTHRUS, (from λοξος, *oblique*, and αρθρον, *a joint*). An obliquity of the head of bones, and the muscles annexed; of the joint to a degree of deformity, without luxation or spasm.

LUCE (EAU DE). See ALCALI.

LUCIDUM SAL, (from *luceo, to shine*). See GEMMÆ SAL.

LUCIDUS LA'PIS, (from the same). See BONONIENSIS LAPIS.

LUCI'NA, (from *luceo, to shine*). DIANA. See ALILAT.

LU'DUS HELMO'NTII, (from its resemblance to a die). A roundish mass, which seems to have cracked in drying, and the interstices to be filled up by a calcareous matter, which frequently rises above the surface. The whole is an argillaceous clay, and the mass consists of prisms of different sizes separated by the calcareous matter. See Haüy iv. 455.

Paracelsus described the cubic pyritæ, which are like dice, and called them *ludi*: Helmont mistook him, and supposed this stone, which is mostly divided into squares, by the cracks to be the substance. The spar that fills up the cracks is only to be used; for it is that alone which promotes urine, and is supposed a remedy for the stone.

LU'ES, (from *luo, to dissolve*, because it produces dissolution; or from the Hebrew term *laugh, to absorb*); the PESTILENCE in men, and the MURRAIN in beasts.

LU'ES DEI'FICA. One of the ridiculous names for the epilepsy.

LU'ES NEURO'DES CONVULSI'VA, a mild typhus.

LU'ES VENE'REA. The VENEREAL DISEASE. *Aphrodisiacus and Gallicus morbus, grand-gor, Patursa morbus Indicus and Neapolitanus.* Dr. Cullen names it *syphilis*, and places it in the class *cachexiæ*, and order *impetigines*, defining it a contagious disease, arising after impure coition, and a disease of the genitals; ulcers of the throat; corymbose papulæ of the skin, particularly at the margin of the hairy scalp, running in scabs and scabby ulcers; pain in the bones, and exostoses: one species only exists.

The source of this disease has occasioned much controversy, which, though not interesting in the result, is not without curiosity, and a slight attention to it is, on this occasion, necessary. It has been generally supposed that the venereal disease is a native of America, and was brought to Europe by Colon (Columbus); an opinion supported by the apparently minute accuracy of Dr. Astruc, whose evidence has not been carefully appreciated, neither has the whole been properly adduced. Columbus returned from his first voyage in 1494, and from his second in 1496; but there is not the slightest pretence that the disease was brought to Europe on his first return. His seamen are said to have been in good health; and in his life, collected from his own MSS., by his son Ferdinand, not a word occurs of any disease of this kind. Columbus too returned in March 1494: at this time the disease began to rage in Naples. He landed in Portugal; but in this country the disease did not appear till two or three years afterwards. The medical authors who wrote in 1496 mention it as a new disease "*then raging*," and some of these date it two years before. Hock de Brakenaw, a professor of medicine at Bologna, fixes its era in 1494; and he wrote only eight years afterwards. Cataneus, who wrote in 1505 at Genoa; and De Vigo, physician to the pope, whose work was published in 1512, both professional men, living almost on the spot, and so very near to its first appearance, fixed its earliest era in 1494. Pintor, a Spanish physician, who resided at Rome as physician to Pope Alexander VI. from 1492 to 1502, and who wrote in 1499, fixes its era also at 1494. Fulgosius, and some other authors, assign an earlier period to its appearance; but there is much doubt whether it was known before the end of 1493. Coccius, in a work published at Venice in 1502, dates its era in 14 5; and Jean de Bourdigue, the French historian, remarks, that it began to rage in *France* in 1495. The evidence of Columbus importing it, on his return from his second voyage, is more striking, but equally inconclusive. He returned in 1496, and Oviedo describes Moses Peter Margarita as affected "with the distemper." He observes, that he had so many pains that he *believes* he had also the pains of that disease. The two hundred and twenty-five soldiers who returned with him were undoubtedly in a wretched state of health; but previous to their embarkation they had been besieged in their camp by the Indians, and reduced to live on the most unwholesome food. In this state they crossed the Altantic. They are described not as having bubos, or cutaneous eruptions, but as of the colour of saffron.

It is singular, that if the venereal disease was of American origin it should not be traced by cotemporary authors to America. The new world was never accused of sending us this scourge till after the third voyage of Columbus, and then, indeed, it was received from thence, though undoubtedly first carried there: nor has any author shown that it was endemic in America. They indeed describe a cutaneous disease, which still exists, and is styled at present the *yaws*, of which the pian is apparently a modification.

The origin of lues, though seemingly connected with the discovery of America, is more strictly so with the expulsion of the Moors, who, driven from Spain, retired to Italy, and resided on the outside of the Appian-gate at Rome, when some of them clandestinely entered the city. The cutaneous diseases of that race engrafted on constitutions enfeebled by the plague, or united with the prevailing epidemic, apparently produced a new and distinct disorder. We shall sum up the whole in the words of a critic in a periodical journal, who has seemingly examined the subject with considerable attention in the original authors.

"The summary of the whole may be very short. In Italy, from the year 1491 to 1495, from the great inundations and severe droughts succeeding each other, pestilential fevers of the most fatal kind prevailed. The disease was styled the plague; but it appears to have been only a fever attended with the most violently putrid symptoms, among which were glandular abscesses, sores, and blotches, which discharged a malignant sanies. Those who recovered did not soon return to perfect health: the abscesses remained in a chronic form, and the whole mass of blood was infected. In this state the disease seems to have been communicated by infection, at first from the most general contact; and it was continued in this highly infectious state many years,

when it was attended with fever, often of the putrid kind. In better situations it sooner assumed a chronic appearance, and by degrees fixed itself in those parts, so as to be communicated only by personal connection. It is particularly observable, on a minute examination of the authors, that venereal symptoms mixed themselves with those of fever; or, in other words, the peculiar symptoms of that epidemic were such as have since discriminated syphilis. These symptoms continued subsequent to that fever, and were at last communicated by infection to those who never had the fever." See Astruc, Swediaur, and J. Foot on the Venereal Disease; Becket, Philosophical Transactions, vol. 30 and 31; Sanchez' Historical Investigation into the first Appearance of the Venereal Disease in Europe; Hensler's two Treatises on the American Origin of the Venereal Disease; Girtanner's Treatise, in 3 vols. 8vo. at Gottingen; Gruner's supplementary volume to the Aphrodisiacus of Luisinus, published at Jena; Perenottis' General and Descriptive History of the Origin, &c of the Venereal Infection, 8vo. Turin; Critical Review, vol. 65; Second Series, vol. 5 and 10.

The lues is at present received from infection only, and it usually shows its source by the tumour of the glands, interposed between it and the receptaculum chyli, as in the lymphatic glands of the groin, when received in venereal embraces; in the axilla when by wounds in the fingers, either in dissection or obstetrical labours; and in the neck when received by children sucking, or, as was formerly the case, by kissing. Where the skin is thin, as in the first and last instances, it is absorbed from the surface, but not from the fingers, unless there is a wound. Swellings of the lymphatic glands are not always the consequence of infection. Sometimes no stoppage occurs, and sometimes, as in the glands of the mesentery, either from anastomosis, or a lymphatic escaping a gland (see LACTEA VASA), no inflammation takes place. When children receive the infection from their mothers they are sometimes born with eruptions, chiefly discovered about the nates; but sometimes the disease is not discovered till after about three weeks or a month, when foul ulcers, blotches, or brown copper-coloured eruptions, appear about the mouth, the nates, or other parts. It is contended by some pathologists, that as there appears to be no infection in the blood, it is not probable that the fœtus should be diseased in the uterus. They consider, therefore, the infant as infected at the period of its passing through the vagina. If it were certain the venereal ulcers were never observed at the birth, we might admit this idea; but we think we have in more than one instance discovered them when the child was first washed; and though we admit the general mass to be without any discoverable taint, we know not but that some separation may take place in the maternal part of the placenta. It is sufficient at this time to admit that the child is often infected from the parent; and when the lues has continued, in either parent, for a long period, though then apparently free, the child will soon sink with numerous anomalous symptoms resembling, though distantly only, the lues.

As a running and discharge distinguish a gonorrhœa, so does a small, hard, irritable pimple usher in the more decided lues. This pimple, called a CHANCRE, q. v., is very general, we believe universal, but so little painful that it often passes unobserved. In this state it seems to convey no infection, and for a time no matter is certainly absorbed from it; but, at an indefinite period, the glands in the groin begin to swell, and a hard, painful cord, an inflamed lymphatic, may sometimes be traced along the back of the penis to the tumid gland (see BUBO). As the chancre occasionally passes unnoticed, so a bubo, as we have said, does not always occur, and the patient continues in a delusive security, unsuspicious of any disease: yet, if either are attended to, the disease might probably be checked in its bud. We would not, however, inforce such an idea; and we have rather recommended discussing bubos, for this reason, that we avoid a troublesome sore, and at last cannot escape from a mercurial course. It is not, however, by suppuration that the future lues can be averted, but by an extirpation of the gland; yet even this, for the reasons already assigned, would not offer a perfect security.

When neither chancre nor bubo call the attention to the disease, little inconvenience is felt for some weeks, sometimes many months. It has been contended that the infection may be dormant for many years; but this is certainly not true, and the idea has been cherished to excuse fresh infection. So frequently do patients deceive us in this respect, that it is not easy to fix the limits of the poison lurking unobserved. Perhaps from three weeks to six months some symptoms are usually to be discovered. If minutely examined, the first appearances are a sallow countenance, languor, and listlessness; copper-coloured spots on the breast, the arms, and the face, particularly on the forehead, and round the roots of the hair. These by degrees become scaly, occasionally discharging a thin fluid, which forms a scab. Soon afterwards an uneasiness is felt in swallowing, and a livid, flabby inflammation is observed in the throat, with deep ulcers, covered at the bottom with a slough, whose edges are ragged. There is no very marked difference between these and the ulcers of the angina gangrenosa; but they are distinguished by the absence of fever, and their continuance with little, sometimes scarcely any, loss of strength.

These ulcers occasion a hoarseness, and, if near the Eustachian tube, a deafness; and by degrees cover the fauces, or at least extend far over them. If still farther neglected, pains are felt in the bones, chiefly in the harder long bones, as the shin and arms, often in the skull, particularly over the eyes, and at the bottom of the orbits. A swelling comes on the shin bones, and sometimes on the os frontis, which, if neglected, corrodes into a foul ulcer, with a caries, penetrating to the brain. The ulcers on the shin and humerus assume the same appearance; the palate bone equally suffers, and the meat in deglutition is returned through the nostrils. The bones of the nose soon share a similar fate, and the nose sinks flat on the face. When the pains of the bones commence, the strength begins to fail, and, long before these extremities, is so much reduced that the patient crawls with difficulty. Hectic fever comes on, and death closes the loathsome scene.

In the earlier histories of this complaint the symptoms are more various and more dreadful; but on these we need not enlarge, as we have continued the description far beyond the point at which the disease is usually suffered to arrive. In the whole of this course the

blood is apparently untainted. It will not at least communicate the infection; for the matter is largely diluted, and probably sheathed by the albumen. When deposited in the glands, without this medium, its virulence is discovered. By what power it is deposited is among the arcana of physiology, which we can only approach by conjecture (see SECRETION). The poison itself seems to possess an assimilatory property; and, when in a considerable degree of concentration, to be highly deleterious, affecting, by its sedative powers, the nervous system, and even the mind; for a despondency, which the removal of the symptoms cannot relieve, is among its effects when far advanced.

These general appearances are often accompanied by still more distressing local ones. Though we have only mentioned the chancre as the first symptom, it is sometimes followed by painful ulcers, spreading, unobserved, under the prepuce, and gradually destroying the glans, sometimes the whole penis. A suppurated bubo is often equally destructive, forming numerous extensive sinuses which assume the appearance of cancer. Abscesses form in the perinæum, producing fistulous ulcers in the bladder, through which the urine issues, and tubercles, styled *condylomata*, round the anus, almost close the sphincter, or suppurate in fetid ill-conditioned ulcers.

If such and so distressing were the forms of the disease, and they were much more so at its first appearance, we cannot be surprised at the terror which seized the earliest practitioners, who witnessed its devastations without the power of being able to check them. Mercury, its only remedy, was, however, soon discovered, and applied, apparently, at first with a happy boldness by empirics; for *quacksalber*, the German appellation of this metal, was the root of the opprobrious appellation, a quack; though quackery now in a more extensive sense may be found among those who claim a regular education, as well as those whose medical merit lies in the diploma they have purchased.

Mercury is supposed to be a specific in this disease, in other words to oppose its course by properties peculiarly its own. If we bring this idea to a more rigorous test it will, we think, amount to this; that mercury, by a chemical combination with the virus, destroys its efficacy. This is a subject which, when treating of mercury (see ARGENTUM VIVUM), we reserved, and it is one which has occasioned much controversy. As usual, we must state the outline in a summary way. If mercury acts as a specific, its effects would probably be in proportion to its quantity; but in reality they are in proportion to its active state, or rather to its oxygenation. If, too, it acts in this way, its effects should be the same whether it produced any sensible evacuation or not, for if the poison was destroyed we should be indifferent about its discharge; but this is not the case, for it never cures without inducing some evacuation. The difficulties which stand in the way of its acting as an evacuant only are considerable. The poison is said to possess an assimilatory power, so that whatever portion is discharged, should any remain, the disease must recur. To this we can only reply that, probably, mercury promotes the evacuation more rapidly than the assimilatory power produces new supplies; and as the poison, when formed, is conveyed to the skin, from whence it is most readily eliminated by the mercury, we can easily perceive that in no long period the cause must be removed. Yet were this the only effect other evacuants should be equally serviceable; and indeed it will be alleged, that those which are determined to the skin, and possess a power of stimulating the extreme vessels, are powerful antisyphilitics. Of this kind it is said are the mezereon, the sarsa, the guaiacum, and probably the volatile alkali; those which operate by the intestines, as the lobelia, and some others, are supposed to be equally useful: but let their respective powers be urged so far as facts will warrant, or as the prejudices of their admirers will carry them, each will be found greatly inferior to mercury, except in a warm climate, where the disease is slight and manageable, often yielding to the power of nature alone. Again: were mercury a specific, its power would be peculiarly striking in the local complaints. It has been said, that the matter of a chancre mixed with a mercurial preparation will not convey the disease; but the experiment has not been so carefully made, or so attentively repeated, as to induce us to rest on it with confidence. But will any one contend, that in venereal sores mercury is not an application more certainly and speedily useful than any other? The smarting of an irritable chancre is greatly mitigated by the dry calomel in powder; the discharge of a bubo meliorated by mercurial ointment. It will be alleged that any warm stimulating application will be equally beneficial. In gonorrhœa, indeed, it will be so; but gonorrhœa and syphilis are certainly distinct in their causes, their progress, and effects. While, therefore, it is highly probable that mercury acts as a stimulant and a tonic, supporting more actively and steadily the action of the cutaneous vessels than any other medicine, we cannot deny that it has some chemical effect on the poison itself, either diminishing its virulence, or disposing it more readily for evacuation.

This peculiar quality is still in obscurity, but we may be allowed to suggest whether it is not at least connected with the oxygen of its preparations. We have occasionally indulged ourselves in conjectures, but have not suffered them to detain us long. We shall now, therefore, shortly remark, that mercurial preparations are, as already observed, active in proportion to the oxygen which they contain; that other substances containing a proportion of oxygen are useful in at least arresting the progress of the poison; that the sallow complexion, the inert, inirritable state of the sores, as well as the appearance of the matter discharged, show that there is a great deficiency of oxygen in the system. If then the mineral acids are only partially effectual in removing syphilis, may we not contend that besides the oxygen, the steady diaphoretic effect of the mercury is required. When the sarsa and mezereon fail, may it not be alleged that the oxygen is wanting? They do not indeed fail in warm climates, where, though the disease is milder, the oxygen is apparently more copiously separated in the ordinary functions.

To the numerous and crowded list of remedies for this disease, M. Acharius of Stockholm has lately added tar-water. Alone, it is said to cure, or to be a powerful auxiliary to mercury or the nitric acid. We need not attempt to connect this opinion with our former observations, till experience has more fully appreciated the value of the proposal.

In whatever way mercury acts, it is admitted to be the only remedy which we can depend on in this

climate. Various are the opinions respecting the preparation to be chosen, the forms of administration, and the conduct of the plan. Every practitioner has his predilections and his prejudices respecting particular preparations; but we are coming back to the earliest views, and it is now generally agreed that the mercurial pill, and the friction with mercurial ointment, are most commonly successful. Of the other internal mercurials, perhaps calomel is equally useful with any other; and though we have, for a long time, employed mercurius calcinatus, we know not that it is superior in efficacy; but to this part of the subject we must return.

In the earlier periods, mercury was employed so freely, or rather so rashly, that the most fatal consequences often ensued. The loss of the teeth and the injury of the sight were among the slightest of these; and sometimes a fatal apoplexy has supervened, which yet occasionally happens, though the event is peculiarly rare. Terrified by these events, practitioners began to think that mercury in very large doses was unnecessary; and the quacks at last contended that their boasted nostrums contained none. In their preparations, indeed, the most active mercurials are employed, and they depend on the colour and the density of their medicine to elude the detection of the mineral; but modern chemistry has too many resources to be so easily baffled, as our remarks in the article ARGENTUM VIVUM will evince; to which we could add some experiments of our own. Others, melioris notæ, assert, that they can cure the disease without salivation; and practitioners of credit do not often *require* confinement. Yet, in such cases, relapses we have found not uncommon; and though confinement may be sometimes dispensed with in warm weather, it will be more safe to enjoin it. The severity of the old process is greatly mitigated since the days of Pott, and the last author of that school who countenances it is, we believe, Mr. Howard. Yet when the disease has long continued, where the bones are greatly affected, and every part of the system seems to be contaminated, this severity should still be employed. Without it, in such cases, there is no safety. In more recent complaints, a milder course may be trusted; and a spitting, not exceeding a pint in a day, continued for about three weeks, or a month, will often effectually cure. It must, however, be remembered, that the longer the disease has continued, the more intimately it appears to have penetrated, the more active must be the salivation, and the longer should be its duration. In general, gargles, and any applications, except the mildest, should be avoided; for though the topical complaints will be sooner relieved, these should be left as indices to enable us to judge of the state of the constitution. In cases where discovery is dreaded from these local affections, this precaution may be disregarded.

It has been a question, whether, when other discharges are increased, salivation is necessary. When the cutaneous evacuation, or the urine, are evidently and copiously increased in quantity, it is highly probable that the disease will be equally removed. Yet no prudent practitioner will wholly depend on these discharges. We know only that mercury is accumulated in the system by its affecting the mouth; and unless accumulated, the disease will not be cured. Yet many persons no quantity of mercury will salivate, and to increase the dose beyond due bounds may be dangerous, as a most profuse and violent spitting sometimes attacks at once. In such instances, we have found it advantageous to employ the assistant medicines, as the mezereon, &c.; and to watch the progress of the local complaints. When these have yielded, and the constitution in general is amended, the omission of mercury may for a time be allowed, and it may at a future period be commenced with more success. When we have perceived from these indices that little has been gained, rubbing calomel on the gums, a practice recommended, we believe, first by Mr Cline, has succeeded, though troublesome ulcers in the mouth have sometimes followed.

When mercury has conquered the general disease, the local ones often continue troublesome. The sores in the throat are, indeed, frequently the effect of the remedy, and may be distinguished from true venereal sores by their being less deep and foul, with edges less ragged, or insensibly lost in the ephelion. These may be healed by discontinuing the medicine, and using gently astringent gargles. The nocturnal pains, the gummata, tophi et nodi, and the venereal excrescences, often continue after the constitution is wholly cleared. The mezereon will relieve in many instances the pains; and the warts must be treated, like any others, with caustics, or the knife. The gummata we have already described, and need only add in this place, that if the mezereon, with the topical application of mercurial ointment, does not succeed in reducing them, they will at least be no longer painful; but, should the patient still wish to be effectually cured, the surgeon may make an incision on the bone, and cut out the tumified part, bringing on a suppuration to complete the cure. The process is, however, painful and troublesome; nor is it advisable on the head, since the node often arises in the diploe of the skull, and each lamella is equally affected.

The doses of mercury must be managed with caution, and very slight ones first employed. If we give the mercury oxygenated by triture, about four grains of the blue pill of the Edinburgh pharmacopœia, which contains a grain of mercury, will be sufficient, if repeated three times a day. If calomel or mercurius calcinatus is employed, a grain night and morning at first, or two grains at night, guarded with a grain of opium, lest it should irritate the bowels, will be a proper dose. If the ointment is preferred, half a dram of the strong mercurial ointment may be rubbed in night and morning. In about a week or ten days, by either plan, the mouth will be slightly sore, and the repetition may be regulated by its degree, or by the violence or duration of the complaint. In many cases the bowels will be so much affected by the mercurial, that no doses of opium will check the pain or diarrhœa: in many the salivation comes on so rapidly that the effects on the disease cannot be depended on. Sometimes opium, sometimes the hæmatoxylon, the catechu, the kino, the oak-bark, or tormentil, will check the discharge on the bowels; and the Dover's powder, pulvis ipecacuanhæ compositus, with a warm regimen, and a flannel shirt, prevent its affecting too soon the mouth.

In each instance, we must proceed very cautiously with the medicine, to accustom the constitution to its irritation.

The other preparations chiefly in use are Plenck's powder, the solution of the sublimate, the mercurius acetatus, and alkalisatus. From these we seem to derive no peculiar advantage, nor are the two latter, as is pretended, less irritating to the bowels. Plenck's gummy solution of mercury sometimes appears to be so, but is not on the whole superior. The solution of the muriated mercury, introduced by the baron Van Swieten, was for a long time trusted. It affected the bowels only in a slight degree; and when its menstruum was corn spirit, it sat easily on the stomach. It soon appeared to check the disorder, but here unfortunately its merits rested. When the complaints were diminished, the medicine would effect no more, even though the dose was increased; and in some instances, even during its use, the worst symptoms appeared to return. Fumigations, which were formerly much employed, are now seldom trusted, and seem chiefly useful by bringing on, more rapidly, mercurial effects on the salivary glands.

In a very low state of the constitution, when hectic symptoms prevail, mercury is of doubtful efficacy; but cautiously and gradually administered, it does not increase hectic symptoms; and it is not difficult, even during the progress of phthisis, to arrest, a in great measure, venereal symptoms. Though its action on the salivary glands is necessary to show that it is introduced in sufficient quantities, yet when these are soon affected, as we have said happens in some constitutions from idiosyncracy, and very generally in scorbutic habits, there is no opportunity for its power being communicated very generally to the smaller vessels. In such cases it must be resigned, if a warm regimen and the relaxant diaphoretics, just mentioned, will not direct it to other excretories.

In these and similar cases we must apply to what may be called the accessory specifics, and we fortunately have some active medicines of this class. Among these we may reckon the MINERAL ACIDS, particularly the nitrous. The nitrous acid was warmly recommended to us from the experience of the Indian practitioners. Our expectations, often deceived by pompous promises, were not raised high when we were informed that its effects were equal to those of mercury; but, though far inferior, it is a medicine highly useful. The nitrous acid will not cure lues, but it will arrest the symptoms and restore the strength in those intervals when mercury can be no longer borne. It will sometimes in these intervals seem even to advance the cure, and we can truly add, that the methodus medendi has not for many years received a more powerful auxiliary.

The other accessory antisyphilitics are the bark, opium, china-root, guaiacum, sassafras, astragalus, lobelia, *lupulus*, dulcamara, sarsa, and mezereon. We have arranged them in what seems the order of their efficacy, commencing with the least powerful; omitting the volatile alkali, muriated barytes, the juniper, the cicuta, the green rind of the walnut, the bardana, and saponaria, as of very inconsiderable, if any, power. On the individuals of the former class we shall add a few remarks.

The Peruvian bark has, alone, no power of checking the progress of the syphilitic infection. Yet it is often highly useful in lues, when mercurial ulcers occur in the mouth; when the ulcers of suppurating bubos assume a livid appearance, or those in the perinæum are foul, with deep sloughs. It has been contended that it meliorates venereal symptoms; but, in reality, it only lessens their painful irritation by diminishing irritability. The cicuta, and the green rind of the walnut, in the second class, act in the same manner, if indeed they have *any* effect.

Opium has been celebrated as a certain antisyphilitic, and, in many instances, it has had apparently a powerful effect. This, however, is temporary only, and the symptoms have returned with increased violence. It acts like the former medicine by lessening irritability, and in some measure perhaps as a diaphoretic. In this way it is peculiarly useful in mercurial ulcers. The *china-root*, the *guaiacum*, *sassafras*, *astragalus escapus*, *lobelia syphilitica*, *lupulus*, and *dulcamara*, are not found to answer the high expectations formerly entertained of them. The three first are occasionally ingredients in diet drinks, and the three last are, in this country, scarcely ever prescribed.

The *sarsaparilla* has retained a considerable credit, and is even now generally employed. What its effects may be in a recent state we know not, but we have found its powers inconsiderable in this country, though we have given large doses in substance. It appears to be chiefly mucilaginous, with few sensible properties, which would lead us to suppose it active.

The *mezereon*, on the contrary, is a powerfully stimulating diaphoretic, from a plant strongly narcotic, and seems to combine the united virtues of the rest. It has alone often effected all that has been expected from the others, which in many instances seem to overwhelm instead of adding to its powers.

If we examine these antisyphilitics we shall find them in general narcotic; in a few instances merely mucilaginous, and in general diaphoretic. If the sarsa is not merely mucilaginous, it is diaphoretic. From each property we perceive that some advantages may be derived in lues; and when all are combined, the effects may be more salutary. In the mezereon we combine the diaphoretic and the narcotic; in the sarsa, the former with the demulcent; in juniper, the bardana, the sassafras, and the guaiacum, we have probably only the diaphoretic, or with a less degree of the mucilaginous; in the dulcamara, lupulus, astragalus, the green rind of walnut, bark, and opium, the narcotic only. The same views assist us in forming a judgment of their comparative merit; but their order was long since fixed by experience, before we had occasion to examine the source of their efficacy. Above all we must reflect, that those which have any claim to a diaphoretic power are given in decoction, by which the active particles are attenuated and conveyed to the skin; and these only are useful where the disease has penetrated to the minutest vessels.

Mr. Bell observes, in his Treatise on Ulcers, that those which are the result of a venereal taint of a long continuance, are singular in the appearance of their discharge. It is at first thin, but soon becomes tough and viscid; having a very loathsome, though not the ordinary, putrid smell, and a singular greenish yellow colour. In such ulcers as have a lues of long continu-

ance for their cause, we should depend on the effect of mercury given internally, contenting ourselves with such external applications as will keep the sore clean. In this manner the different ulcers are, as we have said, indices that the disease is eradicated from the habit. Venereal ulcers are apt to inflame, and are then painful; but a saturnine poultice will relieve the inconvenience, and the unguentum cereum Pharmac. Edinb. will be only required. If the ulcer is seated near a bone, the appearance of fungous flesh will lead to a suspicion of caries; and, besides the proper treatment for carious bones, mercury must be administered. These ulcers are often obstinate, though every venereal symptom is removed: and this is frequently owing to some other disease, which will require attention. The sores, however, will sometimes not heal from the effects of mercury, and then the bark, opium, or both, with a nourishing diet, a pure air, and moderate exercise, will usually succeed. If the sloughs on these ulcers are tough, dressings that gently stimulate will be required; and two drams of the nitrated quicksilver may be added to an ounce of the unguentum resinæ flavæ for this purpose. When a gland is the seat of an ulcer, a salutary suppuration is with difficulty produced, and the gland, at least the hardened part of it, must be destroyed by repeated applications of the argentum nitratum. See Bell on Ulcers, vol. vi. p. 381, &c.

An eruption of the skin is sometimes also the consequence of a free use of mercury, attended with a fever, usually idiopathic. The skin is affected with a prickling sensation, and a rash follows, which terminates in branny scales. The skin, however, is left in a state peculiarly tender and irritable, which is relieved by bark or opium, but, above all, by the mineral acids.

When venereal ulcers appear cancerous, fresh air, a fuller diet, abstinence from mercury, and hemlock applied outwardly, or given inwardly, will sometimes succeed. A more speedy effect has been observed from eating several lemons in a day. See some observations of this kind in the London Medical Transactions, vol. ii. p. 338, &c. Venereal ulcers in the throat may be conveniently relieved with the following: ℞. Hydrargyri muriati, gr. x. acidi muriatici, gut. v. tinct. lav. c. ℥i. m. cap. gut. v.—xx. bis. die, in aq. pura vel jusculi avenacei.

Astruc on the Venereal Disease, or Chapman's Abridgment of Astruc; Heister's Surgery; Fordyce's Elements, part the second; Falck's Treatise on the Venereal Disease; Fordyce's Review of the Venereal Disease; White's Surgery, vol. iv. p. 399, 423; Swediaur, Plenck, Howard, Bell, and Hunter, on Venereal Complaints; Pearson's Observations on the Effects of various Articles of the Materia Medica in Venereal Complaints.

LU'JULA, (corrupted from the diminutive ALLELUJULA, q. v.). ACETOSA.

LUMBA'GO, (from *lumbus, a loin*). Pain in the loins. See RHEUMATISMUS, and ARTHRITIS.

LUMBA'GO PSOA'DICA, and APOSTEMATOSA. See ARTHROPUOSIS.

LUMBA'LIS MU'SCULUS, (from the same). See PSOAS.

LUMBA'RES NE'RVI, (from the same). The LUMBAR NERVES pass out from the spinal marrow through the vertebræ of the loins, and become larger from the first to the last. The first lumbar nerve throws a large branch backward, and two filaments to the intercostal: the trunk of the nerve goes through the psoas muscle, then to the spine of the os ilium, at whose anterior superior process it throws off several branches to the muscles, and one to the spermatic cord in the male, and to the round ligament of the female. The first going to join the second, sends off two filaments; one of which goes to the spermatic cord, the other passes under the Poupart's ligament to the groin; from this the pain felt in the thigh during a fit of the stone is explained.

The second lumbar nerve lies on the inside of the psoas muscle, goes through its head, and runs along it; then passes through the annular aperture of the obliquus externus to the scrotum in males, and the labia in women. The second lumbar nerve joins with the third; and that again communicating with the fourth, forms the crural nerve. See CRURALIS.

The fourth and fifth lumbar nerves, and the three first sacral, form the sciatic nerve, which, passing out at the great sciatic notch, runs down between the tuberculum ischii and trochanter major, along the internal and posterior part of the thigh, between the biceps and seminervosus, as far as the ham, rather nearer the inner condyle of the os femoris than the outer. See CAUDA EQUINA.

LUMBA'RES ARTE'RIÆ go out posteriorly from the inferior descending aorta, in five or six pair, in the same manner as the intercostals. The upper ones send branches to the neighbouring parts of the diaphragm and intercostal muscles, and supply the place of semi-intercostal arteries; they are also distributed to the psoas, and other adjacent muscles; and, by perforating the oblique muscle, they become external hypogastric arteries. They also go to the vertebral muscles, and enter the spinal canal.

LUMBA'RES VE'NÆ proceed from the vena cava, near the bifurcation, and principally on the right side; sometimes from the left iliac vein; this branch communicates with the azygos and intercostal veins.

LUMBA'RIS EXTE'RNUS. See QUADRATUS LUMBORUM.

LUMBA'RIS INTE'RNUS. See PSOAS.

LUMBA'RIS RE'GIO. The REGION OF THE LOINS is the posterior external region of the belly, extending from the lowest ribs on each side, and the last vertebra of the back, to the os sacrum, and the neighbouring parts of the os ilium. The sides of this region are strictly called the loins, and include also the musculus quadratus lumborum on each side of the lower portions of the sacro-lumbares, of the longissimi, and latissimi dorsi, the musculus sacer, &c.

LUMBRICA'LES MU'SCULI, (from their resemblance to a worm); *vermiculares, fidicinales, flexores primi internodii digitorum*, the productions of the flexors of the fingers and the toes: originating from their respective tendons, after encircling the basis of each finger and toe they join with the extensors. Their office is, when the extensors have done their utmost, to finish the extension, and, when the flexors have done their utmost, to finish the flexion.

LU'MBRICI, (à *lubricitate*, from their slipperiness). The lumbricus, which abounds in the intestines of young persons, resembles so nearly, in its general ap-

pearance, the earth-worm, that it has been considered as the same animal. It is, however, distinct, and is the Ἑλμινς στρογγυλα of the ancient physicians, distinguished from the earth-worm by wanting the elevated ring in the middle of its body. The body of the ascaris lumbricoides, for this is its generic name, is round: its head furnished with three vesicles, placed in a triangular form; generally from twelve to fifteen inches in length, and about the diameter of a goose quill. The head may be distinguished by the three vesicles mentioned, and the triangular space between is the mouth of the animal. The tail terminates suddenly in a very sharp point, and near it the orifice of the anus may be distinctly seen. Near the middle of the body is a circular depression about three lines in extent, in which is an aperture like a small point. This band is most conspicuous when the body of the worm is distended, and it seems wanting when the body is collapsed. Just below the mouth are two small transverse clefts, which Bruguiere calls *stigmata*, and thinks them the organs of respiration.

Two longitudinal lines extend through the whole body of the worm, which are the tendons to which the semicircular muscles are attached. The animal, however, does not move, like the earth worm, by a vermicular motion, but curls its body in circles, from which it extends the head. A number of vesicles surround the intestinal tube, which proceeds, without any change of direction, from the head to the anus, but they do not extend beyond the depressed band. Below it the connecting medium appears to be a common cellular substance. These vesicles are filled with a mucous, probably a nutritious, fluid. The intestinal canal contains a dark green fluid, resembling the meconium of infants. But even from the lower part of the canal filaments appear to arise, which probably convey a portion of nourishment, though the great reservoirs are in the upper portion. The most singular part of the worm is what may be considered as its uterus. Just below the depressed band a white vessel is seen, which soon divides into two, and after running some way in a cylindrical form, they quickly become smaller, and at last are minutely convoluted, embracing on all sides the intestinal tube. These vessels, forced by the agonies of the worm through the particles of the abdomen, appeared to Mr. Church the young of the animal, which he, of course, considered as viviparous. It is, however, generally agreed that the lumbricus intestinalis is oviparous.

The lumbricus terrestris has but one vesicle, is flat towards the tail, and has bristles on its under side, which it can erect at pleasure. Its annular muscles are large, and of a dusky red; and on its under surface is a large semilunar fold of the skin, into which the animal can draw its head. It has also three lines on its upper surface.

The intestinal lumbricus is seldom solitary, but in very few instances appears to be injurious. Its source is unknown; for it has not been found in any other situation. When first discharged they are semitransparent, and of a dilute red colour, but they soon become yellowish. They are usually found in the jejunum and ileum, rarely in the large intestines, and still more so in the stomach. In each they appear to be escaping from the body, when fever renders their situation uncomfortable, or active anthelmintics force them with the mucus from their seats.

Lamarck Systeme des Animaux sans Vertebres; Histoire Naturelle des Vers par Deterville (suite de Buffon); Pallas de intra Viventibus; Hooper's Memoirs of the Medical Society, vol. v. See VERMES.

LU'MBRICI LA'TI. See TÆNIÆ.

LUMBRICO'RUM SEMEN. See SANTONICUM.

LU'MBRICUS TERRE'STRIS. (See LUMBRICUS INTESTINALIS.) The EARTH-WORM is supposed to have an antispasmodic and diuretic virtue. If worms are moistened with vinous spirits to prevent their putrefaction, and placed in a cellar, they deliquesce; and the liquor, when mixed with alkaline salts, is said to yield crystals of nitre. They have been employed for the same purposes as snails.

LU'MBRICUS E'DULIS. A species of lumbricus found on the southern sandy shore of Batavia, is considered as a delicacy; it is described by Pallas, who thinks it the same as the teredo, described in the twenty-sixth volume of the Philosophical Transactions. See Spicilegia Zoologica Fasciculus, x. 10.

LU'MBUS, (à *libidine*). The LOIN.

LU'MBUS VE'NERIS. See MILLEFOLIUM.

LU'MEN, (quasi *lucimen, à luceo, to shine*). The effects of light on the human system have not yet been explained. We have of late only begun to perceive with clearness the causes of its influence on vegetables and some chemical preparations. We find, in general, that light separates oxygen; that it changes the nitric into the nitrous acid, and the oxymuriatic to common muriatic acid. We find also that it deprives many preparations of their peculiar colour, particularly phosphorus; and it seems greatly to influence the process of crystalisation. Some preparations must be exposed to a strong solar light, as carmine; for a cloud, it is said, will spoil the colour, and the argentum fulminans requires to be exposed to the light of the sun for many days.

If we ascend to the vegetable kingdom, we shall find that the absence of light deprives the leaves of their colour; and Humbolt, who discovered some vegetables in the deepest shafts of mines, found that the shapes of the leaves were not the same. If plants, then, will grow without light, we must not consider their growth as wholly depending on the decomposition of water, in consequence of light; but we have reason to consider the colour as depending not only on the decomposition of the water, but of the carbonic acid gas also.

Animals confined without light are often of a white colour; but this must be confined to those who usually live in the open air; for the mole, the pangolin, and some others who scarcely ever see the day, are not white. The particular cause of this change has not been examined. It is not apparently from a deficiency of oxygen. Some animals emit light in their motions, and this light is connected with their life and activity, as in the lampyris, the glow-worm, the insects in oyster shells, and those which illumine the sea in a storm. In these it seems that light enters into the composition of those fluids to which their activity is owing, and, indeed, every fact now noticed shows that light is a body, and may form a component part of other bodies. We are not acquainted with the effects of light on the human body. We know that the oxygen is a power-

ful stimulus, and that colour, health, and vigour, are often in excess when this air is breathed; but it seems probable that this is the case when the oxygen is in a loose uncombined state, and that light is salutary in promoting its separation. These speculations are, however, uncertain, and it is still more so, whether light is really a component part of our bodies. When we reflect, however, that the general health is apparently connected with light, that the peculiar acid of the animal system, the phosphoric, has a powerful attraction for this element, and appears to contain it, not only in a chemical combination, but, when in the form of an oxide, unites with, and allows it to separate without decomposition, we may suspect it to be a more powerful agent in the animal economy than has yet been supposed.

For the physical properties of light, see Haüy Traité de la Physique, vol. ii.; Cavallo's Natural Philosophy, vol. iii.; and the article OCULUS. For the chemical, see Exeter Essays.

LU'NA, (from the Hebrew term *lun, the night*). See ARGENTUM.

LU'NA PHILOSOPHO'RUM. See ANTIMONIUM.

LUNA'RE OS, (from *luna, the moon*). The second bone of the first row in the wrist, because one of its sides resembles a crescent. See CARPUS.

LUNA'RIA, (from *luna, the moon;* from the shape of its leaves, like a crescent). An appellation of many plants whose leaves are reniform, but more peculiarly applied to the *osmunda* of Linnæus.

LUNA'RIS PILU'LA, (from *luna, silver*). See CAUSTICUM LUNARE, under ARGENTUM.

LUNA'TICA, ISCHU'RIA, (from *luna, the moon*). A periodical suppression of urine, noticed by Sauvages. See ISCHURIA.

LUNE'TRIA is, in the chemical jargon, a species of hectic, curable in one period of the moon.

LUPA'RIA, (from *lupus, a wolf;* supposed to destroy wolves). *Aconitum Ponticum folio Platani, Lycoctonum luteum, aconitum lycoctonum* Lin. Sp. Pl. 750. YELLOW WOLF'S BANE. Like the other species, it is poisonous.

LU'PIA, (from λυπεω, *to molest*). A kind of tumour like a ganglion, hard, and not peculiar to any part of the body: when it is in the inside of the eyelid it is called *chalaza;* when about the joints *lupia.* Dr. Cullen uses it as the generic term for wen. See NÆVUS.

LU'PULUS, (λυπη, *dislike;* from its bitterness), *humulus convolvulus perennis, humulus lupulus* Lin. Sp. Pl. 1457. The HOP. This plant hath hollow stalks, and broad serrated leaves, cut into three or five sharp-pointed sections. On the tops grow loose scaly heads, among which are small flat seeds. It is perennial, grows wild in hedges, and the bottom of hills, in various parts of Europe; but those used are cultivated in plantations. In August and September the scaly heads are dried in kilns with a gentle fire.

The scaly heads have a bitter, warm, aromatic taste, yielding their virtue to proof and rectified spirit, by maceration without heat; and to water, by warm infusion. The extract obtained from the spirituous tincture is an elegant bitter; but hops are only at present used for preserving malt-liquor. Like many other bitters, the cold infusion is more grateful than that made with boiling water; but the quantity must be larger. Hops have been suspected of a narcotic power, and there is said to be an act of parliament prohibiting their use in beer. On the other hand, a pillow of hops has been said to procure sleep. The Spaniards boil a pound of hop-roots in a gallon of water to six pints, and drink half a pint of the decoction, whilst in bed, every morning, as a remedy for the lues venerea. See Lewis's Materia Medica.

LU'PUS. The WOLF-CANCER; because it devours rapidly the flesh, like a wolf. It is the *noli me tangere* in the seventh order *tubercula* of Willan. See CANCER.

LU'PUS PHILOSOPHO'RUM. See ANTIMONIUM.

LUSCIO'SUS, and LUCI'TIOSUS, (from *luscus*). One who only discerns objects that are very near the eye. See NYCTYALOPS.

LUSITA'NICUM DECO'CTUM. See SARSAPARILLA.

LUTE'A, LUTE'OLA, (from *lútum, mud;* because it grows in muddy places, or is of the colour of mud), *struthium,* DYER'S WEED. *Reseda luteola* Lin. Sp. Pl. 643. The root, boiled with salt, dyes wool of a fine yellow colour. Dioscorides recommends it as useful in the jaundice, and, indeed, every thing yellow was employed in the same disease; but the present practice does not notice it.

LUTUM, (from λυτος, *soluble*). LUTE. CÆMENTUM. Many chemical vessels require to be covered with coating, to preserve them from being broken or melted in the fire, or to close exactly their junctures. These coatings are, in general, called *lutes.* Glass vessels may be covered with a mixture of equal parts of coarse sand and stiff clay, mixed with water and a little hair, so as to form a liquid paste, which must be spread with a brush upon the glass; and, when dry, covered with another coat, until the covering is sufficiently thick. When a glass is to be exposed to the action of the fire, a coating of fat earth and fresh horse-dung is recommended: the earth is suffered to macerate for some hours in water; and, when properly softened, it must be kneaded with the horse-dung into soft paste, to be spread with the hand upon every part of the retort. The horse-dung is useful, as containing a serous fluid, which hardens by heat, strongly connects all the parts together, and with filaments of hay, contributes to cement them very firmly. The dung must be fresh; for, when altered by fermentation, it does not possess the same virtues. Retorts, luted in this manner, resist the action of the fire very powerfully, and the adhesion of the lute is such, that, even should the glass break during the operation, the distillation may be still carried on.

The lutes with which the joining of vessels are closed are of different kinds, according to the nature of the substances to be distilled. When vapours of watery liquors, and such as are not corrosive, are to be prevented from escaping, it is sufficient to surround the joining of the receiver to the nose of the alembic, or of the retort, with slips of paper, or of linen, covered with a mixture of wheat flour and water, of the consistency of soft paste; slips of bladder, wetted, will be often sufficient, if carefully applied. When more active vapours are to be secured, the lute may consist of a soft paste made of quick-lime extinguished in air, and mixed with the white of egg. When corrosive acid vapours

are to be confined, what is called the fat lute is necessary. Fine clay, well dried and powdered, must be sifted through a silken searce, then moistened with water, and beat into a stiff paste with boiled linseed oil, applied to the junctures, and secured by means of slips of linen: these slips must be covered with the lute made of quenched lime and white of egg. Chaptal's Elements of Chemistry.

LUXA'TIO, LUXATU'RA, (from *luxo, to dislocate*). *Dislocatio; aberratio; eluxatio; emotio; elongatio; ecptoma; ecclysis; lygismos; delocatio; exarthrema; olisthema*; a LUXATION, or DISLOCATION. A slight dislocation is termed *diacinema; parathrema*; an incomplete one, *contortio*, or *declinatio*. Dr. Cullen places it in the class *locales*, and order *ectopiæ*, which he defines a bone removed from its seat in the joints. To which may be added, "causing an impediment to voluntary motion:" a compound luxation is when a wound, fracture, or a violent contusion, attends.

Luxations from internal causes are thus distinguished: 1. The limb is so relaxed, that it may be easily moved in any direction. 2. A cavity about the joint, and a hollowness between the bones, may be felt with the fingers. 3. The dislocated bone, if replaced, soon escapes spontaneously, from the weakness of the ligament and muscles. 4. The dislocated limb is frequently longer than the sound one, and attended with neither pain, inflammation, nor convulsion. 5. It generally happens to the upper part of the femur, or humerus, and sometimes to the articulation of the foot with the tibia. When owing to an external injury, the diagnostics are uncertain, when the joint is swollen from a violent contusion or distortion. In such cases we must suspend our judgment; and could we decide until the inflammation and tumour were abated, attempts towards a reduction would be improper. The more readily to discover a luxation, it may be observed, that when the head of a bone is removed out of its place, the other end will be distorted in an opposite direction. A tumour is also generally observable where the dislocated part of the bone is seated, and an hollowness from whence it receded; though, in a muscular part, the tumour and cavity are not easily perceived.

In consequence of a luxation, the symptoms differ as the parts affected are different: in general, there is an immobility, or a defective motion of the dislocated limb; a distraction of some muscles, and a relaxation of others; violent pain and inflammatory tension of the joint; a torpor of the subjacent parts; a compression of the neighbouring vessels, from whence an atrophy, gangrene, pain, œdematous swellings, or convulsions, may ensue.

Compound luxations are more dangerous than compound fractures. Boerhaave observes, that the worst luxation is produced by a solution or a separation of the epiphysis from the body of the bone. In general, the prognostic should be cautious, but the difficulties and uncertainties are greater in proportion to the distance of the dislocated bone from its proper place; the figure of the luxated limb; the part in which the luxation is seated; the parts pressed, or intercepted; the pain, inflammation, or other violent symptoms.

It will be obvious that a partial dislocation may be more easily reduced than a more complete one; and a fracture attending will render the cure more doubtful: indeed, if a fracture near the joint is accompanied with a luxation, a stiff joint must be expected, if the limb *can* be saved. After a limb has been some time luxated, it forms a socket for itself, and its old cavity is usually filled with a fatty substance, but not with inspissated synovia, as has been asserted. The attempt is, in this case, hopeless, and generally unnecessary; for the limb, in its new position, retains some degree of motion, and is perhaps more serviceable than it would be after the inflammation which would arise from unsuccessful attempts. In delicate constitutions, and advanced periods of life, luxations are more easily reduced than in the young and strong, whose muscles resist very powerfully.

The object of the surgeon is to reduce the luxation, an operation called *embole*; and to retain the limb in its proper situation. If inflammation or tumour are considerable, they must be removed before a reduction is attempted. Mr. Pott justly observes, that the resistance of the muscles is the only cause of the difficulty of reducing luxations; that much force is never required, provided the muscles are relaxed by a proper position of the limb; and that in recent cases, at least, the capsular ligament will rarely, if ever, impede. The extension should be gradual and continued, until the dislocated bone is on a level with the cavity from whence it receded. If the head does not then spontaneously return, it must be assisted by pressure, employing the dislocated bone as a lever. Dr. Hunter seems to think that a rupture of the capsular ligament is a greater impediment to reduction than the contraction of the muscles. It cannot be denied that in violent luxations this ligament is often broken; but this is by no means an universal consequence. Both recommend gentle extension, and to avoid violence.

When the external parts are violently bruised, general and topical bleeding, saturnine applications, &c. are necessary. The limb must be laid in an easy posture, and the tumour allowed to subside before the real nature of the case can be understood, or any attempt made to reduce the displaced bone. The great impediment, we have said, is the strong power of the muscles, which not only resists the extension, but often throws the bone into a different cavity from that to which we wished to direct it. When a fracture accompanies dislocated bones, a firm callus must be allowed to form before the reduction is attempted; but, if the fracture be at a distance from the dislocation, or in very small bones, where the power of the muscles is inconsiderable, this precaution may be neglected.

After the luxation is reduced, leeches and saturnine applications should be employed, the pains moderated by opium, and fever diminished by cooling medicines, laxatives, and a low regimen in every respect. The most perfect tranquillity is absolutely necessary.

1. CA'LCIS LUXA'TIO O'SSIS. *Luxation of the heel-bone.*—Whether luxated inward or outward, a cavity on one side, and a tumour on the other, discovers it; and the pain is severe. The treatment is the same as is directed when the bones of the hand are luxated.

2. CA'PITIS LUXA'TIO vel CRA'NII. *Luxation of the head.*—A separation of the bones of the cranium from the hydrocephalus is by some called a luxation of the head; but, in general, is meant a luxation of the upper vertebra of the neck. In this case, the patient

being seated upon the ground, and supported by an assistant, the surgeon standing behind should raise the head from the breast. The assistant should press down the shoulders, and the head be gradually drawn up, till the dislocation is reduced. If this does not happen with moderate extension, it may, at the same time, be gently moved from side to side. A sudden crack or noise is heard on the reduction being completed. See Bell's Surgery, vol. vi. p. 183, 195.

3. CA'RPI LUXA'TIO. *Luxation of the wrist.*—One or two of the bones in the wrist are sometimes removed from their place, which is discovered, as usual, by a tumour and a cavity, with violent pain. If the luxation is recent, it must be treated as a luxation of the hand. Bell's Surgery, vol. vi. p. 89, 246. White's Surgery, p. 163.

4. CLAVI'CULÆ LUXA'TIO. *Luxation of the clavicle.*—When this accident happens, the sooner the reduction is performed the better; for long-continued luxations of the clavicle are rarely cured.

The clavicle may slip from the sternum either outward or inward; in the first case a preternatural tumour is observed about the joining of the bones: in the latter case a sinus is observed in the part affected, the aspera arteria, the carotids, the contiguous nerve, and the œsophagus, are compressed. The general directions recommended, in case of a fractured clavicle, when the accident hath happened near the breast bone, are sufficient in this as well as with respect to a luxation happening next the acromion. The last is sometimes not easily distinguished from a luxated humerus. Paré observes, that in this case the upper part of the clavicle starts upwards, and a hollow cavity is observed where the clavicle is separated from the acromion: the pain is violent, and the patient cannot move the arm upwards. If the reduction is not speedily effected, the arm will soon become paralytic.

The greatest care is required in the use of bandages, lest a stiff or a luxated arm should remain. If the bone is luxated near the sternum, and is started outward, besides bolsters to depress the end of the bone, the capelline bandage should be applied; but, if inward, the stellate bandage is preferable, on account of its keeping the shoulder back. If the luxation is next the scapula, the spica with two heads may be used. If both clavicles are displaced, the double spica must be employed, as directed in luxations of the humerus and scapula. See Bell's Surgery, vol. vi. p. 204; White's Surgery, p. 157.

5. CO'CCYGIS O'SSIS LUXA'TIO. *Luxation of the os coccygis.*—This bone may be forced inward by a blow, or outward by a difficult birth. In this case, the pain is felt in the lower part of the spine, and inflammation, sometimes with suppuration, in the rectum, is produced. Independent of these symptoms, the sight and touch will discover the disease. In the latter case the bone may be replaced by pressure with the thumb: in the former the fore-finger dipped in oil must be introduced up the anus, to press the bone outward, while the other fingers, applied externally, guide it to a proper place.

The T bandage is necessary, and the patient must be kept in bed; and, when he rises, sit in a perforated chair. See Bell's Surgery, vol. vi. p. 201; White's Surgery, p. 157.

6. CO'LLI LUXA'TIO. *Luxation of the neck.*—A luxation between the head and the upper vertebra of the neck is immediate death, from the pressure on the medulla oblongata, or medulla spinalis. When a man is said to have broken his neck there is a partial luxation of the first or second vertebra only; and in this case the chin is fixed to the breast, which prevents his speaking, swallowing, or moving the parts below. If an assistant is at hand, he must follow the directions given for the luxation of the head; or, to gain more power, he should immediately turn the patient on his back, and, setting his feet against his shoulders (being himself seated on the ground), place his hands below the patient's ears, and draw the head towards him, gradually increasing the force with which he pulls, and, in pulling, move the head from side to side.

After reduction, the part should be bathed with spirit of wine. White's Surgery, p. 186.

7. COSTA'RUM LUXA'TIO. *Luxation of the ribs.*—If a rib is forced inwards, the pleura is injured, and excruciating pains, inflammation, difficulty of breathing, cough, ulcers, and immobility of the body, follow. These complaints, with the external appearance of the side, evidently discover the misfortune. This luxation happens between the rib and the spine.

Luxations internally are with difficulty reduced, because neither the hands nor any instrument can be applied to elevate them. The patient may be laid on his belly over some cylindrical body, and the anterior part of the rib being moved gently towards the back, or shook a little, the head may probably recover its situation. If this fails, the method proposed for fractures of the ribs, when they are forced inwards, and a splinter offends the pleura, may be employed. But, if the symptoms are not urgent, nor the heads of the ribs much removed, every violence should be avoided, as luxated ribs have often remained so without danger.

The bandage should be a napkin and scapulary, and compresses squeezed out of camphorated spirit of wine applied. See Bell's Surgery, vol. vi. p. 208.

8. DIGITO'RUM MA'NUS LUXA'TIO. *Luxation of the fingers.*—The joints of the fingers may be luxated in every direction; but an easy extension and gentle pressure with a finger and thumb will readily reduce them. See LUXATIO METACARPI 16; Bell's Surgery, vol. vi. p. 249; White's Surgery, p. 163.

9. DIGITO'RUM PE'DIS, et O'SSIUM PE'DIS LUXA'TIO. *Luxation of the toes and bones of the feet.*—A dislocation of these bones produces great pain, inflammations, and sometimes convulsions, if speedy assistance is not obtained. They are reduced as directed in the case of bones in the hand being the subjects of this accident. The toes are treated as directed for the fingers. See White's Surgery, p. 167.

10. FE'MORIS O'SSIS LUXA'TIO. *Luxation of the thigh-bone.*—A fracture of the neck of this bone is sometimes mistaken for a luxation. The head of the thigh-bone may be luxated downwards, forwards, inwards, outwards, and backwards. This luxation, like that of the humerus, is always perfect, and most frequently happens inward and downward, the head of the bone tending towards the large foramen of the os pubis.

When the luxation is outwards, the bone generally slips upwards at the same time; if inwards and down-

wards, the leg is longer and more bent than the other, and the knee and foot turn outwards: the head of the bone is thrust near the lower part of the inguen and the foramen of the os pubis; sometimes the pressure of a nerve, which communicates with the bladder, or of the crural, causes a suppression of urine, or a numbness in the leg. A hollow cavity is perceived in the buttock, usually filled by the great trochanter; and if the reduction is long neglected, the limb withers. The patient will be always lame; the knee of the luxated limb cannot be brought to the other; and the chief pain will be felt in the groin, without the grating observed when the bone is fractured, on moving the limb. If the luxation is backwards, the limb is drawn upwards, and a cavity is perceived in the groin, with a tumour in that part of the buttock where the head of the bone and the trochanter are lodged. The limb is shortened, the foot bends inward, the heel does not touch the ground, but the patient seems to stand on his toes, and the luxated limb is more easily inflected than extended: in this case, many stand and walk firmly without the bone being reduced, provided their shoe has a higher heel.

A fractured neck of the thigh-bone is distinguished from a luxation of its head, when the thigh bone is luxated by an abscess, without any external violence, but only by walking or rising up; when unattended with pain, tumour, or inflammation; or when the whole limb may be bent, and turned about the acetabulum without the noise usually heard in fractures: the contrary signs indicate a fracture.

In reducing the luxated head of the thigh-bone, a longitudinal extension will not suffice, but it must be according to the direction of the cervix. "When a thigh is dislocated inward, or outward, follow," says Mr. Kirkland, "Celsus's advice in laying the patient on one side, so that the part into which the bone hath slipped be always uppermost, and that from which it hath receded, lowermost; by which means the extension may be made in any direction you have a mind, and your own invention will point out to you twenty ways of securing the patient upon a bed (for a table is usually too high), so that a proper resistance be made to the extension. This done, the knee bent, and a towel fixed properly above it, you must place yourself on that side of the thigh to which the bone is dislocated, with your knee near the head of the bone, and both hands on the opposite side of the knee of the patient, an assistant being fixed at the ancle. The extension may then gradually be begun by three or four men, with the thigh rather in a state of flexion; and when there is reason to think that the head of the bone is brought to a level with the socket, the extension being steadily continued, the knee may be bent near to the abdomen, and, at the same time, whilst the knee pushes the bone towards its place, the ancle must be moved in the same, but the knee of the patient in a contrary, direction. Thus the head will always go into the socket, provided a due extension is made before you attempt to return it."

Sometimes the head of the thigh-bone is pushed between the ischium and sacrum; in this case, except the patient is exhausted, before attempting the reduction, it will be most eligible to reduce him by brisk cathartics, given at short intervals; for the case, in this way, is better ascertained, and the reduction more easily effected. London Medical Journal, vol. v. p. 412; Bell's Surgery, vol. vi. p. 252; White's Surgery, p. 163; Edinburgh Medical Commentaries, vol. ii. p. 40.

11. FI'BULÆ LUXA'TIO. *Luxation of the fibula.*—This bone may be separated from the tibia, either at the lower or superior part. In the former case it generally proceeds from a luxation of the foot externally; this bone must, therefore, be reduced, bound up, and the case treated according to the directions given for luxations of the knee and patella. See Bell's Surgery, vol. xi. p. 273.

MALLE'OLI LUXA'TIO. *Luxation of the ancle.*—See N° 21.

12. GE'NU LUXA'TIO. *Luxation of the knee*—is usually partial. If complete, it is easily reduced, but cannot be retained, because the cross ligaments are broken. A luxated knee-pan is a necessary attendant of a luxated knee, and often taken for it; but in a proper luxation of the knee the tibia recedes from the femur, either backwards or to either side, but never forward, because the patella hinders it. In this part dislocations are easily discovered.

If the luxation is partial, the patient must be placed on a table, one assistant taking hold of his thigh, and another extending his leg; in the mean time the operator may reduce the bone with his hands. In children and young persons, if the extension is made with violence, it endangers a separation of the epiphyses, a worse disease than the luxation. See Bell's Surgery, vol. vi. p. 269; White's Surgery, p. 165.

13. HU'MERI LUXA'TIO. *Luxation of the humerus.*—The head of this bone may slip out before, behind, (even under the scapula), or downwards; but never upwards, except the acromion and coracoid processes are fractured. When the humerus is luxated downward, there is a cavity in the upper part of it perceptible to the eye in some instances, but to the finger in all, and a tumour in the arm-pit, because the head of the bone is lodged there. The luxated arm is longer than the other, and when it can be moved or extended, it gives exquisite pain in lifting it to the mouth.

Fresh luxations are most easily reduced; those of long continuance are restored with difficulty; but if the head of the humerus adheres to the adjacent parts, which after a long time usually happens, a reduction cannot be effected by any means. See Medical Observations and Inquiries, vol. ii. p. 340.

To reduce the humerus, bend the fore-arm, and let an assistant support it; then elevate the arm so that the elbow may be advanced somewhat above the shoulder, bringing it a little inward. An assistant must then make the extension, whilst another, counteracting him, draws the inferior angle of the scapula backward toward the spine, and presses the acromion a very little downwards: the operator, with his fingers in the axilla, presses the head of the bone upward as soon as he perceives the extension to be sufficiently made, and at the same time, with his other hand, brings the elbow of the luxated arm to the patient's side. An extension made downwards, or even horizontally, more frequently fails, than when it is made in some degree upward.

When the luxation is forward, that is, when the head of the humerus is under the pectoral muscle, there is a cavity under the acromion, but the head of the luxated bone projects towards the breast more than when in the

axilla; and if the arm be moved, a more acute pain is felt than in the preceding case; for the great artery and the nerves of the bones are much pressed. If this luxation is not easily reduced by the method directed, when the head of the humerus is in the armpit, let a pulley from the top of a room be fastened to the luxated arm, just above the elbow, and the patient gradually raised from the ground by it: this at least brings the head of the humerus into the axilla, and it may be restored into its proper place by the means just described. In this process the fore-arm must be brought toward the breast, that the muscles may be relaxed.

If the luxation is backward, the elbow approaches the chest, and the head of the bone is prominent on the outside of the shoulder; the arm cannot be moved from the breast, nor extended without great agony, and the lower angle of the scapula will be somewhat pushed out. In this case the general process may be the same as when the head of the humerus is under the pectoral muscle.

If there is no pulley, a tall strong man may take the patient's arm over his shoulder, and gently raise him from the ground, and the operator may push the head of the dislocated bone into its place as the body becomes suspended. This method of suspending the patient is not so severe as it may seem; for as no force is used about the shoulder to make a counter extension, the patient does not suffer from those troublesome excoriations and contusions which too commonly attend the other methods.

It is generally agreed that machines for reducing a luxated humerus are never needful. Freke's commander is preferred to all the other instruments used for this purpose; as in the use of it the limb may be moved in all directions during the extension, and the situation of the head of the bone can be examined; but great care is required to keep it perpendicular to the side of the patient.

As in other luxations, bleedings, &c. to prevent or check inflammation and swelling, must be used after the reduction, and the arm suspended by a sling. See Medical Observations and Inquiries, vol. ii. p. 373; Bell's Surgery, vol. vi. p. 211; White's Surgery, p. 158.

14. MA'NUS LUXA'TIO. *Luxation of the hand.*—The hand may be luxated backward, forward, and on each side; but a luxation backward or forward is most frequent. Each accident is readily distinguished.

From the distortion of the strong ligament, and the pressure on the tendons, there is exquisite pain and a rigidity of the fingers; and inflammation, tumour, abscess, gangrene, and a caries of the spongy bones of the carpus often follow, seldom curable but by amputation. A recent inconsiderable luxation is more easily managed, and it should be speedily reduced, by extending the hand and arm in opposite directions; and by placing the cavity of the extended hand on a table or some other flat body, that the tumour may be depressed. This method is necessary, whatever part of the hand is luxated. See LUXATIO METACARPI, 16.

15. MAXI'LLÆ INFERIO'RIS LUXA'TIO. *Luxation of the lower jaw.*—This bone is usually luxated forwards on one or both its sides. If one side only is luxated, the chin inclines to the opposite side, and on the dislocated side the mouth is wider open. When both sides are dislocated, the mouth gapes wide, the jaw starts forwards, and the chin falls towards the breast, so that the patient cannot shut his mouth, speak distinctly, nor swallow with ease. This accident may happen from a blow, or from yawning.

When one side only is dislocated, it is easily reduced; but when both sides suffer, the patient must be placed in a low seat, with his head secure against the breast of an assistant; then securing the thumbs from being bit, place them on the patient's teeth, as far back as you conveniently can, at the same time fixing your fingers on the outside of the jaw: when you have secure hold of the jaw, press it downward, backward, and upward. If all this is done almost in the same instant, the reduction will be complete; or, as Mr. Bell says, when the fingers are applied as directed, the surgeon must pull the under jaw forward, till he finds it move somewhat from its situation; and he should then press the jaw forcibly down with his thumbs, and moderately backward with the palms of his hands, when the ends of the bone will immediately slip into their situation.

If only one side is luxated, the same mode will succeed, if the affected side be pressed most forcibly downwards and backwards. Bandages are useless in this case. See Bell's Surgery, vol. vi. p. 189, 190; White's Surgery, p. 155.

16. METACA'RPI LUXA'TIO. *Luxation of the Metacarpus.*—See MANUS LUXATIO.

Mr. Bell observes, that in the reduction of these dislocations (viz. of the metacarpus and fingers), the bone should not be pulled down till it be somewhat raised or elevated from the contiguous bone; for, as all the bones of the fingers and thumbs, as well as those of the metacarpus, are considerably thicker at their extremities than in any other part, these projections are apt to be forced against each other when the extension is made in a straight direction. See Bell's Surgery, vol. vi. p. 249, 251; White's Surgery, p. 163.

17. NA'SI O'SSIS LUXA'TIO. *Luxation of the bone of the nose.*—This accident is easily discovered by the eye and the touch. The reduction is effected by a quill put up the nostrils, and then with the fingers replacing the bones. After the reduction a sticking plaster may be applied. Bell's Surgery, vol. vi. p. 184.

18. OLECRA'NI LUXA'TIO. *Luxation of the elbow.*—A perfect luxation of this joint rarely happens, except the olecranon is fractured, or the ligament greatly weakened. This luxation may be backward (which is most frequent), forward, outward, or inward. If backward, the arm appears crooked and shorter, and cannot be extended: in the internal part of the flexure the humerus will be prominent; in the external, the olecranon, with a large cavity between both bones. When, from the fracture of the olecranon, the elbow is pushed forward, the os humeri will stick out behind, the ulna is prominent on the fore-part, and a cavity appears in proportion to the luxation. If external, the tumour is so too, and vice versa.

In a violent luxation, or one of long standing, the bone cannot be replaced without great difficulty, as the ligaments are strong and the processes numerous. Recent and slighter luxations are more easily restored.

If the ligaments and tendons are rigid, emollient applications should be used some time before attempting the reduction; the egg liquor is useful in this case. See ANCHYLOSIS.

In reducing this luxation an extension must be made, until the fore arm can be bent; and then the reduction is easily accomplished by bearing upon the lower end of the humerus with one hand, and by taking hold of the wrist and bending the elbow with the other. If it is on either side, the hand of the patient must be turned inward or outward, at the same instant, as the case requires. After reduction, the arm should be hung in a sling for some time, that the parts may recover their tone. See Bell's Surgery, vol. vi. p. 239. White's Surgery, p. 162.

19. PATE'LLÆ LUXA'TIO. *Luxation of the knee-pan*, may happen externally and internally. In order to its reduction, the patient's leg must be pulled straight, or, if he can, he may stand on it erect; then the operator, taking firm hold of the patella with his fingers, may force it into its place. Nothing but rest is afterwards required. Bell's Surgery, vol. vi. p. 267. White's Surgery, p. 165.

20. PE'DIS O'SSIUM LUXA'TIO. See 9.

21. TA'LI LUXA'TIO, seu MALLE'OLI. *Luxation of the ancle.*—Dr. Hunter observes, that when there is a luxation of the malleolus internus, there is generally a fracture of the fibula; but that if the person is of a weak constitution, ligaments may be relaxed without a fracture.

If the ancle is luxated inwardly, the bottom of the foot turns outward; if outwardly, the contrary. If forward, the heel becomes shorter, and the foot longer than usual; if backwards, the heel is lengthened, and the foot shortened. This kind of luxation is usually attended with great pain, and other very violent symptoms; and the difficulty of reducing the ancle is proportioned to the violence of the cause. The patient should be placed on a table or bed, and the leg, with the knee bent, firmly secured by an assistant or two. The foot is now to be put into that situation which tends most effectually to relax all the muscles which belong to it; and an assistant must be desired to extend it in that direction till the most prominent point of the astragalus has clearly passed the end of the tibia, when the bone will slip, or may be easily forced into its place. The patient should keep in bed until the fever and the symptoms of irritation leave him, and he is in some measure able to rest upon his ancle. See Bell's Surgery, vol vi. p. 274. White's Surgery, p. 166.

22. VERTEBRA'RUM LUXA'TIO. *Luxation of the vertebræ.*—The vertebræ are rarely perfectly luxated. Those of the neck and loins are more subject to this accident than those of the back, because they are more moveable and smooth, are destitute of those cavities with which the vertebræ of the back are furnished, and have a thicker cartilage interposed betwixt each. Luxations of the vertebræ must be imperfect, unless attended with a fracture, and a laceration of the spinal marrow, an accident quickly fatal. The imperfect luxations are scarcely less fatal; and they most frequently happen in the upper vertebræ of the neck. Dislocation, or crookedness of the dorsal vertebræ sideways, is called *contortio.*

The vertebræ of the back cannot move in any great degree without a fracture: their upper or lower apophyses, and sometimes only one, is misplaced; for great violence is generally required in order to a partial luxation. When a vertebra is luxated without a fracture, the body leans to one side, or forward: if the left side is affected, the patient leans to the right, and vice versa.

The common signs of a luxation of the vertebræ in the back are, that the back is crooked and unequal; the patient can neither stand nor walk, and his whole body seems paralytic; all the parts below the luxation are insensible and immoveable; the excrements and the urine are retained, or discharged involuntarily; the lower parts mortify, and the patient soon dies.

All the luxations in the spine are very dangerous, from the injury done to the spinal marrow, and the difficulty of reducing them. The danger is also greater, the nearer the luxation is to the head; as from the vertebræ of the neck and back, the nerves which supply the heart and intestines are chiefly derived. When several vertebræ are luxated, the bad symptoms are not so violent.

For reducing the vertebræ of the neck, see LUXATION OF THE NECK. When both the apophyses of the vertebræ are dislocated, the patient must be laid on his belly over some round body, and two assistants may depress both ends of the luxated spine on each side, which elevates, and gradually extends the vertebræ, the spina dorsi being thus bent in form of an arch. The surgeon next presses down the inferior dislocated and prominent vertebra, and, at the same instant, expeditiously pushes the superior part of the body upwards. If the first attempt fails, it must be repeated two or three times. When the left apophysis only is displaced, after the patient is laid in the same posture, one assistant may depress the left coxa, and the other the right humerus; and the reverse, if the injury is on the other side. After the reduction, it may be necessary to take some blood, and compresses wrung out of spirit of wine should be applied, and then the napkin and scapulary. See London Medical Journal, vol. i. p. 326, 327. Bell's Surgery, vol. vi. p. 196; and White's, p. 156. Boerhaave's Aphorisms. Petit's Diseases of the Bones. London Medical Observations and Inquiries, vol. ii. p. 99, &c. Gooch's Cases and Remarks. Pott's General Remarks on Fractures and Dislocations. Kirkland's Observations on Pott's Remarks. Medical Museum, vol. ii. p. 406. Heister's, Wiseman's, Bell's, and White's Surgery.

LUXU'RIANS, (from *luxurio, to exceed*). A flower is called luxuriant, when the teguments of its fructifications are augmented, so as to exclude some other essential part. Double flowers, which are luxuriant ones, seldom produce fertile seeds.

LYCA'NCHE, (from λευκος, *a wolf*). A QUINSY; because the noise in breathing is supposed to resemble the howling of a wolf. See ANGINA.

LYCANTHRO'PIA, (from λευκος, *a wolf*, and ανθρωπος, *a man*). LYCANTHROPY; by the Arabians *cutubuth*, from an animal which perpetually moves up and down on the surface of stagnant waters; by Ætius, *cynanthropy*, as well as *lycanthropy*. It is supposed to be the disorder with which the demoniac, mentioned in scripture, who dwelt among the tombs, was affected. Oribasius informs us, that persons affected with this disease " leave their houses in the night-time, in every thing imitate wolves, and wander about the tombs until break of day.' Actuarius adds, that " they then return to their homes and their senses." Their looks are said

to be pale, their eyes dull, hollow, fixed, dry, and without the moisture of a tear; their tongues dry, their legs, from the bruises they receive in the night (and, according to Ætius, from the bites of dogs), full of incurable ulcers. It is the *melancholia errabunda, erratic melancholy* of Sauvages. Bleeding, blisters, purgative medicines, interposing anodynes, with gentle treatment, are the principal means of relief.

LY'CHNIS, (from λυχνος, *a torch*; because its leaves were usually rolled up as torches).

LY'CHNIS SE'GETUM MA'JOR. See NIGELLASTRUM.

LY'CHNIS SYLVE'STRIS. See ANTIRRHINUM, OCIMASTRUM, BEHEN ALBUM VULGARE, and SAPONARIA.

LY'CHNIS VISCO'SA RU'BRA. See MUSCIPULA.

LY'CHNIS CORONA'RIA DIOSCORIDIS, ROSE CAMPION, is cultivated in gardens, flowers in June, and its seeds are cathartic.

LYCHNOI'DES SE'GETUM, (from *lychnis*, and ειδος, *likeness*). See NIGELLASTRUM.

LY'CIA. See CERUS CYPRI FOLIO.

LY'CIUM, (from *Lycia*). The *nandia agiahalid, arbor-spinosa*, the INDIAN THORN, probably a species of prunus, grows in the East Indies, is very large, resembling the wild pear; fruit bitterish and styptic; the leaves sour and astringent. This last property its inspissated juice preserves, and is called *cate*, as it is mistaken for the terra Japonica.

LY'CIUM BU'XI FO'LLIIS, *pyracantha*, BOX-THORN. *Celestrus buxiformis*, or *pyracanthus* Lin. Sp. Pl. 285, grows in hot countries. The rob of the fruit is astringent, but it is often adulterated, or the rob from the berries of periclimenum substituted for it.

LYCOCTONUM, (from λευκος, *a wolf*, and κτεινω, *to slay*; because it was used for the purpose of destroying wolves). See ACONITUM.

LYCOPE'RDON, (from λευκος, *a wolf*, and περδη, *crepitus*). PUFF-BALL, supposed to spring from the dung of wolves.

LYCOPE'RDON VULGA'RE, *crepitus lupi, bovista, orbicularis fungus rotundus maximus pulverulentus*; DUSTY MUSHROOM, PUFF-BALL, *lycoperdon bovista* Lin. Sp. Pl. 1653, is round, or egg-shaped, whitish, with a short and scarcely any pedicle, growing in pasture grounds. When young they are covered with tubercles on the outside, and pulpy within. By age they become smooth externally, and are filled with a fine light brownish dust. It is a very powerful vegetable styptic when externally applied. Gooch prefers it to the agaric of the oak, and every other fungous substance. It is softer and more absorbent than lint, and, if cut into slices, might answer the purpose of the sponge, recommended by Dr. Kirkland, after amputation.

LYCOPE'RSICON, (from λευκος, *a wolf*, and περσικον, *a peach*; from its exciting a violent degree of lust). WOLF'S PEACH, *solanum peruvianum* Lin. Sp. Pl. 267. It partakes of the poisonous properties of the other solana.

LYCOPO'DIUM, (from λευκος, *a wolf*, and πους, *a claw*); *muscus clavatus, terrestris, squamosus, plicaria, cingularia*, WOLF'S CLAW, CLUB MOSS; *lycopodium clavatum* Lin. Sp. Pl. 1564, is a fertile moss, destitute of pedicles and capitella, differing from the selago, because its capsules, instead of being scattered in the sinuses of the leaves, are collected into a club; for each scale covers a kidney-shaped and bivalve capsule, which loses no part when ripe. It grows on heaths and hilly places, flowers in July and August, and is reckoned cooling and astringent. Its pollen is sprinkled with advantage on tender skins, to prevent excoriation. M. Bucholz, of the academy of Erfurth, has lately examined this singular substance, and found that the seeds contained one-sixteenth of a fat oil, of a brownish yellow colour, soluble in alcohol; a portion of true sugar; an insipid, viscid, brownish-yellow extract, leaving a residuum of peculiar properties, not explained, but which is said to be a peculiar product of the vegetable kingdom. The yellowish appearance of the seeds is supposed to arise from their containing a pigment, and their oil occasions their inflammability and their separation from water. See PLICA POLONICA.

LYCO'PUS, (from the same). See MARRUBIUM AQUATICUM.

LY'DIUS LA'PIS, (from *Lydia*). See MAGNES.

LYGI'SMOS, (from λυγιζω, *to distort*). See LUXATIO.

LY'GMOS, (from λυζω, *to hiccough*). See SINGULTUS.

LY'MPHA, quasi *nympha*, (from νυμφη, *water*), LYMPH, is a pellucid, insipid, pure liquor in the human machine, and the purer parts of the serosity generally obtain this appellation. The gelatinous parts of this fluid were supposed to nourish all the solids, its finer aqueous parts to be circulated through the lymphatic vessels, and by means of the valves and conglobate glands again conveyed to the heart. These ideas are, however, now exploded; but, in the Boerhaavian school, we still hear of lymphatic arteries, which are properly those which will not admit the red globules. They have corresponding veins distinguished by the same appellation. The source of the lymph, which we find in the cavities, as the pericardium, the ventricles of the brain, &c. either in the healthy state, or when accumulated in dropsical swellings, is uncertain. Dr. Hunter has attributed it to exudation through the inorganic pores, as he found his injections, the bile, and other fluids, exude after death. This opinion is, however, untenable, from many views, but particularly the numerous and dense coats of the vessels; for it is not probable that the pores should be sufficiently large for this purpose, without danger of all the serosity escaping; or that, in each coat, the inorganised pores should so minutely correspond. It is, therefore, with much reason, supposed that the exudation which he found was in consequence of the relaxation occasioned by death, and that all the watery fluids are either exhaled from the open orifices of arteries, or separated by a simpler species of secretion. There is, we think, little doubt of the vessels in a state of health confining the fluids by their tonic power. Indeed they seem to pass off in a state of halitus.

LY'MPHÆ DU'CTUS, (from *lympha*, and *duco, to carry*). *Vása lymphática*. LYMPHATIC VESSELS. The lymphatics arise from the cells of the membrana cellularis, the cavities of the intestines, of the urine and gall bladders, and of every other viscus, carrying a pellucid liquor towards the receptaculum chyli and thoracic duct, in which they almost exclusively terminate. The coats of these vessels are thin and transparent, much

crowded with valves, so as, like the lacteals, to resemble, when injected with quicksilver, strings of beads. The lymphatics frequently anastomose, and in their way pass through the lymphatic glands, ramifying before they enter a gland, and uniting in their passage from it. See LACTEA VASA, DUCTUS THORACICUS.

The course of the lymph and of the chyle is from the extreme parts of the body towards the centre; and the lymphatics commonly lie close to the large blood-vessels of the extremities. All the lacteals, and most of the lymphatics, open into the thoracic duct, which lies upon the spine, and runs up towards the neck, where it commonly opens into the angle between the jugular and subclavian veins of the left side; and thus both the chyle and the lymph are gradually mixed with the blood.

The coats of these vessels are thinner and more pellucid than those of the blood-vessels, but stronger; for they can support the weight of quicksilver, which will rupture the coats of even the arteries. The internal coat is smooth, dense, and highly polished, projecting by little duplicatures into the cavity of the vessel forming the valves. The second coat consists chiefly of muscular fibres, running in every possible direction; but usually in a circular one, surrounding the internal membrane. The outward coat is similar to the pleura, or peritonæum.

The coats of the lacteal and lymphatic vessels have, in common with all other parts of the body, arteries and veins for their nourishment, and nerves for their animation: from the blood-vessels running through them they are subject to inflammation, and, from their numerous nerves, they are more irritable than any other vessels in the human body. Their valves are two in number, of a semilunar shape; and are so frequently interposed, that three or four pair may be sometimes found in the space of one inch. They are occasionally fewer, and in some parts wholly wanting.

The lymphatics, like the lacteals, open into the cavities, and draw in the various fluids which these contain by a capillary attraction. It is probable, as we have said, that they convey fluids only, or solid substances very minutely divided. That they carry the bony matter we know, from the fact recorded by Mr. Cheston, where, in a case of mollities ossium, the thoracic duct was filled with an osseous matter. Bones are not, however, absorbed so rapidly as the frequently quoted experiment, with madder, would lead us to believe; for it is now found, that, though the colouring part of madder has a considerable affinity to the phosphat of lime, of which the bones consist, it has greater affinity to the serum of the blood. In such experiments the colouring matter is, therefore, only deposited, and again washed away, without any other corresponding change on the earthy salt. The fluids, when once absorbed, are carried, by the action of the vessel, or by the pressure of the adjoining muscles, beyond the first pair of valves; and, by the frequent recurrence of these valves, every action assists the progress of the fluid, since regurgitation is prevented. It is by no means certain that all the lymphatics pass into the thoracic duct. Some trunks have been discovered which escape it, and there is rather a probability that lymphatics occasionally terminate in veins farther distant from the heart.

Lymphatics, as well as lacteals, are not always excited to action: in other words, their extremities are not erected so as to become capillary tubes, a circumstance depending on a variety of causes, of which we can perceive with distinctness only general debility, or a sufficient supply already in the system. We have had occasion also to suggest, that an elective affinity seems to influence the admission of some fluids, and the rejection of others. Perhaps sedatives may, for a time, paralyse the sensible orifices of the lacteals; stimulants excite them too violently, or astringents contract them too much. This may be deemed conjectural; but some facts might be adduced in favour of each supposition.

The lymphatic vessels of the lower extremities are the superficial, or those more deeply seated. The former lie between the skin and the muscles, and are connected with the surface, and the cellular membrane, which lies immediately under it, absorbing fluids from each; one branch of the superficial lymphatics runs upon the top of the foot, another generally under the inner ancle. The branch on the foot runs up on the outside of the tendon of the tibialis anticus, until it rises above the ancle; and running over the shin bone, it divides and forms a plexus, still ascending in the cellular membrane to the inside of the knee, from whence it advances up the inside of the thigh under the skin, and, arriving at the groin, enters the lymphatic glands. These glands are seven or eight in number, some of which lie in the angle between the thigh and the abdomen, and others a little below on the fore part of the thigh. Into these upper glands only lymphatic vessels of the genitals enter, so that the venereal bubo, which arises in consequence of an absorption of matter from these organs, is always seated in these; and the lower glands are never affected, except from their vicinity to the glands first diseased. As the upper glands are affected from the genitals, so the lower are usually inflamed from the absorption of acrid matter in the parts below them. The lymphatic vessels of the genitals having joined those of the thigh, a net-work is formed, which enters the abdomen under the edge of the tendon of the external oblique muscle, called Poupart's ligament: some branches of this plexus embrace the iliac artery. As no considerable branches can be distinguished on the outside of the leg or thigh, it is probable that all the lymphatic vessels of those parts bend towards the inside. Upon these superficial vessels, from the foot to the groin, there is scarcely in any instance one gland. Besides the superficial lymphatic vessels which lie above all the muscles, or in the cellular membrane under the skin, there is some seated amongst the muscles, accompanying the crural artery. Of these the principal trunk can be discovered by cutting down to the posterior tibial artery, near the inner ancle. From this part the vessel passes up with the posterior tibial artery, and is hid amongst the muscles on the back part of the tibia. About the middle of the leg it enters a small gland met with in most subjects, and from hence runs up to the back part of the ham, still lying close to the artery, and in the ham it usually passes through three glands. After it has passed these glands, this single vessel commonly divides into two or three branches, which still accompany the crural artery, and pass with it through the perforation in the triceps. Having passed the muscle, they go up with the artery and enter a gland deeper seated than those which appear on the groin, from which they pass into the superficial gland.

The lymphatics of the lower extremities having now reached the trunk of the body, and passed under Poupart's ligament, appear upon the sides of the ossa pubis, near the pelvis. Some pass up with the iliac artery upon the brim of the pelvis; and others dip into the cavity of the pelvis, and join the internal iliac artery near the sciatic notch. At this place they are joined by the lymphatics from the contents of the pelvis. Besides those which sink into the pelvis, on the inside of the external iliac, others keep on the outside of that artery upon the psoas muscle: of these a part goes up to the loins, and passing under the aorta in different branches, from the left side to the right, joins the thoracic duct. Another part passes under the iliac arteries, and appears upon the os sacrum, making a beautiful net-work, joining the lymphatics of the right side, and passing under the iliac artery, to form the net-work upon the upper part of the right psoas muscle. The lymphatic vessels of the right side, joined by some from the left, having reached the right lumbar region, appear there in the form of a plexus of large vessels, and pass through several glands. At this part, they receive likewise large branches under the aorta, from the plexus on the left side of the loins; and having at last got up as high as the second lumbar vertebra, they all join, and form a single trunk called the thoracic duct: at this part they are joined by the lacteals. See LACTEA VASA.

Into the thoracic duct the lymph from the other abdominal viscera enters. This is brought by a number of vessels, a plexus of which may be traced from each kidney, lying principally behind the emulgent artery, and opening into large lymphatic vessels near the aorta: these the lymphatics of the glandulæ renales generally accompany.

The lymphatic vessels of the spleen pass from the concave side of that viscus, along with the splenic artery in the sinuosity of the pancreas, by the lymphatic vessels of which they probably are joined.

To the stomach belong two sets of lymphatics, the one running upon its lesser, and the other upon its greater, curvature. The former accompanies the coronary artery, and passes through some lymphatic glands which lie by its side. The other set passes from the great curvature of the stomach, through some lymphatic glands that lie close to the arteria gastrica dextra. Descending by the pylorus, it meets the plexus that accompanied the coronary artery, and near the lesser curvature of the duodenum forms a considerable net-work. Into this not only the lymphatics from the spleen enter, but likewise those from the gall-bladder, together with those of the liver, which are very numerous both in its convex and on its concave side. Several branches proceed from this net-work, some running under the duodenum, and others over it; which all open into the thoracic duct.

The lymphatics of the liver, the spleen, and the kidneys, are generally in two sets; one of which lies upon the surface of the organ, and the other accompanies the large blood-vessels in its centre. In the liver, these two sets have been found to communicate with each other; so that, by injecting mercury into the lymphatic vessels which lie upon its convex surface, Mr. Hewson hath filled those which accompany the pori bilarii and vena portæ in its centre. Most of the lymphatic vessels, which lie upon the convex surface of the liver, run towards its falciform ligament, and pass down by the side of the vena cava; but some run towards the right ligament of the liver, where they pass down upon the diaphragm to reach the thoracic duct. The lymphatics on the concave surface run towards the porta, where they join those which come from the centre of the liver, along with its large blood-vessels. The lymphatic vessels of the stomach enter with others into the thoracic duct. All the lymphatics of the viscera, with their different plexuses, are beautifully figured by Mascagni.

The lymphatics of the lungs are in two sets. One set passes on the posterior part of each lobe by its root into the thoracic duct, near the middle of the thorax; the other from the fore part of each lobe rises towards the jugular and subclavian veins. Some of the lymphatics, on the posterior part of the left lobe, creep under the aorta to the thoracic duct. Those from the anterior part of the left lobe proceed to the angle between the jugular and subclavian vein of the same side, joining the thoracic duct at its termination; while those from the fore part of the right lobe do not communicate with the thoracic duct, but pass into the angle between the right jugular and the right subclavian vein.

By the side of each internal jugular vein is a large lymphatic vessel, the trunk of those of one side of the head and neck. Smaller lymphatics are seen near the branches of the external carotid. From various circumstances, it is highly probable that there are lymphatic vessels on the external parts of the head; and, though none have been discovered, on the brain also. The small lymphatics which accompany the branches of the external carotid artery unite upon the neck, and form a large trunk, which accompanies the internal jugular vein, passing through some lymphatic glands, near the termination of this trunk, in the angles between the jugular and subclavian veins. The glandula thyroidæa has many lymphatic vessels, which can sometimes be inflated by blowing air into the cells of the gland: these vessels pass on each side of the trachea, one part going into the angle of the right subclavian and jugular, and the other joining the thoracic duct upon the left side.

Like the leg, each arm hath two sets of lymphatic vessels; one immediately under the integuments, belonging to the skin and the cellular membrane, connecting it to the muscles; the other accompanying the large arteries, from the parts deeper seated.

The lymphatic vessels, discovered and delineated, are in general only to be considered as the trunks, since every part of the body has probably vessels of this kind; for wheresoever variolous matter is inserted, the lymphatic vessels carry it into the body, as is shown by its inflaming the conglobate glands through which these vessels pass.

It is by the action of the absorbent system that many noxious materials are introduced into the habit; as the matter of the small-pox, the lues venerea, the miasmata of fevers: and it is also by their means that mercury rubbed externally is received into the constitution, and produces similar effects on the interior parts. See Fordyce's Elements, part 1st. Dr. Hunter's Commentaries. Monro's Description of the Human Lacteal Sac and Duct. Hewson's experimental Inquiries into the Lymphatic System. Sheldon's History of the Absorbent System. Mascagni Historia.

The *diseases of the lymphatics* are not numerous. They are undoubtedly irritable, and in an inflamed state, at least, acutely sensible; but they never seem to be affected with inflammation from any cause but the acrimony of their contents. In hydrophobia, in lues venerea, and similar complaints, a hard, tender cord may be often traced from the wound previous to the inflammation of the gland. On the other hand, they seem sometimes deficient in irritability; a circumstance on which SCROFULA, vide in verbo, apparently depends.

Amongst these disorders, however, Mr. White properly places the *depôt laiteux sur la cuisse* of Puzos; *ischias a spargonosi* of Sauvages. Most writers have attributed this complaint to a redundancy of milk, and it hence has been often called *œdema lacteum;* by others *phlegmatia dolens;* but it might be more appropriately denominated *ecchymoma lymphatica.* Mr. White describes this disorder more accurately than any other writer, and is the first author who escaped from the trammels of the former doctrine. In about twelve or fifteen days after delivery, he observes, the patient is seized with a great pain in the groin of one side, accompanied with a considerable degree of fever, seldom preceded by a shivering fit and cold rigor. This part soon becomes affected with swelling and tension, which extend to the labia pudendi of the same side only, and down the inside of the thigh, to the ham, the leg, the foot, and the whole limb: the progress of the swelling is so quick, that in a day or two the limb becomes twice the size of the other, and is moved with great difficulty; is hot and exquisitely tender, but without external inflammation. The pain in the groin is generally preceded by a pain in the small of the back, sometimes by a pain at the bottom of the belly, on the same side; and the parts which suffer the most pain are the groin, the ham, and the back part of the leg, about its middle. The pain indeed extends over the whole limb, owing to the sudden distension; but in a day or two it becomes less considerable. It is very hard, smooth, shining, pale, and equable, except where the conglobate glands are situated, which in some cases are knotty and hard, as in the groin, the ham, and about the middle of the leg, at its back part; neither pitting on pressure, nor discharging water when punctured. This disorder generally comes on about the second or third week after delivery; but in one instance it occurred to Mr. White so early as twenty-four hours after delivery, and in another so late as five weeks; but each is uncommon. The first parts that begin to mend, both as to pain and swelling, are the groin, and the affected labium; the thigh next subsides, and lastly the leg. The fever, which is apparently hectic, in some patients declines in two or three weeks, in others it continues six or eight. It sometimes, though rarely, attacks both the extremities. After the disorder has subsided, it is not uncommon for the sound leg to swell towards evening, and become œdematous; but the groin and thigh of that side are not affected; the leg is much softer than the other, and pits when pressed.

It attacks women of all ranks, and of different habits, and is not influenced by the discharge of the lochia, suckling, the nature and duration of the labour, or the mode of delivery, but rather attacks the side on which they lay during labour. The healthy and the diseased; the strong and the weak; the lean and the corpulent; the sedentary and the active; the young and the middle aged, equally suffer; but it seldom happens after a miscarriage, nor to a woman more than once, though she has afterwards more children. It occurs at all seasons and situations; but neither attacks the arms, or other parts of the body; never suppurates, or proves fatal.

The period of the attack, and the elasticity of the swelling, distinguish it from every other disease; and Mr. White supposes it to arise from the child's head pressing the lymphatic vessels, which arise from one of the lower extremities, against the brim of the pelvis, during a labour pain, so as to stop the progress of the lymph, and produce a rupture with a consequent effusion. The extravasation in some habits is reabsorbed readily, in others with difficulty; and by lying out of the course of its circulation, it will press against the uterus and bladder, and occasion forcing pains, and even suppressions of urine. When the orifice made in the ruptured vessel is healed, and the diameter of the tube is contracted or closed, the lymph is retained in the lymphatics, distending the glands of the limb and parts around, and the swelling always begins in that part next to which the obstruction is formed. When the obstruction is in part or wholly removed, or the lymph has found a fresh passage, the part next to it is consequently first relieved. This opinion has been opposed by different authors. Mr. Trye, in his work, published in 1792, considered the disease as owing to an inflammation of the lymphatic gland; Dr. Ferriar, in the third volume of his Medical Histories (1798), thinks its cause an inflammation of the lymphatics of the side affected. Dr. Hall, in an essay on this disease, which he styles *phlegmatia dolens,* published in 1800, supposes it to arise from inflammation and an effusion of coagulable lymph.

We strongly suspect that the nature of the disease is not understood. The fever is apparently idiopathic, and the swelling seems to be a critical deposition, not of pus or of water, but of coagulable lymph. Were Mr. White's opinion correct, it should always appear within a few days, and the fever should be the consequence of obstruction. Were Mr. Trye in the right, the gland should first inflame; and was Dr. Ferriar's system true, pain should be previously felt in the course of the lymphatics. Dr. Hall seems to approach nearer the fact; but the nature of the fever, and the circumstances which influence the deposition, are obscure. Milky depositions, as they have been called, are not uncommon after delivery, particularly in the peritonæum in the peritonitis puerperarum, and other parts; but these are, perhaps, rather depositions of gluten than of milk, or are observable when the milk is checked. In this case the disease is not connected with the suppression of milk; and the only use we can make of the fact is, to show that in such cases the effusion of gluten is not uncommon. If, from fever, such effusion should take place in the legs, we know that, from its density, it cannot be readily absorbed; and it is probable also, that the lymphatics, by the pressure which usually occasions œdematous swellings in the latter months, may be weakened, so as to be still less equal to the conveyance of the glutinous lymph to the thoracic duct. The circumstances of the delivery, or of the position of the child in utero, may have an effect of determining to one side rather than another.

According to Mr. White, in the first or inflammatory stage, antiphlogistics are necessary, in the degree which the patient's strength will permit. The bowels should be kept lax, the pains alleviated by opiates internally, by anodyne fomentations, and by the warm and vapour bath; blisters on the upper part of the thigh, and emollient injections into the vagina, have been found useful; antimonials, the saline draughts given in the act of effervescence, cool acidulated liquors, and cool air, are supposed useful in relieving fever. In the second stage, when the pain abates, the swelling and tension of the parts lessen, though the quickness of the pulse and some degree of fever remains, the patient may be allowed a little wine and a fuller diet. A dose or two of calomel, of two grains each, given at proper intervals, have seemed useful in this stage. Fifteen grains of myrrh two or three times a-day, in a neutral draught in the act of effervescence, may be taken; or to a saline draught, with myrrh, two grains of the ferrum ammoniacale may be added. The limb may be chafed with warm oil, and bathed at first in water of 82 degrees of Fahrenheit, and afterwards of 70. In the third stage, when no complaint remains, except the swelling of the limb, and perhaps a general relaxation, the bark, with or without steel, will be necessary, dipping the limb in cold water, or embrocating it with spirit of wine and camphor. A circular calico bandage applied to the limb will also assist in the recovery: and if the swelling is confined to the small of the leg, the bandage may be changed for a straight or laced stocking, or for a half-boot. Exercise on horseback, and gentle friction, will be of advantage; but walking, or whatever promotes a greater secretion of lymph, will be injurious in every stage of the disease.

Mr Trye endeavours at first to relieve the fever by evacuants, and then, according to his doctrine, attempts to relax the inflamed vessels by fomentations, leeches, and blisters; to promote absorption by emetics, and in the latter stage by friction with mercurial ointment. Dr. Ferriar applies leeches, with cooling remedies; and Dr. Hull, like Mr White, treats the complaint at first as inflammatory, and at last as asthenic. In our hands it has appeared an intractable disease, though relieved at last by the efforts of nature. If the patient is truly such, and the practitioner so unprincipled as to continue medicines which he must know will have little effect, he will at last gain the credit of the cure which nature effects. In our hands the fever has yielded to emetics, evacuants, and opiates. The deposition, which soon assumes a chronic form, scarcely yields to any remedies. The Dover's powder, at night, with occasional laxatives, and at last the bark and the squills, have appeared as serviceable as any of the boasted remedies.

See Mauriceau's Treatise des Maladies des Femmes grosses, &c. edit. 5, 4to; Puzos' Memoire sur les Dépots Laiteux, appelles communement Lait répandu; Levret's Art d'Accouchement, ch. iii sect. 7; Van Swieten's Commentary on Boerhaave's Aphorism, 1329; M. Raulin's Traite des Maladies des Femmes, en Couche; White's Inquiry into the Nature and Cause of that Swelling, in one or both of the lower Extremities, which sometimes happens to lying-in Women; Trye's Essay on the Swelling of the Extremities of Puerperal Women; Ferriar's Medical Histories, vol. iii.; Hull on the Phlegmatia Dolens; and White's Inquiry, part 2.

LYMPHATIC GLANDS are those bodies through which the lymphatics pass. Their structure has never been demonstrated; for while some anatomists suppose them to be cellular, others contend that they are merely masses of convoluted vessels. As we know nothing of the change which the lymph undergoes in these glands, we cannot assist demonstration by theoretical induction. We perceive only that nature anxiously delays the passage of the lymph into the blood; as, previous to their entering the gland, the lymphatic vessels are divided into minute branches. This purpose might perhaps be equally answered by convoluted vessels, as by stagnation in cells, since we find the semen elaborated in the lengthened tubes of which the testis consists. Yet the force of the argument, that some secretion takes place in the cells to animalise this new fluid, is not inconsiderable. Since the end is undisputed, we need not contend for the means. Let us, however, only add, that, in either case, if the contents are viscid, or the irritability of the vessels preternaturally lessened, stagnation must be the unavoidable consequence.

LY'RA, (from λυρα, *a lyre*). The inferior surface of that part of the brain called *fornix*, because its medullary lines resemble the strings of the lyre. See CEREBRUM.

LY'RUS, (from *lyra, a lyre*; because its leaves are divided like the strings of a lyre). See ARNICA MONTANA.

LYSIMA'CHIA. YELLOW LOOSE-STRIFE, or WILLOW HERB, *œnothera, lythrum salicaria* Lin. Sp. Pl. 640 (from Lysimachus, the supposed discoverer), is a small plant found about the sides of rivers, said, without much reason, to be astringent. A name of a species of the *nummularia cassida*, and other plants.

LY'SSA, (from λυω, *to dissolve, à solutione integritatis sensuum*). The madness of dogs and wolves, or of men who are bit by them. When from dogs, it is called *cynolyssa*.

LY'THRON, (from λυθρον, *blood*). Dust mixed with sweat; sometimes menstrual blood. Hippocrates.

M.

M. or m. In prescriptions it signifies *misce*, mix; or *manipulus*, a handful. In the late British pharmacopœias it means *mensurâ*, by measure.

MACA'NDON, (Indian); *cada palava*, a coniferous tree mentioned by Bontius, unnoticed in modern systems, growing in Malabar. Its fruit resembles the pine-nut, is rather insipid to the taste, the flowers resembling those of the honeysuckle. The fruit is roasted, and eaten as a remedy for dysenteries, the cholera morbus, and other complaints Raii Historia.

MACAPA'TLI. See SARSAPARILLA.

MACAXOCOTLI'FERA. The name of a tree in the West Indies, about the size of a plum-tree: its fruit is called *macaxocotl*; is red, oblong, of the size of a walnut, yellow within, sweet, and laxative. Two other species are the *atoyaxacotl*, and *coztieaxocotl*, though said to be a species of mirobalans. The other species are *atoyaxocotl chichiltic*; and *chichiaxocotl*, which signifies *running down with sweat*. A decoction of the bark of these trees cures the itch, and its powder heals ulcers; but the plant does not occur in any botanical system. Raii Historia.

MACEDONI'SIUM SE'MEN. See HIPPOSELINUM.

MA'CER, (from the Hebrew term *masu*). GRECIAN MACER. It is brought from Barbary; its thick yellow bark and dried root are astringent. Its fruit, called *macre*, is said to destroy worms. The plant is not known; but the bark so nearly resembles, in appearance and sensible qualities, the simarouba, that they are probably the same. See SIMAROUBA.

MACERA'TIO, (from *macero, to make soft by water*). MACERATION, is an infusion or the continued action of water, or any other fluid, on bodies, to lessen their cohesion, or extract their virtue. See DURATUS.

MACERO'NA. See HIPPOSELINUM.

MA'CHA-MO'NA. A sort of calabash in Africa and America; the pulp of which is agreeable, and serves instead of rennet for curdling milk. It does not occur in any systematic author.

MACHÆ'RIA. See PERSICARIA.

MA'CHLIS (quasi *achlis*, ab *a* priv. and κλινω, *cubo*, *quod non cubet*). See CERVUS RANGIFER.

MA'CIA. See ANAGALLIS.

MA'CIES, (from *maceo, to become lean*). Diseases in which the body, or particular parts, are wasted. See MARCORES.

MA'CIS, (το μακερ, *cortex aromaticus, aromatic bark*). MACE, the middle bark of nutmegs, enveloping their shell, of an oily nature, and of a lively red colour when fresh, growing paler from age. It is dried in the sun upon hurdles, fixed one over another, which gives the appearance of fractured edges, and sprinkled with sea-water to prevent its crumbling in carriage. It hath a pleasant aromatic smell, and a warm, pungent, bitterish taste. It qualities are similar to those of nutmeg; but mace is warmer, more bitter, less unctuous, and sits easier on weak stomachs; yielding, by expression, a more fluid oil, and, in distillation with water, a more subtile volatile one.

The essential oil of mace is moderately pungent, very volatile, of a strong aromatic smell, like the mace itself, thin, limpid, and of a pale yellow colour, with a portion of thicker and darker-coloured oil at the bottom. There are three kinds in the shops, though expressed from the nutmeg. The oil of mace is often prescribed as a carminative and antispasmodic. As such it relieves often in colics, and sometimes in nephritic cases. Externally applied, it sometimes relieves vomiting and hiccough. Its internal dose seldom exceeds five or six drops. See NUX MOSCHATA. See Lewis's Materia Medica.

MACROCE'PHALOS, (from μακρος, *long*, and κεφαλη, *the head*); long headed. Some Indians, and many of the Asiatics, have by pressure given this form to the heads; and what was at first artificial seems to have been continued by inheritance.

MACROPI'PER, (from μακρος, *long*, and πιπερις, *pepper*). See PIPER LONGUM.

MACRO'PNUS, (from μακρος, *long*, and πνεω, *to breathe*) A person who inspires at long intervals.

MA'CULA, (from the Hebrew term *machala, infirmity*). A SPOT, A BLEMISH; a cutaneous efflorescence which changes the colour, sometimes the texture, of the cuticle, but seldom connected with any disorder of the constitution.

MA'CULA LA'TA. The SHINGLES. See ERYSIPELAS.

MA'CULÆ, or MA'CULA MATRICIS; *nævus maternus*; the spots, or marks, supposed to be impressed by the mother's imagination on the fœtus. See NÆVUS.

MA'CULÆ A'LBÆ. See ALBUGO OCULI.

MA'CULÆ HEPA'TICÆ. HEPATIC SPOTS, or efflorescences proceeding from a dissolution of the blood.

MA'CULÆ OCULO'RUM. See CATARACTA, or SUFFUSIO.

MA'CULÆ PESTILENTES; SPOTS, or efflorescences, frequent in malignant disorders.

MA'CULÆ VOLATICÆ; FUGITIVE SPOTS, such as are often seen in children.

MADARO'SIS, (from μαδος, *bald*). A loss of the hairs of the eye-lids, from an acrimony of the fluids, from eruptions, exanthemata, or inflammation. See DEPLUMATIO.

MADE'LION. See BDELLIUM.

MA'DISIS, (from μαδος, *bald*). See ACOSMIA.

MA'DOR, (from the Hebrew term *matar, water*). *Ephidrosis.* The sweat which arises during faintness.

MADRE'PORA VULGA'RIS, (from μαδος, *smooth*, and πωρος, *a pore*). See CORALLIUM ALBUM RAMOSUM.

MADRO'TES, (from μαδος, *bald*). See ACOSMIA.

MÆMA'CYLON, (from μαιμαω, *to desire*; from its beauty). See ARBUTUS.

MAGDALEO'NES, MAGDA'LIÆ, MAGDA'LIDES, (from μασσω, *to knead*). *Cylindri*; masses of plaster, or of other compositions reduced to a cylindrical form.

MAGELLA'NICA AROMA'TICA A'RBOR. See WINTERANUS CORTEX.

MAGISTE'RIUM, (from *magister, a master*). The ancient chemists meant by this term a peculiar and secret method of preparing any medicine; but at present it is applied to powders made by solution and precipitation (see BENZOINUM, BISMUTHUM, and CALAMINARIS LAPIS), to resins, or resinous extracts, or any white powder peculiarly subtile and light. The term generally implies that some of the menstruum remains. At present we have no general idea, or established characteristic, to distinguish magistery from precipitate. Every magistery is some kind of precipitate; but every precipitate is not a magistery.

MAGISTRA'LIS (from the same). See MEDICAMENTA EXTEMPORANEA.

MAGISTRA'NTIA, (from κατ εξοχην, *magistro, to rule*; so called by way of eminence). See IMPERATORIA.

MA'GMA, (from μασσω, *to blend together*); ECPIE'SMA. In a more general sense, it is any thick ointment that will not melt with the heat of the body, or a poultice that will not easily spread: more strictly the fæces of any ointment after the thinner parts are strained off: Galen limits the term to the fæces of myrobalans.

MA'GNA ARTE'RIA. The LARGE ARTERY. See AORTA.

MA'GNES. The LOAD-STONE. *Calamita, lapis Lydius, antiphyson, lapis Heraclius*, from Heraclea, a town in Lydia. The term, however, is singular in many respects. Its origin is uncertain, but its application and influence have been peculiarly extensive: various cities have been styled Magnesia, and the Magnetes constituted no inconsiderable nation in Asia. Many of these cities have been mentioned as the origin of the name; but it is not our object to determine the question. The stone itself was long known before it was employed to direct the course of the navigator; and is usually of a dirty black colour, though in this respect it varies, and is sometimes whitish, from the mixture of siliceous particles in such a proportion as to render it fusible. Whether from its colour, its weaker powers, or any other cause, this was styled the *female* magnet, and magnesia. When the white earth, precipitated from salts, similar to the Epsom, was observed, this was supposed to resemble the female magnet, and, of course, called magnesia, with the distinction, from its greater whiteness, of *alba*. When another dark metal, similar to the magnet, was discovered, it had the same appellation; but as it did not attract iron, some distinction was necessary, and it was called *mangnet, manganet*, and *manganese*. The magnet, our present object, is the *amorphous*, oxidulated iron of Haüy, iv. 13, often found in Europe, in a matrix of magnesian earth, though sometimes in a ferruginous sand, or a sulphurated lime. Its obvious quality of attracting or repelling iron is well known, and in this experiment the north and south poles are attractive, and each repulsive to its own points in other iron or other magnets. Every, the smallest, portion of a magnet has its two poles, not verging to the real poles of the world, but to those of the magnetic meridian, which varies sometimes a little to the east, sometimes to the west. The smaller magnets are more active in proportion than the larger. Magnets, like all iron ores, are astringent, but not used in medicine. They have been recommended by ignorant quacks in ruptures, to attract the intestine upwards, and to destroy the lentor of the blood, by separating the particles of iron in it. Such are the absurdities that deceit will feign and credulity believe. See MAGNETISM.

MA'GNES ARSENICA'LIS, a preparation of arsenic, which we omitted under that article, but which we noticed under CANCER, vol. i. p. 332, col. 2, q. v. Its name was derived from its supposed power of attracting the morbid poison. Geoffroy adds, that it opens, cleanses, and heals scrofulous ulcers, without the assistance of an ointment of any kind. See CANCER.

MA'GNES EPILE'PSIÆ. See CINNABARIS.

MAGNE'SIA, (from *magnesia, the female load-stone, magnes*). (See ETHEL.) Among the alchymists it means the matter of the philosopher's stone, or sulphur; it sometimes signifies melted tin, with which mercury is incorporated, forming into a brittle white mass; sometimes a mixture of silver and mercury, and a very fusile metal, called *magnesia philosophorum*. But enough of such nonsense.

MAGNE'SIA A'LBA, was a general term which chemists formerly gave to all substances which had the power of attracting any principle from the air. Thus an earth which, exposed to the air, yielded vitriol, was called *magnesia vitriolata*. More modern chemists, supposing that it had attracted the nitrous acid, in its preparation, called it *magnesia nitri*; but, from its colour, it soon obtained its present name, the WHITE MAGNESIA, *albus Romanus pulvis, Comitissæ Palmæ pulvis*. It was introduced as a medicine in the beginning of the eighteenth century, by count di Palma, at Rome, and continued a very lucrative secret. It is a very white, subtile powder, and now known to be a peculiar earth, and the basis of the Epsom salt.

Magnesia was, as we have said, for a long time a lucrative secret, and it scarcely emerged from the language and appearance of a quack medicine, at the time it was first prepared by Mr. Glass of Oxford. Mr. Glass took the form of preparing the medicine from Hoffman,

and was not aware of its nature, or the effect of the addition of the alkali. To Dr. Black we are indebted for the discovery of its being a distinct earth. The Oxford preparation was light and elegant, though unequal; but the imputation of its being adulterated with calcarious earth brought on a dispute between Dr. Glass, the brother of the proprietor, and Mr. Henry. It is now of little consequence where the truth lay; for it is every where prepared with sufficient fidelity. Mr. Henry's process we shall add.

"Dissolve any quantity of sal catharticum amarum in its own weight of water; filter, and add to it, by degrees, a filtered solution of pearl ashes, in an equal quantity of water, stirring them gently, until the mixed liquors have acquired the appearance of a complete coagulum; then cease adding any more of the alkaline lixivium, and immediately throw the mixture into a large vessel of boiling water; keep it boiling for a quarter of an hour, take it out, and put it into a glazed earthen vessel: as soon as the powder hath subsided, and before the water is quite cold, pour it off, and add a fresh quantity of boiling water, till the liquor hath entirely lost its saline taste; next let it be so agitated as to suspend the finer parts of the powder, in which state decant it into other vessels; and having separated the water from the magnesia, by inclination, put it on large chalk-stones, until a considerable part of the humidity is absorbed; then wrap it up in sheets of white paper, and dry it before the fire. Pour hot water upon the remaining powder, stir and decant it in its turbid state, and separate the magnesia from the water as before; thus the whole, or the most of it, will be reduced to an equal degree of fineness.

"The larger the quantity of water into which the precipitated powder is cast, the more speedily and perfectly will the vitriolated tartar, which is formed by the alkali uniting with the acid of the sal catharticum, be washed off. The neutral salt should be washed off as quick as possible, otherwise, by allowing the mixture to stand for some time, the powder concretes into minute grains, which, when viewed with a microscope, appear to be assemblages of needles diverging from a point. These concretions cannot be re-dissolved by any washing, however long continued. Dr. Black orders four times the quantity of water to that of the solution to throw the coagulum into, but that is far too little. The water should be pure; distilled is the best; but it should be kept until its empyreuma is gone off. Hard or impure water makes magnesia coarse and disagreeable. The chalk-stones on which the magnesia is dried should be exposed to a moderate heat, that the moisture may evaporate quickly. Cleanliness should be particularly attended to through the whole."

Magnesia, when pure, is white, loose, and light, of the specific gravity of 2.330 nearly. It is perfectly infusible in the focus of the most powerful mirror, except when it contains particles of flint, which, if the alkali is impure, sometimes happens. When the volatile alkali is employed in the process, no flinty particles are found in it. Magnesia melts, however, with borax, and with some of the earths, though more certainly when the earths and alkalis are united. A new manufactory of china, resembling the sève, is established at Berlin, in which, instead of the kaolin, a magnesian earth, containing flint and an alkali, is the chief ingredient. Magnesia is nearly insoluble in water, but retains a small portion of this fluid within the interstices of its particles with some obstinacy. When, however, the carbonic acid gas is previously united with the water, the magnesia dissolves readily.

Magnesia contributes to the diffusion and suspension of many resinous substances, and, triturated with camphor, renders this medicine more missible with water. It is supposed also to increase the solubility of bark in water, if triturated with it previous to infusion or decoction; but it seems to produce some chemical change in the constituent principles of the medicine, as the colour is not only deeper but more red. Whether it is more active as a medicine than the common decoction has not, we believe, been ascertained.

As magnesia contains about seven-twelfth parts of fixed air, it should be calcined before it is administered, at least when flatulence abounds. The air, however, which is expelled by heat, is greedily recovered by exposure to the atmosphere, so that it should be kept in a phial carefully closed. The magnesia contracts no acrimony by calcination.

Like all absorbents, it corrects acidities in the stomach, relieves the heart-burn and pain in the stomach, colics and convulsions in children, with every other complaint arising from acidity. It is preferred to other absorbents, on account of its laxative quality, when united with an acid. If mixed with rhubarb, it is said to prevent the rhubarb from leaving a costive habit. If the magnesia does not meet an acid, it is inert, and is sometimes supposed to load the stomach as a heavy cold mass. It has been doubted whether it is proper in bilious or putrid fevers, and much idle disquisition has been employed on this subject; for a prudent practitioner will be led, in such cases, to employ medicines of very different qualities. Magnesia can do no good in either disease. See Hoffman's Observationes Physicæ Chemicæ, lib. iv. Obs. ii.; Black's Observations on the Magnesia Alba, in the Essays Philosophical and Literary of Edinburgh, vol. ii.; London Medical Transactions, vol. ii.

MAGNE'SIA OPA'LINA; *magnesia rubicunda antimonii.* OPALINE or RUBY-COLOURED MAGNESIA of ANTIMONY. In making the hepar antimonii, decrepitated sal ammoniac is sometimes added to the antimony and nitre, and the result is, the opaline magnesia. It is a weaker emetic than the liver of antimony, and may be given in considerable doses to horses, to produce sweating. Lemery directs it to be made of equal parts of antimony, nitre, and decrepitated sea salt.

MAGNE'SIA VITRIOLA'TA. See CATHARTICUS SAL.

MAGNETISMUS. MAGNETISM, from its effects on the human body, can be scarcely an object of our attention; yet, as folly and fraud have brought it forward in a conspicuous view, it will be necessary to ascertain its real nature, and the advantages which may have certainly been derived from it in medicine. Add to this, that quackery is too fascinating to the human mind to be long without an object, and the exploded artifice of to-day may, at a future time, revive in a new form—alter & idem.

Magnetism is strictly the power by which an iron ore attracts or repels a piece of iron, according to the point presented, or attracts only a rude mass. The iron ore,

or magnet, can communicate this property to a piece of soft malleable iron, so as to make it much more powerful than any natural magnet. Iron also which has long stood in one position acquires, at either end, its power of attraction or repulsion. This property is confined to iron, though cobalt and nickel are suspected of having a small degree of magnetism; and to possess the power of attraction, iron must be in a soft, malleable state. When oxided in a slight degree, the magnetic power is weakened; when hardened, or in the state of steel, it receives this power in a small proportion. It is equally necessary that its structure (may we be permitted to call it organisation?) should be entire; for a magnetic wire, twisted round a stick, does not lose its virtue, while it has not been so much bent as to destroy its elasticity; but, when it can no longer restore its former shape, the magnetism is lost. A smart blow will sometimes destroy, or, in turn, give this power.

Two important errors on this point must be corrected: the one already noticed, that the magnetic needle, freely suspended, does not lie in the direction of north and south, but a little on the east or west, according to its "*variation*." This fact is repeated to add, that a needle only becomes spontaneously magnetic by lying in the *magnetic* meridian. Another error is, that the magnetic influence resides in the earth. In fact, it seems to pass over its surface; for it is much less obvious in caverns than on the *earth*. The opinion of its cause being one great magnet at the center of the earth is, of course, without foundation.

It has been usual to suppose the attraction and repulsion of magnetic bodies to be owing to two different antagonising fluids. This opinion, supported by the authority of Æpinus, Coulomb, and Haüy, should not be rashly rejected. It is, however, seemingly borrowed from the two electricities; and as we have found that the electrical phenomena with which we are in this work engaged, might be explained on the supposition of a single fluid, so we think the phenomena of magnetism equally compatible with one fluid. Some analogy has been observed between magnetism and electricity; but, if there is any resemblance, magnets are like the electrics per se. Instead of iron being peculiarly attractive of the magnetic fluid, it appears to be the only body which resists it. From this resistance the phenomena apparently arise. Electrics per se equally resist the electrical fluid; but these, if powdered, are changed into conductors. Powdered magnets are still magnetic.

Magnetism differs from electricity in being influenced by very different laws. Magnetism attracts large bodies, electricity small ones; magnetic attraction is constant, electrical variable; the former limited to about two feet, the powers of the latter are unlimited. The magnetic power is also permanent for ages, if not destroyed by an opposite current of a similar nature, as laying two magnets together, with the north poles contiguous, and is not, or very slightly, affected by moisture, water, and oils, nor at all influenced by an electrical atmosphere. A magnet in action may be electrified without disturbing that action, which is also equally active in a vacuum. Heat also diminishes the magnetic power, and entirely destroys it when the iron becomes red; but it is again recovered on cooling.

These observations are sufficient to show that, if magnetism has no power of its own, little medical effect is to be expected from any fancied analogy to electricity; and, indeed, magnetism has no analogy to any part of our system, except the small quantity of iron in the blood, which is too much diffused to be influenced by it. In fact, magnetism has no effects but in the promises of the artful, and the delusions of the credulous.

Not many years have elapsed since what is called *animal magnetism* was supposed to cure every disease, and to free the mind from the trammels of the body the load of earth which confines its active excursions, enabling it to pervade, at will, through distant regions, unlimited by time or space. This imposition has had a variety of professors in different countries; and, at one time, seems to have fascinated minds even of a superior order. It affected chiefly the imagination; and the delusion was, in general, confined to the female world, and the weaker classes of mankind. An hysteric paroxysm was produced, and the wanderings of a disturbed imagination were received as the dictates of inspiration. In these wanderings, medical questions were proposed and answered; but all the answers, like those of the ancient oracles, were vague and indecisive. The gesticulations of the professors were directed to particular parts, and supposed to remove the complaints of those organs. While the fancy was inflamed, the effects were thought supernatural. When that cooled, the power lost its influence. The professors have published their secret, which is a strange mixture of absurdity and fanaticism. They are to powerfully excite the attention, to will an end, with views strictly benevolent, moral, and religious. They were not conscious of any means, and this all-powerful influence was to be excited by the volition of the weakest, meanest, sometimes the most infamous, of mankind. The bubble is now burst, and the experience of this age will, for a time, prevent its revival.

MA'GNUM OS; the third and largest bone of the second row in the wrist. See CARPUS.

MA'GNUS MO'RBUS. The EPILEPSY. Hippocrates.

MAGU'DARIS, (from μαγυδαρις). See SILPHIUM.

MAHMOO'DY. See SCAMONIUM.

MAHO'GANI. This beautiful wood is procured from the *swietenia mahogani* Lin. Sp. Pl. 548, and the bark resembles, in appearance and qualities, very nearly the Peruvian bark. The trees which produce them are also closely connected by botanical affinities.

MAIA'NTHEMUM. See LILIUM CONVALLIUM.

MAIDEN-HAIR TREE, brought originally from Japan, by Thunberg, was styled the tree of forty crowns, from its usual price; but it is easily propagated by cuttings, and now common. The appellation was derived from its leaves resembling those of the adiantum, and Linnæus formed a genus, which he styled *ginko*; found only in one of his later mantissa. This plant was the *ginko biloba*. It flowered for the first time in England in 1790, and the president of the Linnæan society referred it to a new genus, calling it *salisburia*, with the trivial name of *adiantifolia* (Linnæan Transactions, iii. 330). It is chiefly cultivated for its beauty and its nuts, which are not produced till the tree is old. They are said by Kempfer to be nutrient and corroborant.

MAIL-A'NSCHI. A species of rhamnus, growing in Malabar; *Lawsonia spinosa* Lin. Sp. Pl. 498. A de-

coction of its root is commended in gout, and of its leaves in jaundice.

MAIL-E'LOU, and MAIL-E'LOU-KA'TOU, are tall evergreen trees growing in Malabar, which are not found in modern systems. A decoction of the bruised leaves and bark is said to be useful in the after-pains, and to promote the lochia.

MAJORAN'A, (*quòd mense Maio floreat*, because it flowers in May). MARJORAM.

MAJORA'NA CRE'TICA, vel SYRIA'CA. See MARUM SYRIACUM.

MAJORA'NA MAJO'RI FO'LIO, *amaracus*, *sampsuchus*. SWEET MARJORAM. By amaracus the ancients meant sweet marjoram; but by lesser marjoram, the marum. The Egyptians and Syrians call the sweet marjoram by the name of *sampsuchus*. It is the *origanum majorana* Lin. Sp. Pl. 825, a low plant, with slender, square branched, woody stalks; and little, oval, somewhat downy, leaves, set in pairs. On the tops grow scaly heads of small whitish labiated flowers, whose upper lip is erect and cloven, the lower divided into three segments. It is sown annually in gardens for culinary and medicinal uses; but the seeds rarely come to perfection in this climate, and are brought from the south of France, where the plant is indigenous.

The leaves and tops have a pleasant smell, a warm aromatic bitterish taste. Infusions in water have a strong smell, but a weak and unpleasant taste: a tincture made with rectified spirit of wine hath more taste than smell. In distillation this plant yields its virtues to water, and affords an essential oil, in the proportion of ℥i. from ℔xiv. of the leaves slightly dried, though Beaumè obtained a much smaller proportion. This oil is hot, not so agreeable as the marjoram, and when carefully drawn is of a pale yellow colour; though by long keeping it turns reddish, and if distilled with too great heat is red at the first. The dose is two drops.

The aromatic matter rises almost wholly in distillation, so that an extract possesses very little of the virtues of the plant, which is, like the lavender, a warm, stimulating, nervous medicine. The powdered leaves, the essential oil properly diluted, and the distilled water, are agreeable errhines. In its recent state we are told that it has been successfully applied to schirrous tumours of the breasts.

MAJORA'NA OLERA'CEA, SYLVE'STRIS. See ORIGANUM ANGLICUM.

MA'LA. (from a resemblance to *malum*, *apple*). The prominent part of the cheek. (Martinius). See BUCCÆ.

MA'LA ASSY'RIA. See CITREUM.

MA'LA AURA'NTIA. See AURANTIA HISPALENSIS.

MA'LA AU'REA. See AMORIS POMA, and AURANTIA HISPALIENSIA.

MA'LA COTO'NEA MA'JORA, et MINO'RA. See CYDONIA.

MA'LA I'NSANIA NI'GRA. See MELONGENA.

MA'LA PU'NICA. See GRANATA MALA.

MALABA'RICA HE'RBA. See CORU CANARICA.

MALABA'RICA PRU'NA. The fruit of the *eugenia janbos* Lin. Sp. Pl. 672. The fruit is subacid and salutary, and a mildly astringent conserve is prepared from the flowers.

MALABA'THRI O'LEUM. See CINNAMOMUM.

MALABATHRI'NUM, (from *malabathrum*). Ointment of malabathrum, compounded of myrrh, spikenard, malabathrum, and many other aromatic ingredients. See DIONYSOS.

MALABA'THRUM, (from *Malabar*, and *betre*, *a leaf*). Into this word the Greeks corrupted the Indian appellation *tamalapatrum*. See FOLIUM.

MA'LACA RA'DIX. See SAGITTARIA ALEXIPHARMICA.

MALA'CIA, (from μαλαχιον, *a ravenous fish*). See PICA.

MALACOI'DES, (from μαλαχη, *a mallow*, and ειδος, *a form* or *likeness*); *malva betonicæ folio*, *malope malacoides* Lin. Sp. Pl. 974, a plant similar in appearance and qualities to the mallow.

MALACO'STEON, (from μαλακος, *soft*, and οστεον, *a bone*). See MORBI SOLIDI SIMPLICIS and RACHITIS.

MALA'CTICOS, (from μαλασσω, *to soften*). See EMOLLIENTIA.

MALAGMA, (from μαλασσω, *to soften*); *bæos*; synonymous with *cataplasma*, from its effects; but formerly malagmas were made of many other ingredients.

MALAGMA A'RABUM. A cataplasm for strumous swellings and tubercles.

MALAGUE'TTA, or MALAGU'ETA. See PARADISI GRANA.

MALA'RUM O'SSA. The CHEEK BONES, *zygomatica* and *jugalia ossa*, are the irregular square bones, placed on the outside of the orbits. Their corners are reckoned processes; the longest, viz. the posterior and superior, are called the *superior orbitar processes*; the anterior and superior, which end in acute angles, are the *inferior orbitar processes*: the anterior and inferior, which are the shortest, are denominated the *maxillary*; the posterior and inferior, *zygomatic*.

MALATS. Neutral salts, composed of alkalis, or earths, and the malic acid. They are little known, and have not been hitherto used in medicine. See MALIC ACID.

MALAVI'SCUS, (from *malva*, *the mallow*, and *viscus*, *glue*, from its viscidity). See ALTHÆA.

MALAXA'TIO, (from μαλασσω, *to soften*). The softening of any thing.

MALAZISSA'TUS. *Emasculatus* and *mulieratus*; an appellation of those whose testes have not descended into the scrotum.

MA'LE. See AXILLA.

MALIC ACID. A vegetable acid found chiefly in unripe apples, as well as in plums, gooseberries, elderberries, barberries, and even in the houseleek. It becomes oxalic by the addition of nitric acid, and carbonic acid by distillation. See CHEMISTRY.

MALICO'RIUM, (from *malum*, *an apple*, and *corium*, *the rind*; because it outwardly resembles an apple). See GRANATA MALA.

MALI'GNITAS, (from *malignus*, *evil*). MALIGNITY, when applied to fevers, means a high degree of putridity; and its signs are, a slight coldness and shivering, quickly followed by a great loss of strength, a small, quick, and contracted pulse, fainting, if in an erect posture, drowsiness without sleep, or the sleep not refreshing, but followed by a greater decay of strength and delirium. There is little pain, thirst, or

other troublesome symptom, and yet the patient is uneasy, the features contract and sink, the extremities become cold, the pulse intermits, and death soon terminates the scene.

MA'LIS. *Cocyta.* A pungent pain from an animalcule lodged in an ulcerous tumour; or pain from an insect lodged in any part without ulcer or tumour. The insects which produce this pain are various. In Persia it proceeds from the gordius medinensis, or dracunculus persicus; in America by the pulex, and sometimes even by the pediculus.

MALLAM-TO'DDALI. *Celtis orientalis* Lin. Sp. Pl. 1478. The name of a tree in Malabar whose root, bark, leaves, and fruit, are esteemed specifics in the epilepsy. Raii Historia.

MALLE A'MOTHE. *Pavetta, erysipelas curans arbor, pavetta indica* Lin Sp Pl 160; a shrub which grows in Malabar. The leaves boiled in palm oil cure the impetigo; the root powdered and mixed with ginger is said to be diuretic. Raii Historia

MA'LLEI MU'SCULUS EXTE'RNUS vel SUPE'RIOR. See TENSOR MEMBRANA TYMPANI.

MA'LLEI MU'SCULUS INTE'RNUS. See LAXATOR MEMBRANÆ TYMPANI.

MALLE'OLUS, (from its resemblance to a mallet). The ANCLE. (See ASTRAGALUS). In BOTANY, the cuttings of vines, with joints of the old wood at their bottom, resembling a little mallet.

MALLEO'LUS EXTE'RNUS; the talus or ancle-bone, or the inferior extremities of the tibia and fibula. See FIBULA.

MA'LLEUS. A MALLET, and one of the bones in the ears; (see AURIS.) This bone hath a large round head, which contracts the whole way from the neck, whence the processus Ravianus arises, and on the outside a short process projects outward, pointing against the membrana tympani. From this part the manubrium or handle is continued down, and its extremity, fixed to the tympani membrana, pulls it inward. When the malleus is in its proper situation, the neck and head are turned upwards and inwards, the handle downwards, its short process upwards and outwards near the upper part of the edge of the tympanum, and the processus Ravianus forwards, reaching to the articular fissure in the os temporis, whence we may distinguish the malleus of one ear from that of the other. The handle of the malleus is tied to the membrana tympani by a fine membranous duplicature. This bone hath three muscles, viz. the *laxator* and *tensor membranæ tympani*, and the *musculus externus, auris* Du Vernii.

MALPI'GHIA, (in honour of *Malphigi*). BARBADOES CHERRY-TREE. *Cerasus Americana, Malphigia punicifolia* Lin. Sp. Pl. 609. The fruit is eaten by the native Americans, but has no medicinal virtue.

MA'LUM. A DISEASE. (See MORBUS.) In a strict sense it is applied to the unnatural protrusion of the *apple* of the eye, called *procidentia oculi*; consists in an enlargement or protrusion of the eye-ball, when the eyes exceed the bounds of the eye-lids. Its more general meaning is the fruit, *apple*, which in inflammatory and other febrile complaints is allowed as food when roasted. Sliced and infused in boiling water, apples make a pleasant diluting drink. When thoroughly roasted the soft pulp is applied to the eye in form of a cataplasm, in cases of ophthalmia, if the eye itself should not be too irritable. Its advantages consist in its very slow communication of heat, in consequence of its texture, so that it continues cold for a long time. See CALIDUM.

MA'LUM CI'TREUM. See CITREUM.

MA'LUM GRANA'TUM. See GRANATA MALA.

MA'LUM MO'RTUUM. A malignant species of lepra or scab, which renders the body livid, with crusty ulcers, void of sanies and of pain.

MA'LUM TE'RRÆ. See ARISTOLOCHIA ROTUNDA.

MA'LUS, (from μαλον, *an apple*). The APPLE-TREE. The many sorts of apples known in this country are varieties only of one species: at least the crab is our only indigenous apple. Our most valuable species are derived from France, as the names import, the pippin (pepin), quarington (charenton), nonpareil, &c. Some valuable varieties are, however, derived from these, under our own hands, which it is unnecessary to enumerate The apple, when raw, is a cold and flatulent food, not suitable to weak stomachs. The wilding of different countries is the origin of the more improved species, and from it a kind of vinegar is made. Its juice is, however, acerb, and not acid; for it hastens rapidly into fermentation, and if this is carefully checked, it becomes a vinous liquor, resembling old *hock*, which will not by any artifice become vinegar

MA'LUS SYLVE'STRIS, *agriomela, agrestis, malus acido fructu sylvestris.* The CRAB-TREE, the WILDING, *pyrus malus* of Lin. Sp Pl. 686, *α.*

MA'LUS AURA'NTIA. See AURANTIA HISPALIENSIA.

MA'LUS CYDO'NIA. See CYDONIA.

MA'LUS I'NDICA. See BILIMBI.

MA'LUS MALABA'RICA. See CANIRAM.

MA'LUS ME'DICA, and PE'RSICA. The CITRON, LEMON, and PEACH.

MA'LUS PU'NICA. The POMEGRANATE. See BELAUSTIUM, and GRANATA MALA.

MA'LVA, μαλαχη, (from μαλασσω, *to soften*). The MALLOW, *malva rotundifolia sylvestris* Lin. Sp. Pl. 969; sufficiently known. Its leaves and flowers are slightly mucilaginous, have no remarkable smell and are merely emollient. A conserve is made from the flowers; the leaves are used in decoctions for clysters, for emollient fomentations, and in cataplasms. The roots have been employed as a pectoral: they have a soft sweet taste, resembling that of liquorice, but without any remarkable smell. An extract from the tincture is very sweet. The leaves possess powers similar to the althea; and their use is superseded for internal purposes by those of the latter. See Raii Historia; Lewis's Materia Medica.

MA'LVA ARBO'REA MARITI'MA; *althæa arborea maritima, lavatera arborea* Lin. Sp. Pl. 972. The MALLOW-TREE agrees in virtues with the common mallows.

MA'LVA BETO'NICÆ FO'LIO. See MALACOIDES.

MA'LVA RO'SEA FO'LIO SUBRO'TUNDO; *malva arborescens, malva hortensis, dendromalache, alcea rosea* Lin. Sp. Pl. 966. TREE or GARDEN MALLOW, and the HOLLYHOCK. This plant is chiefly cultivated as ornamental in gardens; and in medical virtues is similar, but inferior, to the common mallow.

MA'LVA VERBENA'CEA; *alcea, alcea vulgaris major, malva alcea* Lin. Sp. Pl. 971. VERVAIN MALLOW, is

distinguished from the common mallow by its leaves being deeply cut at the edges. It is similar to, but less mucilaginous than, the other mallows.

MA'LVA-VI'SCUS. See MALAVISCUS and ALTHÆA.

MALVA'SIA, MALMSEY; *marvisium*; a rich generous wine of Spain and the Madeiras, supposed to be the arvisium of the island of Scio.

MALVERN WATER rises in Worcestershire, and it contains lime, with a small proportion of magnesia, suspended chiefly by carbonic acid gas. A very small quantity of sea salt is occasionally found in it. The proportion of fluid is very large, and this is one of the purest of our cold mineral waters. It is applied in inflammations of the eyes, and drank in all complaints of the kidneys and bladder, scrofula and cutaneous diseases.

Dr. Wilson, in a late elaborate work on this water, seems to think that its solid contents, though in a small proportion, may be useful, especially as they are of the kind used in the diseases for which the water is celebrated. He found in a gallon of *Holywell* water above five grains of carbonate of soda, and nearly three of the sulphat of soda. It contained also about a grain and half of common salt, nearly a grain of carbonate of magnesia, and about the same quantity of carbonate of lime. The carbonate of iron scarcely exceeded half a grain. The ingredients of St. Ann's Well were the same, but in a much less proportion. He found the waters laxative; but, at first, they sometimes produced nausea, and occasionally feverish heat.

MAMÆ'RA FŒ'MINA. See PAPAYA FŒMINA.

MAMA'NGA FRU'TEX, an arborescent shrub in Brasil, called by the Portuguese *maopratas*, but not included in the botanical systems. Its leaves are applied to wounds and ulcers, and the expressed oil of its pods is used in maturating poultices. Raii Historia.

MAME'I. The *mammæa Americana* Lin. Sp. Pl 731, *mammoe*, *momin*, or TODDY-TREE, is a fine tall tree, constantly of a beautiful green colour, somewhat resembling the walnut-tree. Its trunk rises to the height of seventy feet, and is terminated by a number of branches which form a vast pyramidal crown. The fruit is twice as large as the fist, and is very agreeable. This tree is found in different parts of the West Indies, but the best are those on the island of Hispaniola. From incisions made in the branches a copious discharge of pellucid liquor, called *momin*, or toddy-wine, is produced, which must be drank sparingly, as it is a powerful diuretic; but it is esteemed a preservative from, and a solvent of, the stone. The fruit is sweet, and of an aromatic flavour; but the two first shells, as well as the pulp which surrounds the kernels, must be removed, since the latter leaves a very permanent bitter in the mouth. It is usually eaten at tables, cut in slices, and macerated in sweet wine. Excellent marmalade is prepared from it by the addition of sugar and spices, which is often brought to Europe as a dry preserve. Brandy distilled from the flowers is highly pleasant, and called the *Creole liqueur*. The gum of the bark kills the chiques which often infest the feet of the Creoles. The Asiatic species is referred, by modern botanists, to the new genus *butonica*, formed chiefly from the *eugenia* of Linnæus, with the *baringtonia*, the *commersonia* of Foster, and some others. A plant which appears to be of this genus, the *mammea humilis*, Vahl suspects to be the *rhedia laterifolia* Lin. Sp. Pl 719. See Raii Historia.

MAMI'RA, is said by Paulus Ægineta to be the root of a plant of a detergent quality. It has been supposed the root of the *doronicum*; but it has not been correctly ascertained.

MAMIRA'AN, is a plant which grows in the water, resembling in its leaf the convolvulus; its taste is hot and bitter, and the seed resembles that of sesamum.

MA'MMÆ, (from μαμμα, *mamma*, plural *mammæ*). The BREASTS. In the breasts we distinguish the mammillæ, or nipples, the areola, the brownish circle around the nipples and the lactiferous vessels. The breasts are composed of a glandular substance and fat; the glandular part is hard, white, and irregularly mixed with fat, seemingly composed of tubes called *tubi lactiferi*. See LACTIFERI DUCTUS.

Though the breasts are usually spoken of as single glands, they are in reality a congeries of glandular bodies, of a small size, and a somewhat flattened shape. Mr. Cruickshanks has described them as acini; but other authors, with more reason, have supposed these small bodies to be merely convoluted vessels. From these small glands tubes emerge, which enlarge and anastomose freely; but, when approaching the nipple, near the areola, contract and open by distinct apertures. Fifteen of these are often counted on a small nipple, though other anatomists lessen the number. The areola is covered with a skin much more soft and fine than that of the general surface, resembling rather the ephelion of the lips and mouth, and interspersed with sebaceous glands, obvious even to the sight, to defend this tender covering from the pressure and the saliva of the child's mouth. The nipple itself is formed of a congeries of these small tubes. The different vessels, either lactiferous or secretory, are minutely divided by fat, and thus give the roundness, the fulness, and firmness of a well-proportioned mamma.

The colour of the areola greatly differs even in different women; and, in some, it is so brown, as even in the natural state to give a suspicion of impregnation. (See MEDICINA FORENSIS.) In chlorotic and unhealthy women it is pale; in the Samoeids and negresses black; and in brown persons of a deeper colour. The hue is evidently derived from a fulness of the arteries, though in what manner it is modified we cannot easily say; probably by the colour of the rete mucosum; for all the sexual organs have a brownish tint. In women of the most brilliant and delicate complexions, the colour of the areola resembles that of a rose.

The female mamma sympathises very pointedly with every part of the genital system, generally with the clitoris, more sensibly and strictly with the ovaria and the uterus. At the approach of the menses the breasts enlarge; at their cessation they wither. After the lochia cease, the milk begins to flow, and this connection is so intimate, that it has been attributed to the anastomosis of the extreme branches of the epigastric and mammary arteries on the abdomen. This is, however, highly improbable; for their union is inconsiderable, and not peculiarly distinct at any particular periods. The sympathy, however, is so striking, that the Hottentots and the Scythians (Herodotus) irritate the vagina to increase the flow of milk from their cows and mares. It is highly probable that the milk is carried to the nipple, and often

discharged from it by the action of its own vessels, and that the child drains the breast, not so much from its own powers, as by exciting the action of the lactiferous tubes. Thus a sensation is felt, when the child approaches, of some internal commotion of the mamma, which females distinguish by the term *warping*, and they are excited so much by the irritation of the vagina, as to render it doubtful if it is always prudent to deprive the hireling nurse of the company of her husband. A sentimental feeling also influences the secretion: thus the milk does not flow so freely on the application of a strange child as of a woman's natural offspring; and exciting the attention, especially if this is accompanied with a little terror, will wholly suspend the discharge.

The connection of the secretion of milk with the general state of the nervous system is also strongly marked. The maternal office of suckling is always attended with a calm serenity of mind, scarcely felt in other situations, and the suppression of the milk, on its first appearance, with irritability, languor, or despondence. The last, indeed, sometimes attends the period of suckling, though the milk continues to flow, from causes that cannot be ascertained. It seems to affect the young and the strong, rather than those of the middle period of life, or of weaker constitutions; the first lyings-in rather than future ones. The apprehensions of death, in those rare and inexplicable cases, are, however, so strong, that nothing can conquer them: the dejection so firmly fixed as to bid defiance to medical aid. In some cases it has continued for some years, but another pregnancy is usually an infallible cure.

Though the final cause of the connection of the uterine with the lactiferous system is obvious, yet, as usual, nature acts by general laws. Thus a false conception is attended with a fulness of the mammæ, and the want of ovaria, as we have seen, has occasioned the breasts to remain in the state of the earliest periods. The irritation of a cancerous tumour in the uterus has, however, no effect of this kind, for it seems of a sedative nature; or perhaps the principium and fons of the irritation must be in the ovary.

It is a circumstance singular and inexplicable that men should have all the organs which produce and convey milk like women. Is it that the sex is determined after the rest of the body is formed, or that, in cases of necessity, men should be able to supply the office of the woman? The first is highly improbable; and though we have one instance of a man affording his motherless offspring this sustenance, the experiment has not been again tried, or not succeeded. Yet, on birth, when all the fluids begin to circulate freely, male children, as well as females, have often milk in the breasts. On the whole, were men subject to a partial plethora like that which takes place in menstruation, and were there an established sympathy between the breasts and genital organs, it is probable that they might become nurses. But neither the plethora nor the sympathy exist; and though we have found tumours in breasts of men, we have never heard of their becoming cancerous. Girls of the best character, by the irritation of a child sucking, have become able to support it. A woman of sixty-eight is recorded in the Philosophical Transactions to have suckled a grand-child; and one of eighty, in a Swedish Journal, is said to have performed the same office. Russel mentions a similar fact respecting a barren sheep, in his treatise De Tabe Glandulari, p. 64.

The number of teats in different animals correspond to the usual number of their young; but it is singular that, however the numbers differ, they are always even. Animals that do not give suck are generally oviparous; but some of the vipers, and some reptiles styled viviparous, are not strictly such; for their young are inclosed in eggs, which are hatched some time previous to the birth. A step between these and animals who are really viviparous may be observed in the didelphis, of which the kangarou is a species. These animals produce their young in an unformed, imperfect state; but they are for a long time concealed, and protected in a second uterus, formed under the belly by a duplicature of the skin, in which the nipples are found. While thus speaking on comparative anatomy, we may add, that the horse was supposed to have no nipples; but Daubenton discovered them under the prepuce.

The arteries and veins are ramifications from the arteriæ and venæ subclaviæ, and from the axillares. The nerves are principally from the costales, which communicate with the nervi sympathetici. The lymphatics pass through the axillary glands, though Meckel suspects that he has traced them into the subclavian veins. See Kolpin de Structura Mammarum, Sabatier Traité d'Anatomie.

MAMMÆA'RA MAS et FŒ'MINA. See PAPA'YA MAS FŒMINA.

MAMMA'RIÆ ARTE'RIÆ, (from *mamma, the breast*). The ARTERIES OF THE BREAST. The *external* are branches from the axillary arteries, and called the superior thoracic. The internal proceed from the anterior and lower side of the subclaviæ, near the middle of the clavicles, and run down for about a finger's breadth, behind the cartilages of the true ribs, an inch distant from the sternum. In their passage they send branches to the breasts and to several of the adjacent parts; they afterwards go out of the thorax on one side of the appendix ensiformis, and are lost in the recti muscles of the abdomen.

MAMMA'RIÆ VE'NÆ INTE'RNÆ. The right springs from the vena cava, a little below the bifurcation, and runs with its corresponding artery along the internal edge of the sternum. The left springs from the subclavian, or from the axillary vein.

MAMMEA AMERICANA, Lin. Sp. Pl. 731, the plant which affords the grateful salutary fruit, the mammè.

MAMMIFO'RMES, or MAMILLA'RES PROCE'SSUS. See TEMPORUM OSSA.

MA'NACA. The name of a bacciferous shrub in Brasil. The root is powerfully emetic and cathartic, and used on some occasions by the natives (see Raii Historia); but the plant is not found in modern systems.

MANATE'A LA'PIS, (from *manati, the sea cow*). *Trichecus manatus* Lin. Syst. Natur. 60. The part of this animal which hath been used in medicine is the os petrosum of the head, which is of various forms, hard, and white, resembling a stone and ivory.

MANCANI'LLA, *hippomane mancinella* Lin. Sp. Pl. 1431. The MANCHINEAL-TREE is as large as the oak; the juice of the bark, while fresh, is caustic; the fruit and leaves are equally so, though eaten by goats. The wood is sawed into planks, and brought into England

as ornamental wood. It is of a dusky colour, with brown veins and yellow clouds. It is supposed that the shade of the manchineal tree, as well as the dew beneath it, is injurious; but this is fabulous. Dutour has often rested under its shade without feeling any bad effects; though he suspects, for reasons which he does not assign, that the air is unwholesome, and advises travellers not to seek shelter under it during a whole night. The Indians poison their arrows with its juice; and Valmont de Bomare mentions an experiment with an arrow, which had been dipped in this juice a hundred and forty years before; but a wound inflicted by it on a dog was soon fatal. See Raii Historia.

MANCORON, probably sugar, since it is a sweet substance found in cane. Oribasius.

MANCURA'NA. See ORIGANUM.

MA'NDARU, *assitra, bauhinia variegata* Lin. Sp. Pl. 535, the pod-bearing Malabarian tree with bifid leaves. The flowers purge; and the roots, if chewed, relieve pains in the teeth. All the species of Bauhinia appear to possess similar qualities.

MANDI'BULA, (from *mando, to chew*). A JAW. See MAXILLA.

MANDII'BA, MANDII BABURA, MANDIIBU'MANA, MANDII'PEBA, MANDIO'CA. See CASSADA.

MANDRA'GORA, (from the German *man dragen*, bearing or resembling men). *Canina malus; dudaim;* the MALE MANDRAKE, *atropa mandragora* Lin. Sp. Pl. 259, hath monopetalous, multifid, bell-shaped flowers; its fruit is soft, globular, and contains seeds, which are generally kidney-shaped. It is common in Spain, Italy, and other hot countries: is anodyne, narcotic, and cathartic; but only used internally as a discutient.

The roots of the marsh-mallow, of the arundo, and of bryony, are made to resemble the male mandrake roots.

MANDRAGORI'TES, (from μανδραγορα, *mandrake*). The MANDRAKE WINE is made by putting half a pound of the bark of the mandrake to nine gallons of wine. After standing three months the process is complete.

MANDUCA'TIO, (from *manduco, to chew*). See MASTICATIO.

MANDUCATO'RES MUSCULI, (from the same). See MASSETER MUSCULUS.

MA'NGA. (Indian) *Mangas, amba, ambalam, mao, conchifolia*, the MANGO TREE, *mangifera Indica* Lin. Sp. Pl. 290, is a native of the East Indies. The fruit is larger than a goose's egg, flattened, shaped like a kidney, and of a gold-yellow colour. It is pickled unripe in the acid milk of the cocoa nut, the kernel filled with garlic, and, in that state, sent to Europe. See Raii Hist.

MA'NGA. See ABALAM.

MANGANESE. *Magnesium, magnesia nigra*, and *siderea, manganese oxyde* Hauy iv. 243, is of a black brown colour, with occasionally a little of the metallic splendour, of a specific gravity from 3.70 to 4.75. Some varieties which stain the fingers are much lighter. It is divisible in rhomboidal prisms of about 100° and 80°, and colours borax of a violet hue when exposed to the blow-pipe. It was long supposed to be an ore of iron, and though shown in 1770 by Kaim to contain a peculiar metal, it was only completely reduced by Gahn about the year 1774. Manganese attracts oxygen more rapidly than any other body, except phosphorus and the black oxide; that most commonly employed contains sixty parts of the metal and forty of oxygen. In this variety the oxygen seems in excess, and the excess only is yielded in decomposition; for the white manganese retains its oxygen with great obstinacy.

It is needless to enlarge on the preparation of manganese, as its chief use is in preparing the oxygenated acids and salts. M. Alyon has recommended an ointment composed of the black oxide of manganese with axunge, in the proportion of one dram to an ounce, which he recommends in a variety of external diseases, where the oxygen is apparently deficient, but whose boasted merits experience in this country has not supported. In the preparation of oxygen for respiration, manganese is chiefly used, and it is the principal ingredient in Guyton's box to secure from contagion. Those, however, who prepare oxygen gas should recollect the observation of M. Seguin, that some manganese at first yields a portion of azotic gas.

MANGARA'TIA. See ZINGIBER.

MA'NGLE. See GUAPARAIBA.

MA'NGOSTAN. *Garcinia mangostana* Lin. Sp. Pl. 635. A tree which has been transplanted from the Molucca islands to Java, and at Batavia is admired as an ornament in gardens. It resembles the citron tree, has a straight trunk, an equal and regular head, and rises from eighteen to twenty feet in height. The mangostan, in the works of modern naturalists, is of the natural order *guttiferæ*, as some of the species afford a gummy resin, resembling, in appearance and power, the *gutta gambu*. The fruit is equally pleasing to the smell and taste. The odour resembles that of the strawberry: the flavour is said to unite the sweetness of the cherry, the orange, and the grape. The mangostans are wholesome, refreshing, and never produce any inconvenience. Dr. Solander, who was at the point of death from a putrid fever at Batavia, found them so refreshing, that he attributed his recovery to them. The fruit itself is laxative, the bark styptic and astringent. The decoction of the bark is given in dysenteries, and employed as a gargle in aphthæ. The Chinese employ the bark in their black dye. The only other species of the system of nature affords a much more acid and less grateful fruit; and, indeed, it seems a variety only. To this genus Gærtner has referred the cambogia gutta of Linnæus; but on this subject we have already spoken; and Lamarck has added two other species.

MA'NIA, (from μαινομαι, *to rage*); *delirium maniacum, paraphrosyne; phrenitis apyreta, heracleius*, MADNESS. (See also MELANCHOLIA.) This disease receives different appellations, according to its violence, its causes, and attending circumstances. Melancholy is the primary disorder, and madness is supposed, though inaccurately, to be the higher degree.

Madness, in all its species, is a chronical disorder, and has been defined, "The perception of objects not existing, or at least not corresponding to the senses," and is consequently a preternatural state of sensation. Dr. Cullen places it in the class *neuroses*, and order *vesaniæ*, defining it an universal insanity. This definition is, however, very defective, since the chief term is the object of the definition. That of Sauvages is still more exceptionable, as he confines madness to errors of judgment with fury. Those of Linnæus, Vogel, and Sagar, either define mania by insania, or confine it to fury and boldness. Dr. Battie, who styles it false perception, is equally imperfect. It may, perhaps, be more

correctly defined an irregular exertion of the mental powers, particularly those of perception and judgment, without fever, often with great violence. Dr. Cullen distinguishes three species; the *mania mentalis*, when wholly from the affections of the mind; *mania corporea*, or *inanitorum*, when evidently from a fault in the body; *mania obscura*, when not preceded by any evident mental affection or disorder of the body.

These species are, however, incorrect; but a mere nosological disquisition would not have detained us, had not this view of the subject led to erroneous ideas of the disease. Perhaps there is no disorder purely mental. When affections of the mind produce corporeal complaints, they first act by injuring the functions of the body; when the mind also is diseased, bodily changes first appear; and, in the case before us, the most purely mental maniæ are found to arise from topical affections of the brain. (See MENS and MENTALES). There is not even a sufficient foundation for distinguishing those species which arise from atonic gout, repelled eruptions, syphilis, &c.; for, though originating from bodily causes, they continue like the apparently mental diseases. In short, there is no foundation for the subdivision of species in this complaint; since, like many other reputed genera, it is only itself a species.

The union of mania with melancholy is, we have said, equally inaccurate; for the melancholic mania is a variety only. We shall find melancholy distinguished as a peculiar temperament, marked by languor and inactivity in all the functions; and, while it occasionally rises to insanity, even in its last stage, it is clearly distinguishable from other varieties of mania. The phlegmatic, the sanguine, the bilious, as well as the melancholic temperament, are subject to insanity.

Some authors have unnecessarily varied the species from the circumstances or causes of the disease, almost realising the axiom of the porch, that all fools are mad; but these are only varieties, and scarcely admit of any difference in the practice.

Dr. Battie, we have said, considers madness to consist in false perception; but this is a partial view; for the perceptions are often correct, but the reasoning or the judgment are defective; yet the perception is more frequently in fault than the reasoning. The mind is all alive, but its exertions are irregular; indeed the mental excitement is so great, that mad persons are often not subject to the effects of cold, nor generally susceptible of the infection of fever. On the contrary, other diseases are cured by madness coming on. We remember to have seen a most inveterate asthma immediately relieved by a maniacal paroxysm, and the asthma returned when the madness lessened. It has been said, on the contrary, that madness is itself removed by the access of an intermittent; but we hesitate in admitting observations made at a time when intermittents were thought highly salutary.

M. Pinel, in a late work on insanity, has hazarded a more singular opinion, viz. that the violence of maniacal paroxysms may be only efforts of nature to relieve some latent disease. Though this idea may be, in some measure, countenanced by the facts mentioned respecting asthma, yet its general absurdity is too striking to require our employing a moment in its refutation. The species of mania, according to this author, are less exceptionable. These are melancholia, or delirium, on one subject exclusively; mania without or with delirium; dementia, or the abolition of the thinking faculty; and idiotism, or the obliteration of the intellectual faculties or affections. The second species only requires a remark. It is defined "a perversion of the active faculties, marked by abstract and sanguinary fury, with a blind propensity to acts of violence, without any sensible change in the intellectual functions." There is, however, some doubt, whether this is properly a species. The instances are, in part, those of violent passions, in support of the axiom, *ira furor brevis*; and, in part, of paroxysms truly delirious. Periodical mania, according to M. Pinel, is only a form of madness, and not a distinct species, classed as a variety of the third.

The false perception, or false reasoning, which distinguishes mania, sometimes pervades every subject, but very frequently one only. Of the latter Don Quixotte affords an admirable specimen, drawn in a style truly interesting and correct, and supported with the precision which the most minute medical observation could not improve. In Le Sage and Smollet we have pictures of the same kind delineated with equal skill, though not equally extended. In general, the subjects on which this kind of insanity is conspicuous, are those less familiar to the patient's general habits of life, and on which he is imperfectly informed. The tradesman is bewildered in his calculations for paying the national debt; and the debauchee in investigating the mysterious ways of Providence, or reconciling the sublime truths of revelation with the shallow views allotted to human reason. As religion is of all subjects the most interesting, and least within the powers of the human mind, it is the most common cause of insanity, and of the most obstinate cases of the disease.

Insanity seldom attacks at once: its approaches are gradual; and, as suspicion and cunning are the most striking mental symptoms, these are often conspicuous in the earliest stages. In delineating the symptoms, we must distinguish between the idiotic insanity, the melancholic, and the sanguine; for these are the most striking varieties. We mean not at present to dispute the propriety of distinguishing complete idiotism as a species, but merely to mark that languid state peculiar to leucophlegmatic habits, and approaching with slow, undistinguishable steps.

The *idiotic insanity* commences with silence and reserve; with muttering, inattention to the person who speaks, and a want of recollection of what has lately passed. The muttering becomes more distinct; and it then appears that some images are presented to the mind different from the objects before the patient. In fact, if "*false perception*" does not take place, objects do not make their usual impression, or the mind, less impressed with the objects around than with its own ideas, suffers the latter only to have any influence. In this state the sleep is usually disturbed, though sometimes sound and uninterrupted; but, when sound, the patient is not refreshed, nor is the mind more steady when awakened. In general, the head appears loaded, and the eyes red; though, in some cases, each symptom is wanting, but the bowels are always slow in their action, and stools are unfrequent; the patient is insensible to the calls of hunger and thirst, to the impressions of cold, but not indifferent to worldly objects. On the contrary, distrust

and suspicion predominate; and the greatest cunning is exercised to obviate the effects of what the patient supposes most detrimental to his interest. The pulse is often little affected, and the urine copious and pale.

Even in this situation opposition will excite to violence, and strength, apparently incompatible with the general weakness, will be exerted, to counteract what the patient may dislike. In this case the eyes become quick and fiery, the countenance is animated, while the extremities are cold, the hands tremble, and every function, except what is roused to opposition, appears peculiarly weak.

The *melancholic* madness does not greatly differ; but the patient, when roused to answer, appears to have lost none of his mental faculties. Often, while his fancies prevail, he will reason with acuteness in their support, and his precautions to guard against injury, when he fancies himself a brittle vessel, are ingenious and well conducted. In these circumstances the pulse is languid, the bowels peculiarly torpid, the urine limpid, the sleep often heavy, but without relief, or, when it occurs, the patient is insensible of it, and denies, with violence, having slept. The mind, in this kind of madness, rests on one idea, with unusual pertinacity, and the violence, on contradiction, is peculiarly vehement. The distinction between these two varieties does not seem to consist so much in the temperament, as in the wandering in the former, and the permanent ruling idea in the latter. To which we may add, that the first is the disease of a weak, and the latter of a strong, mind. Aretæus describes the melancholic mania with singular precision. "Those who are affected with melancholy are sad, dejected, and dull, without apparent cause. They tremble for fear, are destitute of courage, affected with watchings, and fond of solitude. They are prone to anger, changeable in their tempers, and ask a reason for the most trifling and inconsiderable occurrences. They are at some seasons so covetous that they will not part with any thing, but soon become silly and prodigal. They are generally costive, sometimes discharge no fæces at all, at other times their excrements are dry, round, and covered with a black and bilious humour: they discharge a small quantity of urine, which is acrid and bilious. A large quantity of flatulencies are discharged from their mouths; and sometimes they vomit a certain acrid humour with the bile. Their countenances become pale, their pulse is slow. They are lazy and weak, but discover a preternatural voracity in eating their aliments. When the disorder advances to madness, the patient, when provoked to anger, becomes raging mad. Some wander far from home; some cry out in a hideous manner; some shun the sight of men, betake themselves to solitude, and only converse with themselves; others tear and mangle their bodies. In the highest degree of this disorder they perceive red images before their eyes, so that they in a manner think themselves struck by lightning. They are immoderately inclined to venery, so that they caress publicly, without either dread or shame. But when the disease is in its decline, they become stupid, calm, and mournful; and coming to the knowledge of their misfortune, they are dejected on account of their calamitous and miserable situation."

The *sanguine* mania greatly differs. It is at first marked by irregularity of spirits, sometimes highly elevated, and proportionally depressed; in either case without sufficient reason. This kind of insanity is often the effect of sudden and excessive joy; and madness was more commonly the effect of success in the South Sea year, than of disappointment. An early symptom is a loud and rapid elocution when speaking on common subjects, a feeling of peculiar high health, and boasting declarations of health and spirits. The sleep is very disturbed, and the watchfulness often unremitted. The subjects are as various as the fancy; each is suddenly indulged, and as quickly superseded by another. The persons most loved, before, are now detested, and strangers, or the most indifferent people, are sought after with anxiety. The eye appears wild and red, quickly glancing at every object; the face flushed, a tingling in the ears is perceived, and suspicion is alive in apprehension of intended injury; for there is always an enemy in the rear, which is often one of the nearest relations. It is not an uncommon fancy to suppose those around them mad, and their greatest amusement to contrive stratagems in order to secure and confine them. When any object is in view, disappointment does not distress them. The object still remains, and it is to be accomplished on another occasion. The prospect is always cheerful, and success constantly at hand. The pulse, in this case, is often natural, but frequently quick: the tongue is always dry, the skin without the softness of health, the urine generally high coloured.

Though we may declaim, "what a wonderful piece of work is man!" yet, when we view him in this state, where his boasted reason, instead of assisting, misleads him; when we see him exposed to elemental war, insensible of cold, of the comforts of cleanliness, of the dictates of religion, of even common decency; when we hear him uttering blasphemous execrations, employing the grossest and most obscene language, language abhorred in the lucid moments, when recollection often adds to the horrors of his situation, we may truly exclaim, "Alas, poor humanity!"

We have sketched only the outline of the picture, the discriminating features of the object. To fill it would require a volume; for, so various, so singular, and so numerous are the eccentricities, when judgment no longer guides, that it is impossible to detail them. In the general conduct of the human mind, when the balance of judgment or of authority is wanting, the wildest absurdities are equally the consequence; and, within the pale of reason, we observe conduct which almost realises the stoical maxim already alluded to.

Mania often remits, and at times recurs periodically. It has been found to return at the full and new moon, or, at least, to be exasperated at those seasons. Mania is, however, always considered as varied by lucid intervals, and in a certain degree is so; but this seems rather a salutary fiction of the law (see MEDICINA FORENSIS) than the result of medical observation. The violence of the maniacal patient, indeed, often remits, and is exasperated.

We know no peculiar constitution predisposed to mania except the melancholic. A tendency to the sanguine variety of this disease is shown by a flighty, irregular, and variable conduct, rising to exuberant spirits from the lowest depression, and again sinking,

from the former, into grief and despondency; to the melancholic, by a fixed attention to one object, from deep thought, never alternating with cheerfulness, and seldom varying its views. The idiotic frenzy appears from a generally variable, trifling, temper, with little reflection, and less judgment. This kind is, however, unfrequent; nor would we condemn every trifling male or female because they are such. Our receptacles must, in that case, be particularly numerous and roomy.

A very frequent corporeal remote cause is gout; either not brought out, repelled, or not properly supported. Repelled eruptions, or a check of any usual discharge, are by no means uncommon causes. Mania sometimes attends each succeeding pregnancy, and, in turn, the melancholia lactantium, as we have said, is cured by pregnancy. An asthmatic fit has, on its recession, been succeeded by madness; and a maniacal paroxysm has, in turn, yielded to a spasmodic asthma. The mind is intimately connected, as we have seen, with the genital system; and the denial of those enjoyments which nature claims, is a frequent cause, though an unsuspected one, of mania; in men chiefly of the melancholic, in women of the sanguine, kind.

Among the mental, remote, causes, or rather the causes originating from mind, we may mention disappointment, grief, hope long delayed, or destroyed by unexpected reverses, wild extravagant joy from unexpected prosperity. These produce the corporeal changes, which often induce madness.

Mania is undoubtedly constitutional, and propagated from parents to children, sometimes leaving one whole generation unaffected, and appearing again in the next. It is apparently propagated with the form, the features, and complexion, like scrofula; nor is this the only argument in favour of its being a truly corporeal, organic affection.

The most striking and constant corporeal change in mania, is fulness of the vessels of the brain; and, though this is less apparent in the wandering, idiotic mania, it very frequently exists. In that wandering, which arises from weakness and inanition, no such fulness occurs; but this cannot be called mania, and in those temporary derangements of intellect, which arise from deleterious substances taken into the stomach, it is equally absent. These, also, our definition excludes. Yet, when even these are separated from our view, it would be rash to assert that a distension of the vessels of the brain is constantly found in mania.

Dissection certainly discovers such distensions in a great variety of instances; but we are informed also, that sometimes a preternatural dryness and hardness of the medullary part, sometimes an undue softness, is found in the contents of the cranium. More frequently tumours, sometimes abscesses at the base of the cerebrum, sometimes exostoses from the cranium, are discovered, though the last are more commonly the cause of convulsive paroxysms. The leading symptoms of mania are inconsistency and a disturbance of the usual associations, and these necessarily arise from a want of communication between its different parts, or an irregular distribution of the nervous power. The want of communication may arise from mechanical obstruction, from a destruction of the organisation of some part of the brain, perhaps from a change in the qualities of what we have styled the nervous fluid. The irregular distribution may be owing to increased excitement of one portion of the medullary substance, or to the diminished power of another. Dissections countenance all these opinions; but unfortunately we have few cases in which the symptoms are connected with the appearances on dissection, so as to explain the influence of the organic changes in different circumstances. In general, we know that the medullary substance, in cases of idiotic insanity, is usually soft and watery; in melancholic cases, hard and dry; while in the wild, furious mania some active irritating power is generally discoverable. Abscesses at the basis of the brain are usually attended with a low muttering delirium.

The form of the cranium has been supposed a cause of mania, and it has engaged much of the attention of Pinel. He finds, however, no very striking connection between its form and maniacal affections, except in idiots, where the upper part of the head is shortened, the sides flattened, and the whole cranium elongated. In general, the most distinguishing marks of the skulls of maniacs are a flatness of the temporal bones, and a retracted occiput. A thickness of the skull is sometimes found on the dissection of maniacs; but this is by no means a peculiar or a constant attendant. Pinel seems not to have observed the softness or dryness of the medullary portion of the brain, mentioned by other authors. In his dissections, the fulness of the vessels appears to have chiefly attracted his notice.

The prognostic in this disease is usually unfavourable, except when it arises from repelled eruptions, imperfect gout, or the stoppage of the discharge of a fistula in ano. When it arises from a constitutional organisation, or without any distinct cause, it is seldom cured. The idiotic mania is more frequently intractable than the violent, and the disease from religious impressions very rarely yields to any plan of relief. When from violent and continued grief, from disappointment, particularly disappointed love, the disease is particularly obstinate. If sleep does not relieve; if emetics and purgatives fail of their effect; if convulsions come on, or considerable debility is observed; the complaint will be obstinate, or death soon ensue.

The diagnosis is not difficult. The absence of fever clearly distinguishes mania from any disease with which it can be confounded.

The cure of mania is simple, or at least art, often disappointed, has ceased to interfere with activity. The wandering delirium from inanition, the singular fancies from swallowing deleterious substances, vanish with increasing strength, the evacuation of the cause, or its continued impression which soon becomes habitual. The varieties of mania which we have mentioned may appear each to require a different plan; but the conduct of receptacles for lunatics is often empyrical, and, even when under the direction of a physician, seldom conducted with scientific views. We may not improve, but shall endeavour to connect, the scattered limbs found in different authors.

In each variety of mania we always find a considerable determination to the brain; and, even when the disease arises from some organic affection, which seems to interrupt the free communication between its different parts, this interruption appears to act as a local obstacle, which excites the action of the vessels around. On this view whatever is rational in the con-

duct of the cure seems to depend; and the remedies we shall mention in the order of their importance.

Emetics have been generally and principally employed, and the source of their advantages are sufficiently explained in that article. Without any other assistance, they have often removed a maniacal paroxysm; and, when repeated at regular and not very distant intervals, they are often highly useful.

In general, common emetics from the torpor of the stomach will not produce the evacuation, and antimonials are required. To these the vitriolated zinc, with mustard whey, must be often added; and the tobacco, the juice of the asarabacca, or groundsel, are often required. The objection made to emetics by those who have never used them, that they determine too powerfully to the head, we have already considered. See EMETICA.

Cathartics are, however, chiefly depended on, for reasons which will be sufficiently obvious, and these are particularly useful in melancholic mania. In the sanguine variety the saline are preferable, but they are scarcely sufficiently active in the melancholic; and when the disease arises from the want of the necessary evacuations from the lower belly, those purgatives which chiefly excite the action of the colon and rectum are most useful. The ancients used hellebore, but they diminished its activity by their mode of preparing it; and we do not find that it possessed peculiar powers, though if the plant they used be, as we have reason to suspect, a species of adonis, it probably combined the qualities of an anodyne with those of a cathartic.

What has been remarked respecting the large proportion of the vital fluid contained in the extreme vessels will sufficiently explain the effects of DIAPHORETICS. Yet we find no striking instances of their utility; and the impatience of maniacs, which leads them to throw off their clothing, seems to counteract this discharge. In fact, however, the heat is above what has been styled the sweating point, and the diaphoresis is best secured by moderating its excess. The only remedy of this kind which seems to have been peculiarly useful is vinegar. It was given with camphor by Dr. Locher of Vienna, but was found equally or more effectual without the camphor. Mr. Pargeter has recommended a camphorated vinegar in this country, but we have not found it peculiarly beneficial. Warm bathing, which is a remedy of this kind, has been highly commended, and is certainly useful when the heat is moderate, not exceeding 96 or 98. We have not mentioned BLEEDING, because it is not peculiarly advantageous; but when the mania rises to violent delirium it is necessary, and the blood must be drawn with a decisive boldness, so as to excite deliquium. Bleeding from the jugular veins, and topical bleeding with leeches, or the cupping-glass, if the quantity drawn is considerable, will be highly useful; but this, too, is confined to the violent state, when the mania becomes phrenitic.

Blisters, with similar views, have been applied; but they are not favourite remedies. Is it that their discharge is more adapted to relieve active inflammation, and less suited to the chronic fulness; or that danger is supposed to arise from their irritation, which has led practitioners to doubt of their utility? We believe, indeed, that they are not particularly useful, and that the deeper, purulent discharge from a seton is more advantageous. A blister to be really beneficial must be applied to the vertex.

Dr. Mead speaks of the utility of *diuretics*, but we know not that modern experience supports their credit, for we have not had sufficient confidence in this class of remedies to employ them. The diuretic preferred was the alkaline salts, and the opinion of obstruction, from lentor, was then so common, that we can easily guess the source of the recommendation, and of the good effects attributed to it.

Sedatives are most obviously indicated, and the whole tribe has been employed with varied success. Each medicine has had its sanguine advocates, and each has, at different times, succeeded. The refrigerants are chiefly trusted, and the neutral salts, combining this power with their purgative effects, are very commonly administered. Nitre is less often employed; but cold, in all its forms, is found peculiarly salutary. The clay cap has yielded to cold affusion of water, or fomentations of the coldest water and vinegar; and mad-men have been kept under water by violence till nearly suffocated. The maniac, who has escaped from confinement, and remained exposed to the greatest cold, has returned in his senses; and those who have been with difficulty saved from drowning have escaped from the danger and the disease.

The sedative antispasmodics are the fœtids, musk, and camphor. The former are comparatively weak; musk is more powerful, but rarely genuine, and always expensive. Camphor is more active than either, and we have found it, in large doses, a valuable medicine. Less than a scruple at each dose would be, perhaps, useless; and few can bear more than half a dram. The warm bath seems to have been sometimes successful in this view.

The narcotics have been employed in all their variety, particularly by the German and English physicians. Storck used the stramonium; Colin the cicuta and aconite. The ancient hellebore, we have said, was probably a species of adonis; Willis gave the extracts of cicuta and henbane; Fothergill, of Bath, the henbane only. Lately, the digitalis has been given, in this country, to a considerable extent. These narcotics have been often useful, and have as often failed, for the disease is generally incurable. Perhaps the digitalis promises most favourably, and the hyoscyamus and stramonium appear to be the next in rank.

These medicines often act as hypnotics; but the chief of this class, opium, has been commended, and rejected rather from theoretical prejudices than observation. Where opium usually agrees, it is a medicine of considerable importance in mania; but it should not be given till the stomach and bowels have been freely emptied, till the vessels of the head have been, in some measure, depleted by active topical bleeding, by blisters, or a seton. In these circumstances, with a large dose of camphor, it is often highly useful, though like other medicines, in an intractable disease, it must occasionally fail. Borax, in a large dose, was used by Dr. Monro to procure sleep.

We have observed, that there are cases where the interruption of the balance between the different parts of the brain are owing to diminished activity of one portion of this organ. But these, we have said, are few and indistinct. Cases of this kind are chiefly the

transient wanderings after being awakened from sleep, or the want of recollection after long fevers, or other causes of weakness. Should mania occur, in such situations, a nutritive diet, tonics, with perfect tranquillity, are the best remedies.

The mental regimen, or, as Pinel calls it, the moral treatment, is confessedly of the greatest importance; and the medical exertions in the most celebrated receptacles are generally slight, but strictly supported. Tales have been told, that the patients in some of these houses are not suffered to sleep; that the severities have been unusually cruel; that, in the language of Julian, the *populous* hair has been recruited, designedly, with new colonies; and that derivation to the skin has been kept by the infection of a cuticular disease. Of the truth of these stories we cannot judge; but it is, we believe, a fact, that when the mind is restored it is often at the expence of the constitution; for patients have come to us, from some asyla, with their general health and strength completely broken. It is not for us to say that the regimen and severities were unessary, or even to hint that the mind is recovered at too great an expence, by the diminution of the vital power. Yet, when the maniacal fancies are harmless; when the disease seldom rises to violence, and the patient is usually manageable, if relief by common treatment is improbable, we cannot say that such severities are advisable. The violent and continued excitement is, however, alone sufficient to account for the subsequent debility.

As we have declared that we are not of the initiated, we might decline all farther remarks on the mental regimen; but we must add what the experience of others, aided by our own, has taught us, that the maniac is always a coward. With the strength of twenty men he will crouch to an infant, if that infant assumes a haughty and firm tone. A look of confidence will soon have the same effect; and the dread of severities which he has felt, or has reason to expect, will render that look irresistible. With this cowardice, the maniac is cunning, and it is necessary to guard with the utmost care against his artifices; but the great advantage is derived from the prompt and ready obedience which the look insures. This checks every idle fancy, and stands in the place of the reason and judgment which were once his own. The mind, in this way regulated, assumes spontaneously its usual trains, and by steadily persevering in this tract, reason often returns. Thus, in the case alluded to in common life, when the conduct is no longer regulated by judgment or authority, the wildest eccentricities are the consequence. Should a justus et propositi tenax interfere, the whole order is restored with its wonted regularity. If severities should be required, they must be truly such, to prevent the necessity of their repetition; and the proper waistcoat, made with sleeves to fasten by running strings beyond the fingers, and by these to confine the arms across the body, is often necessary to prevent the maniac from injuring himself or others.

The moral treatment, according to Pinel, is of the greatest importance. It seems to consist in yielding to the more harmless fancies, and firmly correcting the more dangerous ones; at the same time endeavouring to bring back the usual and healthy train of ideas. What numerous cases of insanity has the French revolution produced!

This command insures also the punctual obedience in taking the few remedies prescribed. These are, we apprehend, chiefly laxatives of the saline kind, nitre, camphor, and opium, with drains from the head by means of a perpetual blister or a seton, remedies chiefly, if not exclusively, useful in lessening the impetus of the fluids to the head, certainly the principal object in the treatment of the disease.

The diet should be regulated with the same view, and should be mild, light, and not highly nourishing. The drink chiefly water. Exercise, when the case will admit of the mind being amused, is highly proper; and cheerful company, who possess steadiness sufficient to repress the ruling fancies, and discretion to lead to proper subjects, without continuing the conversation so as fatigue, is often highly salutary. Music too, which steals the mind from its favourite train of thought, and leads on the attention by its peculiarly fascinating powers, to those who are fond of it, contributes greatly to the relief.

See Aretæus, Alex. Trallian, Celsus, Sennertus, Hoffman, Sydenham, Boerhaave, Beattie, and Arnold on Madness; Muzzel on Melancholy; Cullen's First Lines, vol. iv. p. 144; Pinel on Insanity.

MANIGUE'TTA. See PARADISI GRANA.

MA'NIHOT. See CASSADA.

MANI'BA. See CASSADA.

MANIO'DES, (from *mania, madness.*) MANIACAL. See FERINA.

MA'NIPEY. See JACARANDA ALBA.

MANIPU'ERA. See CASSADA.

MANI'PULUS, (*quòd manum impleat*). A HANDFUL, *desme, dragma, fasciculus*; as much as can be contained at once in the hand.

MANJAPU'MERAM is a large tree, common in the West Indies; *nyctanthes arbor tristis* Lin. Sp. Pl. 8; its flowers are distilled, and the water is used in inflammations of the eyes. See Raii Historia.

MANJE'LLA KU'A. See CURCUMA.

MA'NNA, (from the Syriac term *mana, a gift*; as it is supposed to be the food bestowed by God on the children of Israel). *Manna Calabrina, ros Calabrinus, aeromeli, alusar, drosomeli*; and when of a rosy colour, *nuba.*

The miraculous food bestowed on the children of Israel is said to have been more probably sugar than manna, as it exuded on the reeds and grass; but it fell also on the stones, and was mouldy and fetid if kept beyond the day, except *that* day was the sabbath. It could therefore be neither, but a miraculous substance, of which we can form no idea.

The officinal manna has been supposed to be an exudation from the *fraxinus ornus* Lin. Sp. Pl. 1510; but on this subject authors speak with indecision and doubt. In fact it is produced from the fraxinus with the rounded leaf: the leaf of the f. ornus is smaller and pointed. Later naturalists have called these species the f. rotundifolia; and a full description of the tree is given in the Memoirs of the Society of Agriculture at Paris (an. 1788 trimestre d'Hyver) by Gaspard Carramone, who has examined it on the spot. We shall only transcribe from this memoir the distinction between the true species and the common ash.

The common ash is found in flat marshy places, particularly near the sea: the ornus, by which he means

the round-leaved ash, on the clifts of mountains. The surface of the bark of the former has not the white spots so conspicuous on that of the latter. The leaves of both are decompounded, but the last foliole of the common ash is always larger than the lateral folioles, which is not the case with the true manna tree. In the latter the leaf is unbroken and oval; in the former dentelated, and a long ellipsis.

The Calabrians distinguish different sorts of manna; the manna di spontana, which exudes spontaneously; m. forzatella, that which is procured by incision; m. di fronde, which exudes from the leaf; m. di corpo, which proceeds from the body of the tree. Manna flows spontaneously from the 20th of June to the end of July, from twelve at noon to the evening, in the form of a clear fluid. It is collected on the following morning if the night is fair, for otherwise it is washed off by the rain. This, when hard, is the picked manna, or the sorted manna of the shops. About the end of July, when the spontaneous exudation has ceased, incisions are made in the body of the tree, when more copious exudations take place, which fall to the ground like masses of wax. This, when dry, becomes reddish or brown, and is full of impurities.

What is collected from the leaves is styled grain manna, in little masses, about the size of a millet seed, and is found in the months of July and August. The Calabrians sometimes introduce a straw into the incisions, and the manna flows through and around it like stalactites, sometimes in very large pieces. This is very white and pure, called manna in tears. Many other species of the ash afford manna, and it has lately been found in asparagus, by M. Robiquet, Annales d'Chimie, vol. 55.

Manna resembles sugar in taste, but greatly differs from it in many other respects. Its sweetness is in a very small degree owing to its truly saccharine particles; for it admits only of a partial fermentation, and the product, though slightly vinous, never resembles alcohol (Dupuytren & Thenard, Annales de Chimie, Juillet, 1806). Ardent spirit dissolves a large portion of manna, which is almost wholly deposited in cooling, so as to fill the vessel with the precipitate, and with nitric acid, a large proportion of mucous acid is produced. It is chiefly, therefore, a mucous substance; and these experiments explain why, even in large doses, it does not produce heartburn, or prove in any degree inconvenient during pregnancy.

The finer manna of commerce is in oblong, roundish, single pieces; or in stalks, moderately dry, friable, of a whitish or pale yellowish colour, light, and somewhat transparent; internally it is seemingly composed of fine capillary crystals. The inferior kinds are moist, unctuous, brown, mixed with small pieces of wood and other impurities, and in irregular lumps; the manna di corpo before described.

The whitest, driest, lightest, purest, the most crystalline, and that slightly pungent to the taste, is preferred. The manna in flakes is supposed to be the best, but the smaller pieces are as good, if white, or of a pale yellow colour, very light, of a sweet not unpleasing taste, and free from impurities. The fat honey-like manna hath either been exposed to moist air, or is damaged by sea-water, or a mixture of oily substances.

Manna is often adulterated by compositions of coarse sugar, starch, and some purgative medicine, as scammony; but the fraud is discovered by the taste, weight, compactness, want of transparency, and its chemical affinities.

This concreted juice liquefies in a moist air, dissolves readily in water, and, by the help of heat, in rectified spirit, leaving only the impurities. A great part of the saturated spirituous solution separates on cooling, concreting into a flaky mass, of a snowy whiteness, and a very grateful sweetness: the remaining fluid, when inspissated, is unctuous, dark-coloured, and disagreeable.

Manna is one of the mildest purgatives, and may be given with great safety to children and pregnant women, to the delicacy of whose frames and situation it is particularly adapted; it is an useful auxiliary to the purgative neutral salts, sheathes acrimony, is beneficial in coughs and disorders of the breast, particularly such as are attended with fever and inflammation, and in bilious complaints; but is apt to create flatulencies and colics, which are prevented by a warm carminative. It purges in doses of from ℥i to ℥ij. and this quality is increased by a small addition of cassia. When administered in bilious disorders, Geoffroy recommends quickening it with a small proportion of antimonium tartarizatum, to evacuate the bilious serum without nausea or colic. Sydenham recommends the addition of lemon juice to manna, as a remedy for the gravel, and adds, that the acid renders the manna a quicker purgative, diminishing at the same time the nausea which it sometimes excites, renders it easy on the stomach. In bilious complaints tamarinds are usefully joined with manna. In the gravel, the hooping cough, and when all possible irritation should be avoided, the manna may be given in milk. Modern practice does not very often employ this medicine alone, for the dose is so large as to cloy the stomach, and produce nausea. See Raii Historia; Tournefort's and Lewis's Mat. Med.; Newmann's Chemistry.

MA'NNA THU'RIS. See OLIBANUM.

MA'NNA TERE'NIABIN, and TRANGEBIN. See ALHAGI.

MANNI'FERA A'RBOR, (from *manna*, and *fero*, *to bear*). See MANNA.

MANSO'RIUS MU'SCULUS, (from *mando*, *to chew*). See MASSETER MUSCULUS.

MANTI'LE, (from *manus*). The name of a bandage.

MA'NUS, (from *manah*, *to prepare*, Chald.). The HAND is divided into the carpus, metacarpus, and fingers. The posterior part is convex, for greater firmness, and the internal part concave, for the convenience of grasping. The concave side is called the palm of the hand.

MA'NUS DE'I. A resolvent plaster described by Lemery: an appellation also of opium.

MANY'L-RARA. A tall tree, growing in the East Indies. Its fruit resembles an olive, and is eaten to promote appetite and digestion. The plant is not included in any system.

MAY. See MANGA.

MARA'NDA. A plant resembling the myrtle, not yet reduced to any genus, growing in the island of Ceylon: a decoction of the leaves is recommended in the venereal disease.

MARA'NTA GALA'NGA. See GALANGA.

MARASMO'DES. A hectic fever in its last stage.

MARA'SMUS, (from μαραινω, *to render lean*); an ATROPHY. (See ATROPHIA.) The species also of hectic fever common and fatal to old men.

MARATHRI'TES, (from μαραθρον, *fennel*). Se FŒNICULUM.

MARATHROPHY'LLUM, (from μαραθρον, and φυλλον, *a leaf*). See PEUCEDANUM.

MARA'THRUM, (from μαραινω, *to wither*; because its stalk and flower wither in the autumn). See FŒNICULUM.

MARCASI'TA. (German.) See PYRITES and BISMUTHUM.

MA'RCHED. See LITHARGYRUM.

MARCHI'ONIS PU'LVIS. MARQUIS'S POWDER, of the Leyden dispensatory, designed as an anti-epileptic, consisting of peony roots, misleto, elk's hoof, coral, ivory, &c.

MA'RCOR. A preternatural drowsiness.

MARCO'RES, (from *marceo*, *to become lean*); the first order of Dr. Cullen's class *cachexiæ*, which he defines, diseases attended with wasting of the whole body. It is similar to the Macies, and Emaciantes, of other authors.

MARGARI'TTÆ, (from *margarita*, *a pearl*); *pirlæ*, *uniones*, PEARLS, are small morbid excrescences, of a calculous kind, of a bright semi-transparent whiteness, formed on the inside of the shell of the *concha margaritifera*, or mother-of-pearl fish; of oysters, muscles, and other shell-fish. The finest pearls are brought from the East, inferior ones from the West Indies, and our own shores. The oriental have a more shining silver hue than the occidental, which are somewhat milky. Those not fit for ornament are called rag and seed pearls, and are employed in medicine.

True pearls in the fire become quick-lime, and readily dissolve in all acids, except the vitriolic. They resemble, therefore, oyster-shells, and have no virtue but what is common to these substances. See Lewis's Materia Medica; Neumann's Chemical Works.

MARGARI'TA, (a rabbinical term, *margalith*). See STAPHYLOMA and ALBUGO OCULORUM.

MARGINA'TUS, (from *margo*, *a margin*), BORDERED, applied to the seeds of plants which have a thin leafy border round them.

MARI'NUM, vel MARINUS SAL, (from *mare*, *the sea*). SEA-SALT; *esebon*; *communis*, *culinarius*, & *cibarius sal*; COMMON SALT.

The salt is not only extracted from the sea-water by evaporation, but is also found in extensive strata. (See GEMMA SAL.) It is composed of the marine acid, and the mineral alkali; dissolves in about thrice its weight of cold water, though, when heated, it scarcely requires less.

The solution of this salt, if gently evaporated, affords cubical crystals, which are the common or alimentary salt. A small quantity of the sal catharticum amarum is next produced; but the chief part of this salt remains in what is called the mother water, which is oily, and on that account will not admit of its farther crystalisation.

Common salt, when dried in the temperature of 80, contains 38.88 of acid, 53 of soda, and 8.12 of water: by others the acid is said to be 33.3, and the alkali 50. Its specific gravity is 2.120; it decrepitates in the fire, renders water colder than before, though, from the addition, it is more difficult to freeze. Common salt is the most generally useful condiment, and the best antiseptic to preserve meat from putrefaction, and butter from rancidity. It furnishes a firm and cheap glazing for earthen ware, and is of considerable use in the process of dyeing. The separation of soda from sea-salt is a problem of considerable importance in the arts; and it has been completely solved, if the removal of the duty on salt would render it practicable with advantage. This is not the place for disquisitions not connected with medicine; but we may remark, that iron, litharge and lime, in proper circumstances, will effect the decomposition. The lime in the soil of Egypt and Tripoli seems the means by which the soda has been separated in such considerable quantities. Acetite of lead will equally effect the separation of the alkali; but it is too dear for commercial purposes.

In the animal economy common salt is of general utility. (See CONDIMENTS.) It seems to check putrefaction; but is of more service as a general stimulant. Animals pine when deprived of it, and few nations have been found who have not added this condiment to their food. In the animal process the fixed alkali is seemingly changed to the volatile, and we have suspected that the muriatic acid is changed to the phosphoric. Chemistry has not yet elucidated this subject, and we offer it chiefly as a conjecture which we could support by inductive reasoning, were this the place for such disquisitions. Beyond its general stimulus we do not perceive any salutary action of sea-salt in the proportion usually taken. In large quantities it is used as an emetic, as a remedy for hemorrhage from the lungs, and in the form of sea-water as a laxative and a remedy for scrofula. (See HÆMOPTYSIS and AQUA MARINA.) Externally it is used in palsies, and in apparent death from drowning. In these cases, as in almost every other, it seems to act as a simple stimulus only.

The sea-water, gradually evaporated by the sun's heat, on the rocks, or in circuitous canals made for this purpose, is called bay-salt, and is formed into large crystals; it does not liquefy in a moist air, and is more powerfully antiseptic.

Spiritus salis marini Glauberi, or the muriatic acid, is made by gradually adding six pounds of vitriolic acid, mixed with five pounds of water to ten pounds of dry sea-salt: the acid is then separated by distillation. In this state the acid comes over in a gaseous form, and requires condensation by means of water. As a gas it is elastic and invisible, incapable of supporting animal life or flame, has a pungent smell, an acid taste, and a specific gravity nearly of .002315, about double that of common air. Water absorbs it copiously and freely; but it is unchanged by the strongest light and heat. Ice absorbs it also, but boiling water admits of no union with it. In the process just described, the acid of vitriol unites with the mineral alkali, leaving its acid free, which rises in distillation; and, in the usual form, that of a colourless or a pale yellow fluid: its specific gravity is 1.196, though the acid of commerce is seldom more than 1.17. The strongest liquid acid is supposed by Mr. Kirwan to contain about an equal part of water. The dryest gas contains a small portion of water, which is only separated by electrical explosions.

The specific gravity directed by the college is to that of distilled water, 1.170, to 1000.

The muriatic is the weakest of the mineral acids, but

stronger than any of the vegetable kind: it requires a greater fire to distil it than that of nitre, yet it is more readily dissipated by the action of the air. It has no effect on oxygen gas or inflammables. The muriatic acid oxidates metals, but requires for all, except iron, a greater or less degree of heat. It combines with all alkalis, earths, and the greater number of metallic oxides.

Its composition (see CHEMISTRY) is not yet ascertained. The latest experiments are those of M. Brugnatelli, in the sixty-second volume of the Journal de Physique, p. 298. He certainly found the muriatic acid produced, when the galvanic fluid was passed through water, by means of gold, platina, iron, or the black oxide of manganese; but some other metals, particularly silver, produced, in the water, soda. We can connect this only with one fact, that water, evaporating from iron, produces a positive electricity, and from silver a negative. In these experiments of De Saussure it is, however, clear that the water is decomposed rather than evaporated. In Brugnatelli's experiments the positive pole seemed to produce in the decomposition of the water the acid, and the negative the soda.

It is chiefly used as a tonic and antiseptic, in the dose of from ten to sixty drops, in water, or any other convenient liquid. In putrid fevers, after having cleansed the primæ viæ, it supports the strength, and corrects any remaining putrefaction in the contents of the stomach and bowels; but seems not to carry its antiseptic quality into the general mass, which indeed is seldom in a putrid state. It was Recht's boasted remedy for fevers, which the Prussian government bought at a considerable price. In bilious fevers it has been recommended; but it is not peculiarly useful, and, in general, its good effects are confined to the parts in immediate contact with it.

In acidulated gargles for ulcerated throats it has been strongly recommended, but seems to be in no respect superior to the vitriolic acid; and, diluted with the tincture of benzoe, has been applied, it is said, with success to putrid ulcers.

Linnæus remarks, that if properly diluted, and applied to chilblains, it radically cures them. If half an ounce of good bay-salt is dissolved in four ounces of water, and two drams of the muriatic acid be added, it will form a mixture, of which a tea-spoonful, in a glass of water, is said to improve the appetite, and frequently stop vomiting.

The muriatic acid, combined with volatile alkalis, produces the officinal sal ammoniac; with fixed vegetable alkali the sal digestivus Sylvii; in modern language, muriated potash. See CHEMISTRY.

The acidum muriaticum, combined with calcareous earths, forms a calcareous muriat, which deliquates in the air, and dissolves both in water and in rectified spirit of wine. It is contained in a considerable quantity in sea-water, but remains in the mother-water after the crystalisation of the muriated soda, and is said to be antiseptic, diuretic, and lithontriptic. The medicine, commonly sold under the name of *liquid shell*, appears to consist only of calcined shells dissolved in marine acid. These combinations are made by mixing the calcareous earth with sal ammoniac, and urging the mixture with a gradual fire, until the volatile alkali of the salt is either dissipated or collected by sublimation when the acid unites with the earth.

The *muriat of lime* has lately become a fashionable remedy in scrofula, in schirri, and other diseases supposed to arise from inspissated lymph. From half a dram to half an ounce, diluted with water, is given, according to circumstances, every day.

For the *murias ferri*, v. FERRUM; and for the *murias barytis*, v. BARYTES.

See Lewis's Materia Medica; Newmann's Chemical Works.

MARIPE'NDAM, is a plant in the island of St. Domingo. The distilled water from its tops is greatly esteemed in pains in the stomach. The plant has not been properly examined. See Raii Historia.

MARI'SCA, a FIG. An excrescence about the anus, like a fig. See CONDYLOMA and HÆMORRHOIDES.

MARI'SICUM. See MERCURIALIS FRUCTICOSA.

MARJORA'NA, (*majorana*). See ORIGANUM.

MARMARY'GÆ, (from μαρμαιρω, *resplendeo*), a variety of *pseudoblepsis imaginaria*. Sparks or coruscations which seem to flash before the eyes, from a fulness of the vessels of the brain.

MARMOLA'RIA, (spotted like *marble*). See ACANTHUS.

MA'RMOR, (from μαρμαιρω, *to shine*). MARBLE. A calcareous stone, chiefly used for the carbonic acid gas it contains, employed in preparing the acidulous mineral waters. See CALX.

MARMORA'TA AU'RIUM. See CERUMEN.

MARMO'REUS TA'RTARUS, (from its hardness). See CALCULUS.

MARMORA'CEA VENE'NA. Such poisonous substances as are fatal in doses not exceeding the bulk of a grain of wheat.

MAROCO'STINUM. The epithet of a cathartic extract originally made by Mindererus in which marum and costus are ingredients, designed for discharging serous humours, but now neglected. See Pharmacopeia Augustana. *Pillulæ marocostinæ* Lemery and Bates.

MARO'TTI. A tall tree in Malabar, with leaves like those of the bay-tree, and a fruit which contains an oily kernel. The oil expressed from the kernel is often medicinally used by the natives. (See Raii Historia.) It has been figured by Reed, in his plants of Malabar, vol. i. pl. 36, but has not been reduced to a place in any system.

MARRUBIA'STRUM. See BALLOTTE.

MARRU'BIUM, (from the Hebrew terms *mar rob*, *a bitter juice*). HOREHOUND; *mauromarson*; which rather means the black sort. It is also a name for the *cardiaca*, *leonurus cardiaca* Lin. Sp. Pl. 817, and some other plants.

MARRU'BIUM ALBUM; *prasium album*. COMMON WHITE HOREHOUND, *marrubium vulgare* Lin. Sp. Pl. 816, is a hoary plant, with square stalks, and roundish unwrinkled leaves, set in pairs on long pedicles, from the bosoms of which arise thick clusters of whitish labiated flowers, in striated cups, whose divisions terminate in sharp points or prickles. It is perennial, grows wild in cultivated grounds, and flowers in June.

The leaves have a slight aromatic, but not at first an agreeable, smell; their taste is bitter, penetrating, diffusive, and durable in the mouth: in large doses they

prove laxative. This plant is said to be an useful aperient and corroborant, in humoral asthmas, pulmonary consumptions, cachexies, menstrual suppressions, schirrous affections of the liver, jaundice, and several other chronic disorders. The ancients had an high opinion of its efficacy, particularly in pulmonic and visceral obstructions; and, amongst the common people, horehound-tea in coughs and asthmas is a commom remedy. Dr. Cullen disputes its virtues as a pectoral, as well as a deobstruent, and thinks the authorities of Forrestus, Zacutus, Lusitanus, and Chomel, very insufficient. A dram of the dried leaves in powder, two or three ounces of the expressed juice, or an infusion of half a handful of fresh leaves, are commonly directed as a dose. See BOICINENGA.

The dry herb gives out its virtues both to water and to spirit. The expressed juice, gently inspissated to an extract, is the best preparation: the dose is from gr. x. to ʒ ss.

MARRU'BIUM AQUA'TICUM, *lycopus Europæus* Lin. Sp. Pl. 30. WATER HOREHOUND, found on the sides of brooks, but inferior in virtue to the white.

MARRU'BIUM NI'GRUM FŒ'TIDUM. See BALLOTTE.

MARRU'BIUM VERTICILLA'TUM, *marrubium Hispanicum* Lin. Sp. Pl. 816; Galen's MAD-WORT; the BASE HOREHOUND. These species are usually neglected. See Lewis's Materia Medica; Neumann's Chemical Works.

MARRULLIUM. See LACTUCA.

MARS DIAPHORE'TICUS. See FERRUM.

MARS SACCHARA'TUS, and SOLU'BILIS. See FERRUM.

MA'RSAS. See BONDUCH INDORUM.

MARSUPIA'LIS, (from *marsupium*, because it is shaped like a purse). See OBTURATOR EXTERNUS and INTERNUS, and GEMINI.

MARTIA'NUM UN'GUENTUM. Martian's SOLDIER'S OINTMENT. ℞. Ol. laur. f. ℔iij. foliorum rutæ, recent. ℔ij. ss. majoranæ ℔ij. menthæ ℔i. salviæ. absynth. communis. balsamitæ maris et basici, āā ℔ss. olei olivæ, ℔xx. ceræ flavæ ℔iv. vini Malagens, ℔ij. m. f. unguentum. This was employed to preserve the limbs of soldiers from the injuries of cold in the camp.

MARTIA'NUM POMUM. See AURANTIA HISPAN.

MA'RTIS ESSE'NTIA, OLEUM PER DELIQUIUM, SAL, TINCTURA, and EXTRACTUM. See FERRUM.

MA'RUM. (from the Hebrew term *mar, bitter*), *sampsuchus, clinopodium mastichina Gallorum, thimbra Hispanica; Jaca Indica*, MASTICH THYME, or COMMON MARUM, *thymus mastichina* Lin. Sp. Pl. 827, is a low shrubby plant, with small oblong leaves, pointed at both ends, set in pairs without pedicles; at the tops of the branches stand woolly heads, containing small white labiated flowers, whose upper lip is erect and cloven, the lower divided into three segments: each flower is followed by four seeds, inclosed in the cup. It grows spontaneously on dry gravelly grounds in Spain, and in similar soils it bears the ordinary winters in England. Its virtues are similar to those of the Syrian marum, but less powerful.

MA'RUM SYRIACUM, vel CRETICUM, *majorana Syriaca vel Cretica, marum cortusi, chamædrys incana maritima*, MARUM GERMANDER, or SYRIAN HERB MASTICH, *teucrium marum* Lin. Sp. Pl. 788, is a low shrubby plant, with small oval leaves, pointed at each end, and set in pairs without pedicles, of a dilute green colour above, and hoary beneath; in their bosoms appear solitary purple labiated flowers, each of which are followed by four roundish seeds inclosed in the cup. It is said to be a native of Syria, and does not bear our winter's cold without shelter.

The leaves are bitter, pungent, and aromatic to the taste; their smell excites sneezing; and they agree with the canella alba in their virtues.

This plant loses but little in drying, gives out its active matter partially to water, but completely to spirit; the watery infusions retain the smell, but little of the taste; the tinctures retain more of the taste than the smell. Distilled with water, it yields an highly pungent, volatile essential oil, stronger than that of scurvy-grass, and of a less perishable pungency; the remaining decoction is bitterish. Rectified spirit carries off only a part of the smell and pungency of the marum. This plant is supposed to possess very active powers, and to be an important remedy in cachexy, hysteria, and nervous debility, acting as a warm tonic and a powerful emmenagogue. The dose is ʒ ss. of the powdered leaves given in wine. In the present practice it is chiefly used as a sternutatory, and is one of the ingredients of pulvis asari compositus of the London Pharmacopœia. See Raii Historia; Leiws's and Bergius' Materia Medica.

MA'RVISUM. See MALVASIA.

MASCHA'LE, (μασχαλη). See AXILLA.

MASCHALI'STER, (μασχαλιστηρ). See SPINA.

MA'SLACH. A form of opium used by the Turks.

MA'SPETA, and MA'SPETUM. See SILPHIUM.

MA'SSALIS, and MA'SSARIAM. See ARGENTUM VIVUM.

MA'SSÆ AD FORNA'CEM. See CANDELA FUMALIS.

MASSE'TER MU'SCULUS, (from μασσομαι, *to eat*). *Lateralis, manducator mansorius.* The MASSETER MUSCLE rises on each side, from the cheek-bone and the interior part of the zygomatic process of the os temporis; and is inserted into the whole length of the lower jaw, particularly the angle.

MA'SSOY, a species of bark mentioned by Ray, from a tree hitherto undescribed. It is gratefully fragrant and heating.

MASTICA'TIO, (from *mastico, to chew*); *manducatio*; *commanducatio.* Mastication comminutes the parts of our food, and intimately combines it with the saliva and mucus of the mouth. Due mastication is essentially necessary to digestion; but it is doubtful whether any portion of our food is absorbed during this process; for every thing which has not passed through the operation of digestion seems to be injurious when mixed with the circulating fluids. V. DIGESTIO.

MASTICATO'RIUM, (from *mastico, to chew*). A MASTICATORY. See APOPHLEGMATICA.

MA'STICHE, (from μασσω, *to express*). MASTICH. See LENTISCUS.

MA'STICHEN. ODORA'TUM FU'NDENS. See NUX VIRGINIANA.

MASTICHI'NA GALLO'RUM, (a dim. of *mastiche*). See MARUM.

MASTOIDÆUM FORA'MEN. See STYLLOMASTOIDÆUM FORAMEN.

MASTOIDÆUS MUSCULUS, (from μαστος, *a nipple*, and ειδος, *forma, the mastoid process, resembling a nipple*); *sterno-mastoides, sterno-mastoidæus* of Dr. Hunter, who observes that it rises by two distinct portions from the sternum, with that part of the clavicle articulated to the sternum, and is inserted into the mastoid process. This last portion Albinus considers as a distinct muscle, and calls it *cleino-mastoidæus*, but it is not divisible from the other without art. Winslow calls this muscle *mastoidæus anterior*, or *sterno mastoidæus;* and the splenius the *mastoidæus superior.*

MASTOIDÆ'US LATERA'LIS. See COMPLEXUS MINOR.

MASTOIDÆ'US PROCE'SSUS. See TEMPORUM OSSA.

MASTOIDY'NIA, (from μαστος, *a nipple*, and οδυνη, *pain*). SORE or PAINED NIPPLES. But more commonly pain in the breast from inflammation. See INFLAMMATIO MAMMARUM MULIERUM.

MASTURBATIO; *manustrapatio, Onanismus*, the sin of Onan, from a perverted passage in the Pentateuch. The discharge of semen from a preternatural stimulus; the vice, it is said, of the solitary monk, and, perhaps, of other recluses, to whom more natural enjoyments are denied. It is a habit of the most destructive tendency, enervating, in the highest degree, both the body and mind. Nature seems to have fixed a strong mark on those disposed to every unnatural enjoyment, and however secret their practices may be, so indelible is this mark, that they cannot escape detection from that *tact* which has been peculiarly distinguished by the term of *sensus medicus*. In general, the countenance is sallow, with a peculiar dejection in the look. The voice is hurried and unsteady; the face often covered with dark coloured pustules, hard in the skin, and the whole frame displaying peculiar debility. The dejection, at times, almost amounts to insanity, and every complaint appears to threaten instant death. The tremor and apprehension prevent the natural enjoyments, by which they might be otherwise weaned from this destructive habit; and the whole life is alternated with doubts, apprehensions, and despair. Unfortunately, the practice is never forsaken, at least, notwithstanding every assurance, we have reason to think so.

The apprehensions of discovery and the despair render those unfortunate persons the dupes of quacks, and it may be remarked, that every quack bill holds out delusive hopes to those who experience the bad effects of such indulgences. Regular practice exhausts the whole tribe of tonics and stimulants with little effect. The warm balsams, of which the quack medicines consist, are either rejected from the hands of the physician, or not continued a sufficient time; and even cold bathing, the best remedy, does not fix the imagination so strongly as the solar tincture, or the balm of Gilead. If not too long continued, a prudent marriage may recover the patient; but it would be unjust, cruel, and impolitic, to condemn a healthy young woman to the shadow of a man. This remedy, however, we have often found effectual in cases where the constitution was not wholly exhausted.

Tissot on Onanism, and the Appendix to his Dissertation on Bilious Diseases; Gruner and Husche Dissertationes de Masturbatione.

MATALI'STA, MATBALI'STIC. See JALAPA.

MA'TER, (from μαω, *to desire*). See DURA MATER.

MA'TER PERLA'RUM, *concha margaritifera, concha mater unionum, concha valvis æqualibus, nacre.* MOTHER OF PEARL. This is the pure pearl-like part of the shell in which pearls are found, possessing the antacid properties of the pearls themselves. See MARGARITÆ.

MATERIA, (from *mater, a mother*). MATTER; SUBSTANCE. In strictly logical disquisitions, *material* is in opposition to *modal*, the one signifying as a cause, a substance, the other a peculiar state; thus a sword inflicting a wound is a material cause of pain, spasm only modal. To come nearer, a calculus in the gall-duct is a material cause, the same effect from violent passion modal only. This is nearly the meaning of Dr. Cullen, when he distinguishes sensation of impression from sensations of consciousness; but this distinction is seldom attended to in the undiscriminating, flowery, pages which by courtesy are now styled medical. If we were to refer to works where strict logical discrimination is pursued with rigour, they would be those published during the presidency of Stahl at the university of Halle. The minute precision of the author's reasoning (Stahl himself) is highly gratifying, while the obscurity of the language and manner would repel every modern reader.

MATERIA MEDICA. The last article suggests to us a logical inaccuracy in the title, which strictly implies *material* substances employed in the cure of diseases. We must, however, extend these views, and, with the spirit of the best authors, follow their example, by considering, under this title, every means of relieving the maladies to which human nature is subject. The field which this inquiry opens to our view is immense. It not only includes a consideration of the properties and use of each of these means, but the mode of investigating these properties, of arranging our copious list of remedies, so as to assist not only our explanations of their virtues, but the choice of our remedies in any given emergency, and to point out the distinctions which, from different circumstances, may guide us in our preference of one to another. Not the least important object in this disquisition is the conduct and merits of the different authors in this department of medicine.

The knowledge of medicines must have been coeval with the existence of the human race. Mankind was always subject to diseases and accidents, and would naturally seek for remedies. There is consequently no race, however uncultivated, but has its materia medica, and modes of cure, often rash, violent, and injudicious, but sometimes discriminated with precision, and adapted with skill. It were to be wished that botanical inquirers had more often, in their itineraries, preserved these rude modes of treatment as Linnæus has done in his Flora Laponica. The scattered limbs, however, exist, and will repay the trouble of collecting.

The Greeks, who made every thing their own, and often created a fabulous personage, to whom they gave the honour of a discovery, for which they were indebted to their neighbours on the continent of Asia, attributed the achillea to Achilles, the teucrium to Teucer, and the artemisia to Artemis. Their famous Æsculapius was probably only an Egyptian title (haskelab), the father of wisdom. The materia medica of Hippocrates (for it would be to fill our pages very uselessly to copy all the fables recorded on this subject) was very

simple; but even the few remedies which he employed were in part rejected by Erasistratus. The empyricism and credulity of Serapion and his followers introduced numerous disgusting and ridiculous remedies; many of which were continued in the foreign pharmacopœias in the last century, and Vogel even condescends to notice several of them. Themison, the supposed founder of the methodic sect, gibeted in the satires of Juvenal as a most unsuccessful practitioner, recommended medicines of activity, as the aloes, the scammony, &c. He first employed leeches, and preferred these and cupping glasses to general bleeding. He seems to have rejected with indignation the ridiculous remedies of the empyrics; but, if we may trust his copyist Cœlius Aurelianus, employed some which were scarcely less absurd. The rage for compound medicines seems to have begun with Themison, but it increased with his followers, particularly Andromachus and others, down to the era of Galen, to whom the materia medica is greatly indebted for his attentive inquiries into the nature and country of the different medicines, though the real knowledge of their effects was obscured by the numerous ingredients of each formula. The authority of Galen and the use of compound medicines continued, we know, for many centuries; and we have not long escaped from the trammels of his authority.

While, however, the infallibility of Galen remained unquestioned, the Arabians greatly enriched the materia medica by those medicines which their climate, or their connection with India, had introduced to their notice. The purgatives of their predecessors were the mild herbaceous vegetables, or the more acrid drastics; but the Arabians introduced the manna, sena, and myrobolans. They varied also the formulæ, and rendered them more agreeable by the addition of syrups; and they were undoubtedly acquainted with distillation, though they seem to have only employed this process in the preparation of simple waters and distilled oils. They added also musk, mace, cloves, &c. which are still retained; the precious stones, leaf gold, and silver, which are now neglected. They injured this branch of medicine by their fondness for compounds, in which they exceeded the Greeks; and, by their hieroglyphics, their metaphorical language, their comparison of the stars with diseases, and the metals with remedies, are supposed to have occasioned those wild extravagancies which for ages led philosophers in pursuit of the art of making gold, and physicians in that of compounding an universal medicine.

Whether this latter conjecture of Boerhaave is well founded or not, the chemical physicians soon succeeded, and the language of Bacon, the earliest of these in the thirteenth century, seems to prove that the torch was lighted from the Arabian flame. Bacon endeavoured only to ward off old age; with Raymond Lully, in the following century, the pursuit of the universal medicine commenced. This pursuit was continued, and the materia medica greatly augmented, by acquisitions from chemical preparations by the Isaacs, Basil Valentine, and many others, down to Paracelsus and Van Helmont, the last of whom lived in the beginning of the 17th century. The absurdities of this sect are inconceivable; but they were succeeded by philosophers and physicians, who pursued the same path with more rational views and better success. Sylvius de le Boe, Tachenius, Quercetanus, Glaser, Schroeder, Lemery, Glauber, and others of the chemical school, the great benefactors of the materia medica, have in succession greatly enriched this science with the chemical remedies which we still employ. During this period the appearance of the lues venerea also added to the materia medica the sarsa, the guaiacum, the china, and some other medicines.

The discovery of Harvey, in the beginning of the seventeenth century, gradually turned the attention of practitioners from the active remedies of the chemists to those which were supposed to act mechanically; and mechanical reasoning soon overturned the whole system of medicine, and changed the language which had been hitherto held respecting the operation of remedies. The good sense of Boerhaave led him to retain the remedies of the chemists while he employed and extended the language of the mechanical physicians, while he studied and enforced the medical observations of Hippocrates and his successors.

With the downfall of the humoral pathology the materia medica experienced little improvement. Dr. Cullen, who, like Boerhaave, was a chemist before he had completed his medical system, still retained a predilection for chemical remedies, and for the more active forms. He introduced, it is said by Dr. Fordyce, the emetic tartar; and he supported, by his recommendation, the corrosive sublimate, not only in lues, but in diseases of the skin; a remedy employed externally for this latter complaint by the Arabians. We mention chiefly these circumstances to speak of a new sect, the introducers of medicines formerly accounted poisonous. Van Swieten, by his adopting the use of the corrosive sublimate from the Russians, seems to have first excited the attention of the physicians of Vienna to the vegetable poisons, the hemlock, the aconite, the belladonna, the napellus, the phytolacca, lactuca virosa, &c.; an impulse followed by the introduction or revival of the digitalis, the arsenic, &c. It is not our present object to appreciate the value of this new step; for it belongs to the separate articles. In general, however, we may add, that the real merits of the greater number have by no means answered the expectations excited. Our materia medica, as established by the decision of the colleges of London and Edinburgh, is, at present, confined in the number of its articles; but these are well chosen, active, and effectual. Each practitioner will probably add, from his own predilections, some others; but others, we suspect, will not be found necessary.

The ACTION OF MEDICINES depends on a relation between their properties and the living solid, differing in different parts of the system. This relation is, in general, obscure. It is, however, sometimes, and perhaps more frequently than has been supposed, chemical; sometimes purely physical; scarcely in any instance mechanical. It is occasionally connected with the more obvious properties, as the smell and taste of the medicine, but confined in this respect to the vegetable, less strictly to the animal, kingdom. It is sometimes connected with the chemical analysis, or with the natural affinities of a plant. Each mode has been employed in investigating the powers of medicines, and to each we must direct our attention; not perhaps as of pe-

culiar importance, for few medicines have been discovered in this way, but to explain the language and the conduct of authors, and sometimes to correct them.

The olfactory organs are peculiarly acute in the brute creation, but of no great importance to us in our investigation of the properties of medicines. The utility of the SMELL is limited chiefly to vegetables: but few animal substances discover their powers by these organs, and the insects and the vermes are either without smell, or give faint indications of their qualities in this way. In general, pleasing smells are salutary, and nauseous or fœtid ones injurious. Pleasing and nauseous are, however, relative terms; and to our neighbours on the continent the fumet of tainted venison is highly gratifying. Authors who have investigated the powers of medicine by the smell are, Linnæus and Lorry, each of whom we must notice, as they have considered the subject in very different views; while former authors, as Boyle, considered effluvia chiefly as philosophers, and contemplated only the surprising divisibility of matter; or, as Boerhaave, Venel, and Roux, treated of odour as chemists, and endeavoured to separate or combine it in a more durable form.

Linnæus divides the ODOURS of medicines (Amœnitates Academicæ, iii. 183.) into AROMATIC, FRAGRANT, AMBROSIACAL, ALLIACEOUS, HIRCINE, STINKING, and SICKLY. The three first are pleasant, the three last disagreeable, smells. This enumeration is not perhaps correct, nor the classes distinct; but the Linnæan language is employed by many respectable physicians of his school, and consequently merits our attention.

The *aromatic* smell is distinguishable in various families of plants, as the laurels, the umbelliferæ, and the labiatæ, and is found in every portion of a vegetable, often in every part of the same plant. The iris, the rosemary, and the sage; lavender, *flowers* and pinks; canella and winter's *bark*; sassafras *wood*; laurel *berries*; cummin and carui *seeds*; *gum* benjamin and balsam of capivi, are striking instances of it. They are generally stimulating, not without a suspicion of a narcotic power; often induce the calm serenity which we feel from tea, and destroy irritability rather than give strength. The exhalations themselves, from the experiments of Ingenhouz, are chiefly azotic, and, in many constitutions, highly deleterious.

The *fragrant* smell is not very clearly defined. It contains some of the more pungent smells, and seems to be a connecting link between the aromatic and the ambrosiacal. The instances are the flowers of the lily, the jessamin, the tuberose, some species of pinks, and saffron. They are more actively analeptic than the fragrant odours, and more certainly antispasmodic.

The *ambrosiacal* smells are very penetrating and active, when concentrated, as in ambergrease and musk, but generally disagreeable. When greatly diffused they are more agreeable. The species of geranium, mallows, rose, and garlic, styled *moschatæ*, are of this kind; the fruits of the pine-apple, of some kinds of apples and pears, musk, civet, and burnt animal substances, are instances of this species of odour. They appear to be stimulant, but are strictly sedative, and powerfully antispasmodic.

The *alliaceous* smell is particularly distinguishable in garlic, and its congeneres, in the scordium, asafœtida, and what are styled the warm fetid gums. These odours belong to very active stimulants, which powerfully excite the vessels of the skin, and increase the discharge not only from these but from every gland in the human body.

The *hircine* smell is that which resembles the odour of the goat; and, in the vegetable kingdom, we find it in the herb robert, the orchis, some mushrooms, particularly the phallus impudicus. In general, these fetids are sedative, and often deleterious.

Stinking smells are exemplified in opium, nightshade, and hemp, which are all narcotics; and the *sickly* in hellebore, tobacco, colocynth, putrid meat, sena, and rhubarb. All such substances are powerfully emetic, and, if they escape the stomach, are also cathartic; and all are narcotic.

M. Lorry has proceeded in a different way, and has considered the smells, which are essential to the medicine, and which continue, independent of very minute analysis. These are the CAMPHORATED, NARCOTIC, ETHERIAL, VOLATILE ACID, and ALKALINE.

The *camphorated* is found in the labiated, the composite, the terebinthinated, and the aromatic plants, as well as in the laurels and myrtles. Its characteristics are, extreme penetrability, a singular volatility, a strong attraction for oily and spirituous menstrua. Though easily dissipated in the air, yet, when united with resins, in the leaves of plants it is preserved from evaporation, and contributes to their preservation. This principle resists the activity of fire, and the most powerful agents. Even musk and opium will not disguise it: its medical power we have already detailed. See CAMPHOR.

The *narcotic* odour is that virose effluvium which destroys the principle of life. It exists in the poppies, the nightshades, the borrage, the cucurbitaceous and umbelliferous plants, with many others; often disguised by the distinguishing principles of the vegetable, and obvious when these are separated by putrefaction or fire. This is the most fixed and adhesive of all smells. It corrects the volatility of the others, and often disguises all, except the camphorated. Even in a small proportion it is discoverable among the most fragrant smells, as in the rose, the jessamin, the tuberose, and the violet. These flowers exhale the true narcotic odour, when their aromatic and camphorated smells are dissipated. This smell is simple, sometimes concealed under that of aniseseed or garlic, occasionally imitating the smell of radishes, or the offensive odour of bugs. The same odour is found in animal substances. Virgil speaks of the virosa castorea, and animal oils, though rectified by distillation, exhale this narcotic smell.

The *ethereal* odour is volatile, incoercible, and of extreme tenuity. It escapes so easily that we can only recognise it for a short time. Art produces its most striking example; but we find it in the pine-apple, in melons, some kinds of pears and apples, in strawberries, and the greater number of fruits which grow under the burning sun of the torrid zone. It is sometimes discovered on the first appearance of the septic process, to which sweet fruits are exposed. This odour combines with the alkaline, and the narcotic smell of opium giving it a striking volatility, and moderating its narcotic property. It unites also with camphor, and adds to its sedative and

soothing powers in a manner well known to practical physicians.

The *volatile acid* odour is usually combined with an aromatic volatile spirit. It is distinguished in lemons, oranges, gooseberries, cherries, &c. combined and disguised in many plants, as in the lemon thyme. This odour is in general pleasing and refreshing, and it destroys the effects of narcotics. It is often combined with the ethereal smell, as in the aromatic spirit of vinegar, and is destroyed by putrefaction.

The *volatile alkaline* smell is distinguished by a biting acrimony, which irritates the eyes. The horse-radish, mustard, scurvy-grass, with all the alliaceous vegetables, are examples of this odour, which is in part destroyed by acids. It is generally confined in plants by mucilages and oils, and is very durable, since even putrefaction will not wholly separate it. In asafœtida it is combined with the virose odour; and the most fetid smells seem to be combinations of this kind, which lead us to suspect some hepatic combination.

The TASTES of plants conduct us more certainly to their medical properties; but the similarity of terms may contribute, without care, to confound them with the smells. Our chief guide in this path is Linnæus himself; but Bergius, assisted by the comprehensive Linnæan language, has greatly extended our distinctions of taste; though employing terms and comparisons generally known, he scarcely requires an interpreter. Taste has been considered as a cause of the action of medicines, or at least as a means of discovering their properties in almost every era of medicine since that of Hippocrates; and, besides Linnæus, Wedelius, Walther, Hebenstreit, Koenig, and Tauvry, have paid particular attention to it. The two last have, however, confined themselves to mechanical explanations of taste; and, like Willis, have supposed acrid particles needles, oily ones spheres; bitter, salt, acid, and styptic tastes, owing to forked, irregular, polyedral, conical, or hooked particles respectively.

Tastes greatly differ; and though, as in smells, we say in general that substances of an agreeable taste are salutary, and those which are unpleasing to the palate injurious, yet the question of pleasantness or its opposite is relative. Pungent tastes are universally painful; but, when diluted, they become agreeable. In fact, as we shall find in the operation of medicines, every thing in excess is stimulant: we only perceive either peculiar properties, or flavours, when the proportion is suitable to the circumstances. Fourcroy divides tastes into those which are highly pungent or painful, as the caustics; those which excite moderate sensation, as the sweets and bitters; such as only affect the stomach, and very slightly, if at all, the palate, as the antimonials; and such as act only through the medium of the nerves. We need not add that this is to extend the subject beyond its proper limits. It is singular, that the people on the coast of Malabar, among whom medicine is in a very rude state, divide their remedies according to taste. Grundler, the Danish missionary who visited that country in the beginning of the last century, has given an extract from the Voya da-satyram, which contains all their medical science, where the remedies are divided into acids, sweets, bitters, acrids, and astringents. We may just add, that Braun, the son-in-law of Haller, an officer in our service in Indostan, has informed us, that, in the ancient seminary of Benares, no other part of medicine is cultivated except what relates to the virtues of vegetables; and in the Gottingen museum, a valuable hortus siccus of Malabar plants in twelves volumes folio, with their names and properties annexed, was some time since preserved.

Linnæus divides the taste of medicines (Amœnitates Academicæ, ii. 335) into the SWEET and ACRID; the FAT and STYPTIC; the ACID and BITTER; the VISCID and SALT; the WATERY and DRY. The *styptic* is a compound taste, sometimes consisting of the dry and acid, when it is styled *austere*; or of the dry and bitter, distinguished by the term acerb. The *nauseous* taste produces an inverted motion of the œsophagus and stomach. It is a compound, but its ingredients are not easily ascertained. We are informed by Quercetanus, that the medicines styled by Hippocrates bitter, acid, and sweet, are, by Galen, in conformity to his theory of the humours, called hot and cold, wet and dry.

The property of *sweetness* is conspicuous in the roots of the polypody and liquorice; all ripe fruits; in milk and in honey. The sweets, either saccharine or mucilaginous (vide MANNA) are, as we have seen, nutritious, chiefly adapted to dry, lean habits, and advanced life. They are also demulcent, and supposed to be expectorant; but the latter quality rests on a doubtful foundation.

Medicines distinguished by an *acrid* taste are heating, irritating, and, in excess, corrosive. In large doses they are the most destructive poisons. Externally, they are rubefacient, sometimes discutient, or occasionally suppurative. By their general stimulus they promote every evacuation, and are sometimes the most active emetics. Their powers as cathartics are less conspicuous, and they are generally useful in cold, phlegmatic habits. Examples of this kind are the pure alkalis, and the metallic salts; the roots of bryony, pyrethrum, horse-radish, and of the alliaceous tribe; the leaves of the soldanella, persicaria, tithymalus and cochlearia; the bark of the elder; the seeds of the mustard; euphorbium, gamboge, and cantharides.

The *fat* taste is conspicuous in the almond, cocoa-nut, lintseed, and axunge. It is owing to an oil combined with a mucilage, and is lost when they become rancid. They are in general demulcent, and useful when the fibres are stretched, or the mucous membranes abraded. From this last circumstance, they sometimes relieve diarrhœas, though many of this class are naturally laxative.

The contraction of the mouth, which arises from tasting *styptics*, is sometimes communicated to other parts. Alum is a striking example; but it does not follow that styptic vegetables, as has been supposed, contain an argillaceous sulphat. We find this taste in vitriolated iron and zinc; the roots of tormentil, bistort, and quinquefolium; the barks of the tamarisk, the capparis, and the fraxinus; the gall-nut; the leaves of the centinodium, the myrtle, and the oak: the flowers of pomegranate, and in red roses; the juice of acacia, catechu, &c. These remedies are, in general, astringent; and, as they all contain tanin in a considerable proportion, we find the foundation of their properties in the separation of the gelatin. See ASTRINGENTIA.

Of the *acid* taste we require no examples; but if we speak of this as a natural one, we must exclude the mineral acids, which rather belong to the styptics. With this exception, we shall find acid substances cooling and sedative, neutralising in some degree the bile, and destroying putrid acrimony in the stomach. They allay thirst, promote a discharge from the kidneys, and often from the skin. They prevent accumulations of fat in the cellular membrane; but do not, as has been said, coagulate the fluids; for they do not reach the circulating system with their properties unchanged.

The *bitter* taste is confined to the oily and resinous juices of vegetables, and to the inflammable oxides. It is communicated to all vegetable substances by what is styled by the French chemists their combustion, in consequence of their union with nitric acid. Many of the vitriolated neutrals are also bitter; but in detailing their properties we must confine ourselves to the bitter vegetables; for there is no reason to suppose that our artificial bitters agree with the natural. We find the pure bitter chiefly in the roots of the gentian, the male fern, and the white dittany; in the bark of the simaruba, the orange and the lemon peel; in the leaves and flowers of the carduus benedictus and the camomile; in the wood of the quassia; in the tops of the centaury and hop; in the seeds of the cardus benedictus and mariæ; in the juice of the wild cucumber; in the aloes, the myrrh, and the bile of animals. It is seldom pure, and even in some we have mentioned it is joined with a little acrimony; in others with astringency, or acidity. The affinity of the acid with the bitter principle is very striking, since many plants which in some parts are bitter, in others are acid. We need not add any thing to what we have already said in the article AMARA, q.v. except to observe, that some of these mentioned are actively purgative, a quality which certainly does not belong to the pure bitter.

The *viscid* taste is exemplified in the mallows, lintseed, and almost all the pure gums, the cartilages and tendons of animals, particularly young animals. All these substances are demulcent and relaxant; consequently by sheathing abraded membranes, particularly of the urinary system and bowels, they relieve pain, and often appear to check immoderate discharges. They sometimes appear, when taken in excess, to destroy the appetite; and we have suspected them, when swallowed in large quantities, of lessening the urinary discharge.

The *salt* taste is most pure in the muriated soda and the common culinary salt, for all others appear to join different flavours with it. In the vegetable kingdom, we find it, though less pure, in the crithmum, the halimus and salicornia. In the shell fish and the fuci, the taste appears to be derived exclusively from the sea water. See MARINUS SAL.

The *watery* taste chiefly arises from the excess of the aqueous fluid, diluting every peculiar flavour. The most striking instances are the oleraceæ, and some of the etiolated plants; and among the roots, the turnip. These substances are slightly nutritious, diluent, and demulcent. They were supposed to be of considerable and extensive use when diseases were attributed to lentor or viscidity of the fluids.

The sensation of *dryness* in the mouth arises very generally from stypticity; but by a dry taste is generally meant that which is produced, for instance, by chalk. All the earths in a carbonated state are dry. The insipid woods and barks, the leaves of the ivy, and the dust of the polypodium, are examples, in the vegetable kingdom. In the animal, the hart's horn, the crab's claws, the mother of pearl, and coral, are distinguished by a dry taste. These substances, however, unless capable of absorbing acids, are of little utility in medicine, but are by no means so injurious as have been supposed.

In general, we may remark that tastes have a much more pointed and clear connection with the medicinal properties of bodies than smells, and will, in many instances, explain, *a priori*, their virtues. Yet tastes are so infinitely varied by nature, that their composition cannot often be ascertained; and though the expressive language of Berguis conveys ideas peculiarly discriminated and exact, even this, in many instances, fails.

A very important distinction of tastes relates to their fugacity or permanence, their immediate impression or their perception after some interval, their affecting the tip, the middle or back part of the tongue, or the throat. On these subjects our chief assistance is from Grew and Bergius; but we have not been able to connect these different sensations with the properties of the bodies. In general, the stimulants are immediately perceived to increase the heat chiefly on the forepart of the tongue; the narcotics only act after some time, and on the throat. The impressions of salt substances are generally diffused; of syptics confined to the cheeks and anterior fauces.

When the operations of chemistry attracted the attention of physicians, it was at once supposed that they would unravel every secret of nature, and, among the rest, the constituent parts of medicines, so as to explain their operation. The members of the French academy laboured very earnestly in this department of the materia medica: Mr. Boyle and some others of the English and German chemists were equally assiduous; but they soon found, that aliments and medicines, the most salutary foods and the rankest poisons, were equally resolvable into acids, oils, and salts, scarcely differing in their properties. In fact, in resolving the compounds of nature, they formed new ones of art, and were not nearer the destined goal. Neumann and Cartheuser did not wholly forsake the former path, but they interrogated nature by milder methods, and extracting different component parts by the peculiar affinities of water and alcohol, or by their volatility in a gentle heat, taught us what portions of gum, resin, and oil each vegetable contained. But even at a much later period, so rash was the analysis, and so powerful the means employed, that we have only of late discovered what is now styled the extractive matter, or that portion of the gum and resin combined with the peculiar oil and mucilage of the plant, which renders it equivalent to the vegetable itself, deprived only of its air, some portion probably of its water, and the woody fibres. When, therefore, in the vegetable analysis, the proportion of gum and resin with that of the extractive matter is mentioned, the quantity of the two former, or rather of the resin, shows the degree of decomposition which in general has taken place; we say in general, for in many plants, particularly in

the roots, the resin exists in a separate state. Rhubarb is a striking instance of this kind.

Analysis, conducted with care, leads us however to form some conjecture of the nature of the vegetable. The expressed juices of the green and watery plants (the oleraceæ) are slightly laxative and cooling; in the language of the Boerhaavians, aperient; of the cruciform plants (the tetradynamiæ of Linnæus), antiscorbutic. Bitter extracts are tonic, often anthelmintic; oils and mucilages demulcent; essential oils generally stimulant and carminative; and resins either purgative or diuretic. Whatever opinion however be formed of the advantages of analysis in investigating the nature of plants, it has certainly assisted the pharmaceutical treatment of vegetable remedies, and, in the animal kingdom, has been of the greatest utility in showing the fallacy of many boasted remedies, from the identity of their nature, or their insolubility. Even musk and castor we find nearly approaching in their nature to resins, and the gluten of vegetables to animal substances. In the mineral kingdom, our obligations to chemistry are too numerous for repetition, and too obvious to detain us. We shall only remark, among these, the antidotes discovered to some of the most active poisons, and the advantages we derive from our power of preparing artificial mineral waters.

The utility of NATURAL HISTORY in investigating the properties of medicines is very considerable. To be able to ascertain with certainty the identity of any plant is an object of no little importance, as it prevents our disappointment in future trials. Were it not for the assistance of natural history, the greater part of the experience of the ancients would have been useless; and were it not for the aid of Caspar Bauhine, we should wander through their works, like the first travellers in the American forests. All around would be unknown: we could neither appreciate their views, nor follow their examples; yet we have known commentators on the ancient authors, who, supposing they meant some given medicine, were little anxious what it might be. A deep knowledge of botany, however, is unnecessary. We now know more than 50,000 species, and of these scarcely a hundred are employed in general practice; and of the latter, two-thirds, or even a greater proportion, are useless. Yet the principles of the science should be known, for the reasons just mentioned; and, above all, the foundation of the natural orders for the reasons and purposes already assigned. (See BOTANY.) One great advantage is, that if a given plant cannot be procured, a similar one may be selected from its natural order; and the author of the little tract on botanical analogy has shown, in a variety of entertaining examples, how the same remedy has been extolled and forgotten; repeatedly, at different periods, and under different names, revived.

OBSERVATION and EXPERIENCE are, on the whole, the safest guides; but here again we are lost in wildernesses or fogs. Numerous remedies, recommended as certain, are found to fail: what we have ourselves, at different times, considered to be firmly established as proofs of holy writ, at others we have found less substantial than the shadow of a shade. In every step we feel the truth of the Hippocratic axiom "experientia fallax." If those whose education and experience contribute to point out the danger of deception, find that the *post hoc* is not always equivalent to the *propter hoc*, how many sources of deception must surround those not accustomed to such observations? Yet medicines are commended by men of the first character, rank, and abilities, as certain remedies: every newspaper teems with affidavits, and we are deemed incredulous indeed if we disbelieve a bishop or a judge. Medical evidence differs greatly from every other: we are obliged to act on the result of reasoning often extremely insufficient; our decisions on the effects of medicines, on the contrary, require the most rigorous examination. If a man asserts, for instance, that he has been cured of a consumption by Godbold's syrup, it implies several positions extremely doubtful. How can he ascertain that the disease was a consumption? for in this respect the most judicious practitioner is often deceived. But, admitting that it is so, we know that vomicæ are often completely discharged: we know that an ulcer spontaneously heals, and it is as probable that diet and regimen may have effected the cure, as a medicine equally inconsiderable in its powers. If then we cannot trust to experience, what must be our resource? Though nothing may be certain in the operation of medicines, and our evidence only establish different degrees of probability, yet a rigorous scrutiny in the investigation of every fact respecting this part of the science will greatly facilitate our progress in similar circumstances. Authors on the materia medica abound with assertions respecting the properties and use of every medicine, and the most inert is often represented in colours too glaring for even the most active. This partly arises from the want of discrimination just mentioned, but more often from an anxiety to display the extent of their own learning; and such are the accumulated recommendations which the student finds, that he thinks his only labour is selection. So frequent are his disappointments, that he at last mistrusts even the most respectable authorities. Who will cleanse this Augæan stable? It will require an Herculean hand; and the little that can be done in a general work like this can scarcely lessen the labour. We shall not however mispend our time, if we examine shortly the conduct of the best authors on this subject.

In this enumeration we should have omitted the systems of the astrologers and the signaturists, but that the fancies of the latter still remain. The former we may safely neglect, though not wholly forgotten by the empyrical old women of the country, who still prefer collecting plants at the full or new moon. The signaturist prefers plants which resemble the part diseased; and euphrasia is still used for complaints of the eyes, though its original claim to notice arose from a black spot in its corolla resembling the pupil; and the pulmonaria is employed in diseases of the lungs, because its form, its texture, and its spotted areolæ, afford a distant resemblance to these organs. Crollius is the great authority of this sect: but to return to more rational authors.

The earliest therapeutical authors were the natural historians; for to their descriptions of plants were usually added their medical virtues. The herbals, as they may be called, from the time of Theophrastus and Dioscorides to Gerarde, &c. are full of extravagant commendations of the most inert vegetables. The latter authors were indeed compilers only; and, if they added

to the bulk of their volumes, were little anxious about their value. They are, in general, careful to tell us in what degree a medicine is hot or cold, to what temperament it is best adapted; but to distinguish the diseases, or the periods of any disease in which a given plant would be most salutary, was often beyond their powers.

When botany assumed a more scientific aspect, and distinction as well as description was its object, our knowledge of the materia medica was greatly assisted. The herbalists had accumulated their commendations with little discrimination; but in the materia medica of Linnæus we find more accuracy. He first published that of the vegetable kingdom, and afterwards in the Amœnitates Academicæ those of the animal and mineral. In each he followed his own system. These treatises were republished by Schreber at Vienna, in 1773, with additions from the Amœnitates and the later works of the northern naturalist. In this volume we are told whether a medicine is common, rare, or useless; and, in enumerating the qualities which are those of the greatest importance, the author points out often, by distinguishing marks, how far the boasted powers may be depended on. Tessari, in his republications of Linnæus's system at Venice under the title of Materia Medica Contracta, has carried this plan farther; and in a MS. which was some years since intended for publication, it is still farther extended and more complete. Bergius, an author of the Linnæan school, has described plants according to his master's system, and, in the most precise and pointed language, conveys very accurate ideas of the sensible qualities of every vegetable remedy. Of the qualities he only mentions the most important; and the practical observations, almost exclusively his own, are few, though important. He apologises for not copying former authors by observing, "that those who have examined them will soon discover that so many fictions are interspersed with what is true, that they cannot be easily separated. Many writers on the materia medica, he adds, "have injured this science by trifling fictions and conjectures; by inventing qualities dictated by their prejudices, which they have obtruded on nature. Some have compiled from former authors, inserting their own opinions and their own observations. Many, with too much credulity, have adopted and transcribed the assertions of their predecessors, though of doubtful authority and sometimes ridiculous; so that, in more recent authors, we find the old remnants repeatedly hashed; blunders again and again copied." We add the words of Bergius partly as an apology for ourselves, since from the pages of Motherby we have been obliged to expunge qualities of medicines far more numerous than those which the experience of others, or our own, has justified us in retaining. The pharmaceutical and miscellaneous remarks of Bergius are highly valuable; and we regret that the animal and mineral kingdom had not equally shared his attention.

Haller, in his description of the plants of Switzerland, has followed, in the arrangement, his own botanical system. As usual, he has annexed to each plant its medical virtues; and this portion of the work has been republished by Vicat in two small volumes. Haller seldom indeed speaks from himself; for he was not a practical physician, and his compilation is not very discriminated. The best part of his work relates to the domestic medicine of the Swiss mountaineers. Dr. Woodville's Medical Botany is of this class; but in his three volumes he only considers the vegetables included in the lists of the London and Edinburgh colleges. In the fourth, some of the plants used in medicine, not included in these catalogues, are figured and described. The substance of this work is chiefly taken from the materia medica of Lewis and Cullen; but the plates, which are indeed elegant and accurate, are equally beautiful and far more numerous in the large and expensive folio of Plenck. Ray, in his history of plants, adds their medical virtues; but Ray, like Haller, was no practitioner; and the greatest abilities, the soundest judgment, will not teach that nice medical discrimination, without which compilations are useless. Yet Ray's collections are so extensive, that he merits all the attention, which is not inconsiderable, that he has received. Some other authors have treated of the materia medica as general botanists. The pharmacologia of our own Dale is obsolete, yet it displays judgment and discrimination; for he has avoided the common error of his predecessors, that of collecting every idle observation from the works of his predecessors. Simon Paulli's Quadripartitum Botanicum, connected however but slightly with the botanists, is deservedly neglected; and Zorn's Botanologia Medica, in the German language, scarcely merits more attention.

It is not from forgetfulness that we have omitted noticing Murray's *Apparatus Medicaminum*, in six volumes of unequal bulk. We have separated this work from the rest, because it affords the first example of arranging vegetable medicines from their natural orders. We have already spoken of his merit in this respect; and must now add, that he has collected with great care what the best practitioners who preceded him had taught, and has probably left little for his successors but the labour of discrimination. This part of the task he has greatly neglected; and his work is, on this account, by far less valuable than it might have been. His collection, however, is by no means like that of Vogel, indiscriminate. Gmelin has published the materia medica of the mineral kingdom as a Supplement to Murray's Apparatus, but with still less discrimination, and with very few marks of a correct judgment.

Many authors on this subject have followed a more arbitrary arrangement, though in part botanical. Thus, Simon Paulli has divided his plants as they flourish in either of the four seasons; Vogel, according as the leaves, bark, wood, or roots are employed, again subdivided as frequently or seldom employed, or as obsolete, arranging them afterwards alphabetically. The subject is thus broken into so many detached parts, that from the laboured order the greatest confusion arises. Vogel is also a most laborious collector, with little discrimination; and, though a judicious practitioner, seems in this work to have forgotten himself, and to have become a compiler only. It is however a manual little inferior in extent of compilation, though of comparatively little bulk, to that of Murray. Another collector who follows, in part, a botanical arrangement, but who does not display a superior discrimination, is Dr. Alston. His chief value arises from his copious compilations from the Greek and Roman authors; but his materials are so inartificially and unpleasingly compacted, that we suspect that he has been seldom read.

HERMAN, in his cynosura of the materia medica, has united the botanical and chemical authors. He arranges his vegetable remedies from the parts employed, and subdivides them according to their chemical analysis. His work is little known in this country, and as a compilation from almost forgotten German authors deservedly neglected. GEOFFROY, who follows a botanical arrangement, has been also peculiarly attentive to chemical analysis; and his materia medica is equalled by few works on the subject in extent of information or judicious discrimination. It is unfortunately little known, though meriting from the student minute attention; and there are few veterans in practice who might not consult it with advantage. The Supplement, containing the account of animals by Nobleville and his coadjutors, is of very inferior merit. Neumann, in his chemical works, gives us some very judicious and minute analysis of vegetable remedies; but the system of materia medica which rests chiefly as the foundation of its arrangement on the chemical contents of medicines, is that of CARTHEUSER, which, on this account, merits particular regard, and is, in some other views, a valuable and judicious work.

If these systems are arbitrary in their arrangement, and, with the exception of the apparatus medicaminum, giving little assistance to the student, and scarcely illustrating the use of any medicine, by the observations that may have been offered on the preceding or following article, still less advantageous must be the alphabetical order which Lewis has followed in a most admirable work, and Dr. Rutty, in a very inferior one, on the materia medica; an arrangement, if it can be styled one, which Vogel, Geoffroy, and Herman, have in a great degree adopted. The therapeutical writers on the materia medica have followed a very different path. Considering medicines as producing certain specific changes in the body, those which produce given changes are arranged under the different and appropriate heads. We thus find not only the principles on which they act, but are able, with very little inconvenience, to compare in given circumstances the advantages and disadvantages of each, or when disappointed in the effects of one, to supply its place with another. In this way also the individuals of each class form one separate distinct subject, scarcely, if at all, broken by a consideration of the different qualities of each. In the arbitrary alphabetical arrangement, which from the nature of this work we are compelled to adopt, we can scarcely avail ourselves of the advantages just stated. We have endeavoured, however, to combine this plan by enlarging the therapeutical articles, and interweaving, in these, the foundation of our choice of individuals, in different circumstances.

It will be obvious, that, in pursuing a plan of this kind, authors must differ according to their different objects. Thus SPIELMAN, who connects the chemical and therapeutical sects, scarcely employs indications but as the titles of his chapters; while Dr. CULLEN, diffuse on the therapeia, is short and often unsatisfactory in the history of many individuals. In short, this latter work, though vast, bold, and comprehensive in its design, is, however, as it has been styled by an able critic, rather the philosophy of the materia medica than a detail of the nature and properties of medicines. CRANTZ' work is short and unsatisfactory in a therapeutical view, though judicious and able in the remarks on different medicines; while JUNKER, and DE GORTER, offer little but a catalogue of medicines arranged according to indications. The latter, though published as that of David, was really the work of his father, John De Gorter, one of the most judicious and intelligent commentators on the aphorisms of Hippocrates. The choice of the plans of teaching the materia medica must lie between the arrangement of medicines according to their natural orders, or according to their therapeutical qualities. The botanical affinities in the Linnæan orders are not, however, so strictly medical as to render this plan very eligible, and though the arrangement is improved by Murray, it is far from being sufficiently accurate for this purpose. The natural orders of Jussieu, as more numerous, are more natural in a botanical view, but are consequently less usefully therapeutical. The therapeutical plan is therefore undoubtedly preferable, and, with it, the former may be more intimately united than by Dr. Cullen, for he has not introduced all the natural orders of Linnæus, though he has grouped some vegetables, in orders strictly natural, not found in the fragments. The orders are not so numerous as to require what Linnæus calls a method, or a clavis, to connect them; yet their arrangement is by no means to be neglected, as the therapeutical observations necessary to introduce each are intimately connected. Dr. Lewis has proposed an arrangement of the materia medica into eleven natural orders, which are not formed exclusively from the properties or the effects. These are acids, absorbent earths, insoluble earths, glutens, oils, astringents, sweets, acrids, aromatics, bitters, and emetics, including cathartics. These orders certainly afford no eligible system of arrangement. Some minuter groups retained in the foreign pharmacopœia, as the *four cold seeds*, &c. we shall notice under PHARMACIA.

In Dr. Cullen's system the materia medica is divided into nutrients and medicines: nutrients are food and drink, with which condiments are joined.

Medicines either act I. on the solids, or II. fluids. The first act either on the simple or the vital solid. Medicines which act on the simple solid are *astringentia, tonica, emollientia,* and *erodentia.* Those which act on the vital solid are *stimulantia, sedativa,* including *narcotica, refrigerantia,* and *antispasmodica.*

Those which act on the fluids are such as either produce a change, or occasion some evacuation. The changes respect the fluidity, comprising *attenuantia* and *inspissantia,* or the mixture: when they correct general acrimony, they are styled *demulcentia;* when particular acrimony, *antacida, antalkalina,* and *antiseptica.* The medicines which occasion evacuation are *errhina, sialagoga, expectorantia, emetica, cathartica, diuretica, diaphoretica,* and *menagoga.*

In this arrangement Dr. Cullen has forsaken his own system of pathology, since the fluids, in his opinion, are not affected, without previously influencing the moving powers. Some other critical remarks might be added, were this the place for such disquisitions. To connect this part of the work with what has preceded, and will follow, we shall add what appears to us a more convenient arrangement, and subjoin a list of the materia medica adapted to it, adding the pharmaceutical or Linnæan names, while the more particular references may be found under each article.

T 2

It has been usual in these circumstances, with Spielman and Cullen, to premise the nutrientia; but as this would only extend the clavis, and we have already treated of it at some length under ALIMENT, q. v., we shall now omit this class, which consists only of FOOD, DRINK, and CONDIMENTS.

MEDICAMENTA AGUNT.

I. In Solida viva.
α. 1. Motum augent.
in ventriculo.
EMETICA.
Intestinis.
CATHARTICA.
Vasis extremis.
DIAPHORETICA.
Renibus.
DIURETICA.
Bronchiorum glandulis.
EXPECTORANTIA.
Narium glandulis.
ERRHINA.
Salivæ glandulis.
SCIALAGOGA.
Uteri vasis.
EMENAGOGA.
Toto corpore.
STIMULANTIA.
Cardiaca.
Analeptica.
Attrahentia.
Discutientia.
2. Motum imminuunt.
α REFRIGERANTIA.
Resolventia.
β ANTISPASMODICA.
3. Tonum imminuunt.
SEDANTIA.
Anodyna.
Inirritantia.
4. Tonum augent.
TONICA.

II. In Fluida.
1. Crasin immutantia.
α ATTENUANTIA.
β INSPISSANTIA.
γ ALTERANTIA.
2. Acredinem corrigentia.
α DEMULCENTIA.
β ANTACIDA.
γ ANTALKALINA.
δ ANTISEPTICA.

III. In Solida simplicia.
α EMOLLIENTIA.
Relaxantia.
β ERODENTIA.

γ ASTRINGENTIA.
IV. In Corpora aliena.
1. Venena.
ALEXITERIA.
Antidota.
2. Calculum.
LITHONTRIPTICA.
3. Vermes.
ANTHELMINTICA.

The classes of the materia medica are not so numerous as to require what is usually styled a methodus; and, if any thing were sacrificed to the parade of system by this means, it would be improperly adopted. Whatever may be its merits, it has no disadvantages, for the arrangement is exactly such as if the orders were natural and independent; and the clavis limits the intention of the group with peculiar accuracy. The evacuants most nearly related follow each other; and as no evacuation can take place without the excitement of the vessels as muscular organs, so in the following class, stimulantia, where the nervous system is more generally affected, a general action of the vessels of the whole system usually accompanies. Of the synonyms of Stimulantia the two first, should such medicines exist, act more peculiarly on the nervous system: the two last are topical remedies. The distinction between general and topical medicines usually admitted is, at best, useless, if not injurious; for the most active internal medicines are often powerful topics.

The next division is also connected with some action on the sanguiferous system, which disappears in the second class, the antispasmodics. Resolvents are truly refrigerants, for discutients occur in a subsequent part. The medicines which increase tone are included under tonica, and the astringents are referred to those medicines which act on the simple solid. Some certainly act on both, and astringents, as already explained (see ASTRINGENTIA), sometimes appear to be tonics. The medicines which diminish tone, diminish also sensibility and excitability; and we have added as synonyms anodyna and inirritantia; those which possess an opposite quality are commonly associated in idea with stimulants.

We have admitted, with limitation and reluctance, any action of medicines on the fluids, adopting the axiom of the nervous pathologists, that the constitution forms its own fluids. Yet some complaisance is due to many excellent physicians of the Boerhaavian school, and it is at least necessary to point out the medicines which have been employed with these views. The third of the classes of the first division, the alterantia, is vague; yet the action of remedies in scurvy, in what are styled scorbutic eruptions, in lepra, and some other cases, must be collected into one group, and it is not easy to find a more proper place. In the second division we clearly perceive the action of demulcents on the throat, the stomach and alimentary canal, the urinary organs, and perhaps the bronchial glands. The antacids and antalkalines are at least useful in the stomach, and some medicines undoubtedly act, chemically, as antiseptics.

The medicines which act on the simple solids afford few subjects of remark. If relaxants are any thing more than emollients, they bear the same reference to the sedantia that the astringents do to the tonics; at least they seem to act through the medium of the simple solid. For these and the other reasons assigned, the astringents are referred to this place. The last general division contain classes independent in their operation on each other. Lithontriptics may be only antacids,

but they are said, with confidence, to dissolve the calculus. Anthelmintics may be only drastic purgatives, but some at least kill worms. The observations on the subdivisions of the catalogue must be deferred till that is concluded.

It is a common objection to any arrangement, that some medicines possess very different powers, and that their proper places are not easily ascertained. Instances of this kind occur in mercury and steel. Repetition however is unavoidable; and those who seek for the medicine appropriated to any disease in such catalogues, must find them in each list. The more general author on the materia medica, will treat of them under that head where their powers are most conspicuous; and the medicine will again recur, where from its preparation, or exhibition, peculiar properties are discovered in it. The catalogue, which we shall add, will differ from former ones by the subdivision into groups, which may be styled orders, an attempt first made by Dr. Duncan in his Therapeutics. The plan we have followed is adapted to the therapeutical ideas offered under the different articles; and we consider this mode of arrangement as peculiarly useful, at least to the student, since it offers at almost one view a more distinct idea of the powers and properties of each medicine than is obtained in the best systems. The catalogue itself can possess no other very peculiar advantages; yet we cannot conclude this part of the subject without acknowledging our obligations to the very excellent syllabus of Dr George Pearson, who lectures on the materia medica with distinguished, and if we can judge from this little work, with the most merited reputation.

In our general observations on the materia medica, we mentioned the plan of some authors, and particularly of Tessari, of distinguishing the degree of power by slight marks at the end. This idea we have occasionally pursued; and while we have followed, without any very nice discrimination, the conduct of our predecessors in the medicines inserted under each class, when their powers are considerable we have added a note of admiration (!); when dangerous two (!!); when trifling, a semicolon (;); when doubtful, a note of interrogation (?); when the medicine has been introduced by fancy, folly, superstition or prejudice, a colon (:). These marks are only added to a few, and for the Linnæan appellations and synonyms the reader is referred to the separate articles.

CATALOGUE.

I. Emetica.

α. Nauseosa.

Scillæ radix!
Antimonii præparationes, refractâ dosi.
Digitalis purpurea. folia!
Nicotiana!
Nux vomica!
Colchicum autumnale.

β. Evacuantia.

Emetica Nauseosa, auctâ dosi.
Asarum.
Raphanus rusticanus, radix.
Sinapi nigrum et album. semen.
Bryonia alba.
Gratiola officinalis.
Veratrum album.
Ipecacuanha.
——— alba;
Cathartica drastica.
Amara calida dicta.
Carduus benedictus. semen.
Chamomælum. flores.
Absynthium. folia.
Genista. summitates. semen.
Zincum vitriolatum & ustum!
Cuprum vitriolatum!
Platinæ præparationes?
Ammonia;
Aqua distillata flammulæ Jovis!
——— ranunculi!
——— linguæ!
Emetica epigastrio infricata;
Aqua calida, præsertim ope.
Salis marini, Olei communis.
Pulv. sem. sinapeos, Hepatis.
Sulphuris, vel putridorum.
Motus vertiginosus, vel inusitatus.
Associatio.

γ. Irritantia.

Erigerum succus!
Hydrargyrus vitriolatus!!
Vitrum antimonii!
Arsenicum!!

II. Cathartica.

α. Lenitiva.

Sales terrei & neutri.
Alum?
Selenita?
Aquæ minerales salinæ;
Fructus acido dulces;
Cerevisia;
Vinum;
Lac acidulatum;
Sapo.
Cassia fistularis fructus.
Manna.
Saccharum impurum;
Mel;
Fructus siccati;
Oleum olivæ.
——— ricini.
Thalictrum.
Infusum coffeæ; ?
Emetica nauscosa.
——— *evacuantia.*
Balsamum copaibæ;
Gum asafœtida;
Sagapenum;
Opoponax;
Myrrha;
Galbanum;
Rosa damascena. folia;
Bilis?
Infusa aquea animalia vel vegetabilia copiose hausta.
Enemata aquosa.
Cathartica acria abdomini infricata?
Aqua frigida in femora & ventrem cum impetu adacta.

β. Purgativa.

Sena. folia.
Jalapium. radix!
Mechoacanna. radix.
Rheum. radix.
Aloes succotrini succus inspissatus.
Polypodium. radix.
Myrobolans fructus.
Pulvis antimonialis.
Calomelas!
Rhamnus catharticus. baccæ.
Senega radix!
Nitras & phosphas argenti?
Peragua. folia.

γ. Drastica.

Gutta gamba. gum.
Scammonium gummi resinæ.
Elaterium!
Colocynthis fructus medulla.
Convolvulus brasiliensis.

Convolvulus soldanella !
——— turpethum !
Gratiola. folia.
Alnus nigra !
Linum catharticum. folia.
Helleborus niger & albus. radix.
Genista. semen!
Arthanita !
Cucumis asininus fructus !
Sambucus niger. cortex.
Sambucus ebulus. cortex interior.
Iris nostras succus!
Cheledonium. radix.
Agaricus muscarius.
Boletus larycinus.
Anagyris fœtida.
Croton tiglium !
Carthamus tinctorius. semen. flores
Buxus. folia.
Bryonia alba & dioica !
Euphorbiæ species omnes !
Lycopodium selago.
Mercurialis annua.

δ. Narcotica.

Nicotiana. folia !
Digitalis purpurea. folia.
Lactuca sylvestris.
Drastica odoris tetri & saporis amari?

III. Diaphoretica.

α. Diapnoica.

Argenti vivi præparationes variæ.
Guaiacum lignum.
Sarsaparilla. radix.
China. radix.
Ulmus. cortex interior.
Mezereon. radix.
Gestatio.
Navigatio.
Libratio.
Frictio.
Aer frigidior.
Potiones frigidæ.
——— acidulæ.
Applicationes frigidæ.
Lavatio frigida.

β. Relaxantia.

Antimonii præparationes variæ.
Ipecacuanha.
Scilla.
Opium.
Acetum
Calor mediocris.
  Solidorum.
  Balnei.
  Semicupii.
  Pediluvii.
  Fotus.
  Aeris.
Serum lactis.
  Ex aceto.

γ. Stimulantia.

Calor eximius.
Contrayerva.
Serpentaria.
Infusa calida.
  Menthæ.
  Macis.
  Melissæ.
  Calendulæ.
  Salviæ.
  Caryophyllorum.
  Scordii.
  Sassafræ.
  Cinnamomi.
  Pimento.
  Zinziberis.
  Marjoranæ.
  Sinapeos sem.
  Thymi.
  Coriandri sem.
  Serpentariæ.
  Carui sem.
Alcohol.
Vinum.
Cerevisia.
Ammonia.

IV. Diuretica.

α. Diluentia.

Aqua.
Diaphoretica relaxantia.
Acidulæ.
Fructus acido-dulces.
Oleraceæ.

β. Stimulantia.

1. Salina.
  Alkali fixum.
  ——— purum.
  ——— carbonatum.
  ——— supercarbonatum.
  Strontiæ solutio ?
  Magnesia ? ;
  Barytes ?
  Sales alkalini neutri
  Acida vegetabilia.
  Fructus acido-dulces.
2. Acria.
  Alliacea.
  Scilla.
  Herbæ siliquosæ & siliculosæ.
  Juniperi baccæ.
  Apium graveolens.
  ——— petroselinum.
  Scandex chærifolium.
  Daucus sylvestris. semen.
  Fæniculum. semen.
  Stellatæ ?
  Asparagus. Turiones.
  Bardana ?
  Arum. radix ?
  Eryngium maritimum ? radix.
  Persicaria urens herba ?

Seneka. radix.

γ. Narcotica.

Arnica ?
Dulcamara ?
Nicotiana. foliorum ustorum lixivium.
Lactuca virosa ;
Digitalis !
Genista. summitates.
Alkekengi.

V. Expectorantia.

α. Demulcentia.

Saccharum.
Mel.
Extractum malvæ (pate de guimauve)
——— hordei vegetantis (malt).
Amylum.
Liquoritia.
Succi inspissati fructuum dulcium.
Caricæ.
Uvæ passæ.
Gluten farinæ (bran).
Gelatina.
Icthyocolla.
Conserva cynosbatum.
Gummi arabicum.
——— tragacanthæ.
——— cerasorum.
Lini semen.
Mucilago seminis cydonii.
Sapo.
Expectorantia demulcentia.
Oleum expressum olivæ.
——— amygdylarum.
——— semini papaveris.
——— cacao.
Tussilago.
Petasites.

β. Refrigerantia.

Succi spissati ribis nigri & rubri.
Conserva lujulæ.
Pruna gallica & sylvestria.
Fructus acido dulces.
Limonum succus.
Nitrum.
Acetum.
Vapor aceti cum aqua calida.

γ. Relaxantia.

Aquæ vapor.
Emetica nauseosa.
Ipecacuanha.
Opium.
Digitalis.
Nicotiana ?
Hydrogenium. gas ?
Seneka. radix.

δ. Stimulantia.

Balsama, q. v.
Benzoinum ?

Gum ammoniacum !
—— myrrhæ.
—— assa fœtida.
—— rezinæ fœtidæ aliæ ;
Umbellatarum semina.
Angelica. radix ;
Hedera terrestris ;
Hyssopus herba.
Marrubium album.
Agrimonia ?
Pulegium.
Iris florentina.
Enula campana.
Siliquosæ.
Alliaceæ !
Scilla !
Colchicum autumnale.
Aquæ vapor imbutus.
Herbis aromaticis.
Oleis essentialibus.
Alcohole.
Oleo vini.
Æthere.
Acido nitroso.
Aer æthere &c. imbutus.
Ammonia.
Oxygen ?

VI. Errhina.

α. *Mitiora.*

Primula veris.
Iris. radix.
Lavendula. flores.
Beta. radix. succus.
Betonica. folia.
Marjorana.
Hippocastanum. fructus.
Rosmarinus. summitates flores.

β. *Acriora.*

Asarum.
Euphorbium.
Nicotiana.
Helleborus albus.
Ptarmica. folia. flores.
Iris nostras. radix.
Pyrethrum.
Marum syriacum.
•Hydrargyrus vitriolatus.

VII. Sialagoga.

α. *Secretoria.*

Hydrargyri præparationes.
Acidum nitricum ?

β. *Excretoria.*

Nicotiana.
Pyretrum.
Piper.
Caryophyllus.
Angelica.
Imperatoria.
Stavisagria. semen.
Zinziber.
Mezereum.
Mastiche ; ?

VIII. Emenagoga.

α. *Stimulantia.*

Oxygenii gas.
Exercitatio.
Gestatio.
Frictio.
Electricitas.
Alcohol ?
Dapes lautæ.
Calor aeris vaporis vel aquæ.
Ferrum.
Oleum animale.
Balsamum peruvianum.
Petroleum.
Emetica.
Hyssopus.
Guaiacum.
Ammonia.
Argentum vivum.
Bathonienses aquæ.
Pathemata excitantia.

β. *Irritantia.*

Cathartica purgantia.
Oblectamenta venerea.
Rubefacientia.
Cantharides.
Terebinthina.
Rubia. radix ? ;
Helleborus niger.
Electricitatis impetus per pelvim.
Cucurbitulæ non cruentæ.

γ. *Antispasmodica.*

Camphor.
Sabina.
Moschus.
Castor.
Gummi resinæ fœtidæ.
Ambragrisea ?
Æther.
Pediluvia.
Semicupium.

δ *Tonica.*

Cortex peruvianus ?
Amara calida.
Lavatio frigida.
Gestatio.
Hilaritas.
Tranquilitas.
Metalla excepto plumbo.
Aquæ ferrugineæ minerales.

IX. Stimulantia.

α. *Diffusibilia.*

Calor aeris, aquæ, vaporis & solidorum calefactorum.
Oxygenii gas respiratum.
Valens materia alimentaria ex animalibus.
Exercitatio.
Pathemata excitantia.
Acria cuti applicata.
Frictio.
Ammonia.
Hydrargyri præparationes.
Aromatica.
Caryophylli.
Cinnamonum.
Balsamita.
Ginseng.
Melissa.
Nardus celtica & indica.
Macis.
Capsicum annuum.
Myristica nux.
Canella alba.
Piper cayennensis.
Pimento.
Piper album & nigrum.
Capsicum.
Zinziber.
Cubebæ.
Cortex winteranus.
Cardamomum minus.
Cassia lignea.
Grana paradisi.
Aurantium & limon. cortices.
Aromaticorum olea essentialia.
Balsama.
Peruvianum.
Gileadense.
Copaibæ.
Canadense.
Terebinthinæ.
Gum resina styracis.
——— euphorbii.
——— benzoe ;
——— myrrhæ ;
Scordium. folia.
Radices.
Galangæ.
Zedoariæ.
Calami aromatici.
Serpentariæ.
Ari.
Sarsaparillæ.
Chinæ.
Contrayervæ.
Pulsatillæ nigricantis.
Verticillatæ. folia & flores.
Melissa.
Calamintha.
Lavendula.
Dictamnus creticus.
Origanum.
Marjorana.
Rosmarinus.
Marum syriacum.
Chamædrys.
Betonica.
Mentha sativa & piperitis.
Menthastrum.
Mentha gentilis Lin.
Nepeta.
Pulegium.

Hedera terrestris.
Hyssopus.
Thymus.
Serpillum.
Salvia.
Satureia.
Verticillatarum. olea essentialia.
Umbellatæ. semina.
Anethum.
Anisum.
Angelica.
Carui.
Coriandron.
Cuminum.
Fœniculum.
Pimpinella.
Ligusticum.
Imperatoria.
Seseli montanum.
Daucus sylvestris & creticus.
Umbellatarum gum-rezin fœtidæ.
Asafœtida;
Galbanum;
Opoponax;
Siliquosæ.
Sinapi semen.
Raphanus rusticanus. radix.
Cochlearia hortensis. folia.
Alliaria.
Lepidium.
Eruca. semina.
Napus dulcis. semina.
Erysimum.
Thlaspi. semen.
Nasturtium aquaticum.
Cardamine flores.
Alliacea—Spathaceæ.
Allium.
Cepa.
Porrum.
Coniferæ. succi spissati.
Terebinthina vulgaris & veneta.
Thus.
Olibanum gum rezina.
Juniperus baccæ.
Euphorbiæ.
Esula.
Lathyrus.
Cataputia.
Peplus.
Tithymalus.
Mezereum.
Flammula Jovis.
Sedum acre.
Ladanum.
Liquid ambar.
Gum elemi.

β. *Topica.*

Natron.
Sal marinus.
Cantharides!
Pix Burgundica.
Sabina. folia.
Anacardium orientale & occidentale.
Moxæ urentis flamma.
Ranunculus folia. radix.
Daphne laureola.
Iris palustris. succus.
—— radix.
Stavisagriæ semen.
Persicaria urens.
Urtica. folia.
Cevadilla.
Toxicodendron.
Arthanita. radicis succus.
Liliaceæ.
Siliquosæ.
Kali purum.
Ammonia pura.
Calx viva.
Acida mineralia.
Sales metallici.
Butyrum antimonii!
Ærugo Æris!
Cuprum vitriolatum!
Hydrargyrus muriatus.
Argentum nitratum!
Oxyda.
Cupri.
Hydrargyri.
Arsenici!
Verberatio.
Urticatio.

γ. *Indirecta.*

Vinum.
Cerevisia.
Alcohol!
Olea empyreumatica!
Æther!
Oleum alcohol vini.
——— dulce gas olefiantis.
Papaveris succi.
Lollium temulentum.
Cocculus indicus.
Kaad arboris arabici summitates.
Haschich. folia arboris arabici.
Hyosciamus physalodes.
Peganum harmala.
Agaricus muscarius.
Rosmarinus sylvestris.
Achillæa millefolium.

X. Refrigerantia.

Sales neutri.
—— terrei; ?
Acida vegetabilia nativa.
—— fermentatione orta.
Fructus acido dulces.
Acetosa.
Acetosella.
Cathartica lenitiva.
Emetica nauseosa.
Frigus.
Materia alimentaria imbecilla.
Sanguinis missio.
Arteriarum sectione.
Venarum sectione.
Hirudinum vulneribus.
Cucurbitulis cruentis.
Aquæ frigidæ potus.
Plumbi præparationes.
Stimulorum abstractio & evitatio.

XI. Antispasmodica.

α. *Fœtida.*

Fossilia.
Ambragrisea.
Succinum.
Petroleum.
Bismuthum.
Vegetabilia.
Ruta.
Sabina.
Aristolochia;
Artemisia;
Atriplex olida.
Cardiaca.
Matricaria.
Gummi.
Asafœtida.
Galbanum.
Opoponax.
Tacamahac.
Camphor.
Pæonia. radix.
Valeriana. radix.
Fuligo ligni.
Animalium humores.
Castor.
Moschus.
Zibethum.

β. *Sedantia*, q. v.
γ. *Stimulantia*, q. v.
δ. *Emollientia*, q. v.
ε. *Demulcentia*, q. v.
ζ. *Tonica fossilia*, q. v.

XII. Tonica.

α. *Amara calida.*

Cincona. cortex. rubra & flava.
Angustura. cortex.
Swietenia cortex.
Eleutheria. cortex.
Aurantium. cortex.
Canella alba.
Quassia amara.
Picrania amara. lignum. Wright.
Rhodium lignum.
Arnica.
Columba radix.
Cursuta. radix.
Angelica. radix.
Galanga.
Zedoaria.
Iris.
Curcuma.
Serpentaria virginiana.
Calamus aromaticus.
Aristolochia tenuis.
Aureliana canadensis.
Centaurium minus.
Aloes.

β. Amara narcotica.
Faba St. Ignatii.
Amygdala amara.
Lupulus flores.
Chamomælum. flores.
Helleborus niger radix.
Hippocastanum fructus.
Absynthium Romanum & maritimum ?
Santonicum. semen.
Abrotanum folia ?
Carduus benedictus. semen.
Genista. cacumen.
Hypericum flos.
Tanacetum flos et herba.
Trifolium paludosum.
Marubium herba.
Myrrha.

γ. Fossilia.
Alumen
Acida mineralia.
Antacida, q. v.
Metalla.
Ferrum.
Zincum.
Stannum.
Argentum.
Arsenicum.
Cuprum.
Bismuthum.

δ. Astringentia.
Quercus. cortex.
Gallæ.
Fraxinus. cortex.
Lignum campechense.
Terra Japonica.
Gum kino.
Sanguis draconis ?
Acacia succus.
Uva ursi.
Viscus quercinus.
Myrtus.
Plantago.
Millefolium.
Balaustia.
Senticosæ.
Rosa rubra petala.
Tormentilla. radix.
Agrimonia.
Stellatæ.
Rubia. radix ?
Aparinæ ;
Galium ;
Vaginales oleraceæ.
Rhaponticum.
Bistorta.
Rhabarbarum.
Hydrolapathum & oxylapathum.
Rhabarbarum monachorum.
Cryptogamia.
Felix florida.
Trichomanes.
Equisetum.
Muscus pyxidatus.

Fructus.
Cydonia.
Pruna sylvestria.
Sorba.

XIII. Sedantia.

α. Refrigerantia, q. v.

β. Narcotica.
Solanaceæ.
Digitalis.
Belladonna.
Dulcamara.
Solanum.
Mandragora.
Hyoscyamus.
Nicotiana.
Stramonium.
Umbellatæ.
Conium.
Cicuta.
Fœniculum aquaticum.
Œnanthe crocata.
Opium.
Passiflora rubra.
Aconitum.
Flammula Jovis.
Lactuca ;
——— virosa !
Taraxacum.
Laurocerasus.
Laurus.
Colchicum ?
Nymphæa.
Rhododendron.
Liquor anodynus Hoffmanni.
Æther.
Stimulantia indirecta.
Antispasmodica fœtida.
Coffeæ baccæ empyreumaticæ.
Thea.
Astringentia ?

XIV. Attenuantia.

α. Diluentia.
Aqua.
Aquæ minerales.

β. Solventia.
Alkali.
Sales neutri.
Sapones.
Dulcia ?
Diæta insalubris.

XV. Inspissantia.

Acida mineralia ?
Alcohol ?
Astringentia ?
Evacuantia III IV ?
Demulcentia.
Tonica.
Siliquosæ

XVI. Alterantia.

Diaphoretica Diapnoica.
Diæta.

XVII. Demulcentia.

α. Mucilaginosa.
Asperifoliæ.
Consolida major.
Cynoglossum.
Pulmonaria.
Semina.
Cucurbitæ.
Citrulli.
Cucumeris.
Melonis.
Papaveris.
Gummi.
Icthyocolla.
Amylum.
Emollientia.

β. Dulcia.
Mel.
Uvæ passæ.
Ficus.
Cynosbatus.
Glycirrhiza.

XVIII. Antacida.

α. Astringentia.
Creta.
Osteocolla ; ?
Cancrorum chelæ & oculi ;
Cornu cervi ustum ?
Corallium rubrum ;
Ovorum testæ.
Ostreorum testæ.
Margaritæ :
Materia alimentaria valens.

β. Laxantia.
Alkali fixum & volatile ;
Sapo.
Tonica amara calida.

δ. Demulcentia.
Icthyocolla.
Amylum.
Gummi.

XIX. Antalkalina.

Acida vegetabilia.
——— mineralia.
Acetosa.
Acetosella.
Fructus acido dulces.
Vinum.
Diæta imbecilla.
Tonica astringentia.

XX. Antiseptica.

Acida vegetabilia & mineralia.

Diæta ex vegetabilibus.
Fructus acido dulces.
Siliquosæ herbæ & radices.
Semiflosculosæ herbæ.
Umbellatæ; ?
Alliaceæ.
Legumina.
Brassica fermentatione acida.
Byne.
Vinum.
Alcohol.
Tonica amara calida & astringentia.
Opium; ?
Olea essentialia.
—— empyreumatica?

XXI. Emollientia.

α. Oleosa.

Oleum olivæ.
——— seminis papaveris.
Spermaceti (adipocere).
Cremor & butyrum lactis.
Palmæ oleosæ.
Cocos butyracea.
Butyrum.
Axungia & sevum animalium.
Sapo.
Cera.

β. Farino-mucilaginosa.

Farina lini.
——— cannabis.
——— cydoniorum.
——— fœnugræci.
——— psilli.
Amylum.
Malva.
Althæa.
Branca ursina.
Melilotus.
Saponaria.
Liliorum alborum radices.
Cepæ.
Gummi arabicum.
——— tragacanthæ &c.

γ. Aquosa.

Aqua & vapores aquosæ.
Atriplex.
Beta.
Bonus Henricus.
Spinacea.

XXII. Erodentia.

α. Azoetica.

Sabina.
Euphorbia.
Gallæ.
Saccharum ustum.
Cevadilla.
Ranunculus. folia & radix.
Tithymelea.
Daphne laureola & mezereum.
Persicaria urens.
Flammula Jovis.
Toxicodendron.
Arum.
Arthanita.
Cantharides.

β. Solventia.

Argentum nitratum.
Antimonium muriatum.
Cuprum vitriolatum.
Hydrargyrus muriatus.
Calomelas.
Ærugo.
Arsenicum album.
Hydrargyrus nitratus ruber.
Calaminaris.
Kali purum.
——— cum calce viva.
Barytes?
Strontia?
Acida mineralia.
——— cum alkali alternata.
Unguentum hydrargyri nitrati.
——— Alynois viz. axungia cum acido nitrico.

XXIII. Astringentia.

Tonica astringentia & fossilia.
Externa
  Farina secalis avenæ & tritici.
  Linamentum siccum.
  Araneorum telæ.
  Lycoperdon.
  Agaricus chirurgorum.
  Vitriolum zinci cupri & ferri.
Plumbum acetatum.
Oleum terebinthinæ?
Erodentia!
Frigus.
Alcohol.

XXIV. Alexiteria.

Emollientia.
Emetica evacuantia.
Antidota.
  Arsenici.
    Kali sulphuratum.
  Opii.
    Acetum?
    Coffea;
    Castoreum;
  Alcohol.
    Lavatio frigida.
    Ammonia?
    Coffea.
  Acidi carbonici gazeosi.
    Lavatio frigida.
    Ammonia.
  Aeris nitrosi.
    Alkalina.
  Aeris azotici.
    Alcohol.
    Oxygenei gas.

XXV. Lithontriptica.

Sapo.
Kali, præcipue purum.
Mel;
Calx viva.
Amara calida.
Uva ursi.

XXVI. Anthelmintica.

α. Venenata.

Dolichos pubes leguminis.
Geoffrea. cortex.
Spigelia. radix.
Sabina. folia.
Lonicera marilandica. radix.
Ruta. folia.
Santonicum. semen.
Tanacetum. folia. flores.
Mezereum. cortex.
Nicotiana. folia. semen.
Filix mas. radix.
Abrotanum herba.
Absynthium. folia.
Nux juglans putamen & extractum.
Epidendrum claviculatum.
Anthora radix.
Abrotonum fœmina.
Asclepias curassavica.
Annonæ muricatæ sp. quatior.
Jatropha gossipifolia sp. tres.
Melia azedurach.
Helleborus fœtidus!
Spigelia marilandica.
Atropa mandragora. radix.
Lobelia. flores.
Oleum.
Hydrargyrus muriatus mitis.
Hydrogenium sulphuratum (gas).
Aquæ minerales sulphuratæ.
  Aqua Harrogatensis.
Aqua calcis.
    Barytis?
    Marina.
Nicotianæ fumus.
——— infusa pro enemate.
Stannum.
  Aurum musivum.
  Cum hydrargyro.
Oleum terebinthinæ.
Tonica amara calida & fossilia.
Astringentia narcotica.
Carica papaya. semen.

β. Evacuantia.

Cathartica drastica.
Aloes.
Emetica;
Vitriolum zinci.

From such an arrangement of the materia medica, and this subdivision of the classes, the young student, or the more discriminating inquirer, will, we think, find his labour greatly facilitated, as he will not be obliged to range through a muster-roll of names to attain the object of his search. It remains only to explain the foundation of these subdivisions.

EMETICS, though a class far from numerous, and of simple operation, yet require some distinctions. We do not always require full vomiting, and we sometimes want this action to produce a very sudden and violent change. It may be supposed that all emetics, in a less dose, will nauseate, or in a more active one give a sudden and violent shock; but ipecacuanha seldom produces sickness without vomiting, and squills will very seldom occasion a complete action of the stomach. Ipecacuanha also acts with no more violence in a large than a small dose, and mercurius vitriolatus is severe in its operation even in a small one.

Of CATHARTICS and the foundation of the distinctions we have already spoken; and these lead us to remark another advantage of the subdivisions, a more ready reference to the proper remedies in other parts of the catalogue. Drastic purgatives would be injurious as diuretics in nephritis, and mild ones very inefficient as anthelmintics.

There is certainly a very striking, and, in a practical view, a very important, distinction between the relaxant and the stimulant DIAPHORETICS. If we have been right in our views under this article, the *diapnoica* equally merit a selection. A view of the remedies included in the list will, at least, show the propriety of the distinction. It appeared, indeed, so strong, that in the first sketch of this article, made for a very different purpose, twenty-five years since, the alterantia were included in this class.

The *stimulant*, the *diluent*, and the *narcotic* DIURETICS are equally distinguishable. Perhaps the *salina* are not properly arranged with the stimulantia; but we were determined by the fact, that nitre, and some of the other neutrals, in large doses, produce pain in making water. They are, however, distinguished; the strontia and barytes are inserted with doubt and hesitation.

The division of the extensive and doubtful class of EXPECTORANTS is made from the nature of the medicines recommended. The first, however, act chiefly on the fauces; the second and third on the fever, except where employed in the form of gas or vesicular vapour. The fourth contains only the real expectorants; and of the whole subdivision there are few strictly such. Some of these are slightly astringent, and should have been separated to have marked them as frequently injurious, or at least only useful in a relaxed state of the glands. Of these the agrimony marked with a note of interrogation is the most hurtful; but the whole of the group must be used with caution when inflammation exists.

Dr. Cullen used to distinguish the ERRHINES according to their effects as irritants and evacuants; but we found it difficult to follow the idea on an extensive scale, and the whole, at last, seemed resolvable into their less or greater acrimony. At least this distinction is abundantly sufficient to assist our practice.

The division of SIALAGOGUES is sufficiently obvious. There is but one certain internal remedy of this kind, mercury. Yet, from the late experiments with the nitric acid in syphilis, there is some reason to suspect that it may have a similar power. The experience of others, however, has scarcely supported the suspicion, and it is consequently inserted with the mark of doubt. In the other list, though almost all the stimulants might have been inserted, those usually preferred are only enumerated.

In the class of EMMENAGOGUES it was necessary to distinguish those which stimulate the system in general, from those whose irritation is confined to the uterus, or whose action is of a different kind. The two first orders contain the general and topical stimulants: the two next the antispasmodics and tonics. All the medicines included in this class are employed, and the distinction will be amply explained under the article MENSES.

The STIMULANTIA have occasioned no little difficulty in the arrangements. The diffusibilia and the topica are chiefly distinguished in the Brunonian works; but as we have rejected the principles, we cannot be expected to adopt their consequences. We could not, however, wholly avoid them. Some stimulants are very general in their action, others confined to particular parts. Yet they pass into each other by such imperceptible shades, that we found it difficult to draw the line, and have passed with sufficient accuracy from the more general to the more partial stimulants. The *topica* are those chiefly of topical application. The insertion of the order *indirecta* appears to lean to the Brunonian doctrines, and we have explained their action to be of a sedative nature, producing an unequal excitement, and, in consequence, an apparent stimulus. Yet a work of this kind must not only contain the author's own opinions, but those of others: above all it is necessary to point out that some of these medicines are employed with success as active stimulants.

The REFRIGERANTIA are few and simple. The ANTISPASMODICA, as not connected with general effects, ought perhaps not to have been admitted as a class; but some complaisance is due to former authors, and the first subdivision cannot be referred to any general power. The subdivisions which follow sufficiently show that the power of destroying spasm very commonly depends on its cause.

TONICS are also with difficulty distinguished in their several subdivisions. The natural arrangement is into bitters joined with astringency, pure bitters, and the more pure astringents. Yet it is not easy in the practice, and we have preferred uniting the warm with the purer bitters, and distinguishing them from the narcotic bitters, for reasons which will be obvious on perusing the article AMARA. The subdivision *fossilia* requires an apology, since it does not point out their peculiar properties; but we could find no suitable appellation, as they have no sensible operation. The more pure astringents follow, which are also tonics.

The SEDANTIA are the *refrigerantia* or *narcotica*, and this division requires no remark. The ATTENUANTIA are merely diluents, or such medicines as enable the serosity to dissolve a larger proportion of the gluten. The *dulcia* are added on the authority of Dr. Stark, who confined himself to a saccharine diet, and, after some time, experienced all the symptoms of sea scurvy. Yet

these experiments must be admitted with hesitation, as his constitution, from a series of wanton trials, was previously much debilitated. Diæta insalubris, more strictly unalimentary, is founded on the instances which have occurred of the symptoms of scurvy from such diet; but it is not likely to be employed as a remedy.

The remedies included under the INSPISSANTIA show that it is highly improbable such a change could be produced by medicines. The remedies for scurvy and the tonics are the only probable means of correcting too great tenuity.

The ALTERANTIA contain, as already hinted, the *diaphoretica diapnoica*; and the only other remedy which we were able to introduce is *diæta*.

The subdivisions of the DEMULCENTIA and ANTACIDA are sufficiently obvious, and not very important, perhaps not chemically correct; but affected minuteness, or extreme accuracy, which would multiply trifling subdivisions, is certainly no improvement. The ANTALKALINA and ANTISEPTICA admit of no subdivisions; and those of the EMOLLIENTIA are sufficiently obvious.

The ERODENTIA are naturally divided into the *azoetica*, which destroy the life of a part, and the *solventia*, which consume it. Many of the latter act as azoetics; a term borrowed from the excellent syllabus of Dr. G. Pearson: but it is necessary only to point out the medicines usually employed with either view.

The ASTRINGENTIA are chiefly external remedies; for the internal astringents are enumerated, as already explained, under tonics. The ALEXITERIA, the antidotes, are chiefly those enumerated by authors. The only novelty is the antidote of nitrous air, inserted in consequence of a case lately recorded, where death ensued from a person having copiously inhaled the fumes of nitrous acid from a bottle bursting. From the symptoms it appeared that the oxygen had been separated in the system, and the acid appeared in every excreted fluid. Alkalis, in the first instance copiously taken, would probably have succeeded; and the best form would have been that of soap. The LITHONTRIPTICS and ANTHELMINTICS are those usually enumerated. The last class is peculiarly full, as it has been supposed that we have few medicines of this kind, and of uncertain efficacy. The fact is, that diseases are often attributed to worms when none exist, or when they are not in the slightest degree injurious.

We have thus completed a catalogue of the materia medica on a new plan, more full and complete, we trust, than any yet communicated to the public in general. Its errors may be numerous; but they have not arisen from want of attention, of labour, or observation. Many large works have perhaps cost less pains than the compilation of these few pages.

Murray Apparatus Medicaminum; Gmelin's Continuation of Murray; Lewis, Cullen, Geoffroy, Linnæus, Bergius, Spielman, Vogel, and Cartheuser's Materia Medica; Duncan's New Edinburgh Dispensatory; Dr. G. Pearson's very extensive and valuable Syllabus.

MATE'RIA MERCU'RII SA'LIS. See CIRCULATUM.

MATERIATU'RA. INTEMPERATURE. Castellus.

MATHÆI PI'LULÆ. MATHEWS'S PILL. Starkey was its author, but it was sold by Mathews for him as an universal medicine. It consisted of the soap of tartar, black hellebore, opium, &c.

MATLOCK WATERS are found at the place from whence they take their name in the county of Derby, where there are a great number of warm springs, which, according to Dr. Short, acquire their heat by passing through a bed of lime, and what he calls *croil-stone*. The water of the bath, and all the other tepid springs, is exceedingly clear, has no steam except in cold weather, and does not throw up bubbles: it is about a dram in the pint lighter than common water.

A gallon of this water contains about thirty-seven or thirty-eight grains of solid matter, twelve or thirteen grains of which are sea-salt, with vitriolated magnesia, the rest calcareous earth, which after calcination, contained some particles attracted by the load-stone. This water seems, therefore, to be a light chalybeate of a tepid temperature, containing but a small portion of solid matter, and is used in the diseases for which Bristol waters have been recommended; externally for the gout, rheumatism, and other complaints, where a tepid bath has been found serviceable. It is drank from one to four or five pints in the day.

MATRA'CIUM. See CUCURBITA.

MA'TRES. The two membranes of the brain, the PIA and DURA MATER, supposed to be the origin of all the other membranes. (See DURA MATER.) In botany, the artemisia is the *mater herbarum*; in chemistry quicksilver is the *mater metallorum*.

MATRICA'LIA, (from *matrix*). Medicines appropriated to disorders of the uterus.

MATRICA'RIA; *parthenium. febrifuga, metricaria*, from *matrix*. COMMON FEVERFEW, FEATHERFEW, or FEBRIFUGE, *matricaria parthenium* Lin. Sp. Pl. 1255.

This plant hath firm branched stalks and roughish leaves, each of which is composed of two or three pairs of indented oval segments, set on a middle rib, with an odd one at the end, cut into three lobes; the flowers stand on the tops in the form of an umbel, consisting each of a number of short white petals set round a yellow disk, followed by small striated seeds. It is perennial, grows wild in hedges, in cultivated places, and flowers in June.

The leaves and flowers have a strong, not agreeable, smell, with a bitterish taste, both which they communicate to water and spirit. On distilling a large quantity of the herb, a yellowish strong-scented essential oil is found on the surface of the water: rectified spirit carries off but little of its flavour in evaporation. The spirituous extract contains a large share of the virtues of the plant, which is esteemed as a warm aperient, carminative, and bitter. It resembles, in sensible qualities and botanical affinities, the camomile, and keeps its virtues for several years. Its oil is called *ol. partheniacum*. See Raii Historia; Lewis's Materia Medica; Neumann's Chemical Works.

MATRISY'LVA. See ASPERULA and CAPRIFOLIUM.

MA'TRIX, (from *mater, the mother*). See UTERUS, and MEDITULLIUM.

MATURA'NTIA, (from *maturo, to ripen*). See SUPPURANTIA.

MAU. See MANGA.

MAUROMA'RSON. See MARRUBIUM.

MAXI'LLA, (from *μασσαω, to chew*), *mandibula*. The CHEEK or the JAW. See BUCCÆ.

MAXI'LLA INFERI'OR, *mola*. The LOWER JAW is situated at the lower part of the face; divided into the chin, sides, and processes. The chin is the anterior middle part; the sides are continued beyond the chin, till the bone, bending upwards, forms the processes. On the middle part of the chin externally there is a transverse ridge, on each side of which the quadrati, or depressores labii inferiores, and the elevatores labii inferiores, hollow out the bone, and are lodged in the furrow. On the internal part of the chin are three protuberances, to the uppermost of which the frænum linguæ is tied. From the middle protuberance the genioglossi arise; and from the lowest the genio-hyoidei: below the last the digastric muscles are attached to two sinuosities; and at the lower and anterior external part of each side of the maxilla inferior there is a small protuberance, whence the depressor labiorum communis proceeds: and nearer the upper edge is a longitudinal ridge, where the buccinator is inserted; inwardly, towards the superior edge of each side, is a ridge, whence the mylo-hyoidei rise. The lower edge of the chin and sides are smooth, and are called the base of the lower jaw, the extremities of which are named the angles: the outer surface of these angles hath several inequalities where the masseter is inserted, and the inner surface where the pterygoideus internus is attached.

The anterior sharp process is called *coronoides apophysis maxillæ*, round which the temporal muscle is inserted; and the posterior process is called *condyloid*, which is received into the glenoid cavity of the os temporis. The upper part, where the teeth are inserted, is called the *alveolar process*.

The foramina are two on each side, one near the root of the processus internally, where a branch of the fifth pair of nerves with an artery and a vein enters; the other, external, at the edge of the chin, where the nerve and the vessels come out.

MAXI'LLA SUPE'RIOR, the UPPER JAW, is composed of thirteen bones, viz. the ossa nasi, unguis, malarum, maxillaria, palati, spongiosa inferiora, or turbinata inferiora, and the vomer.

The diseases of the maxilla are chiefly those of the sinuses, and in these worms have been sometimes found; but they are more commonly receptacles of purulent matter. They are sometimes the seat of fistulous ulcers, occasionally of a destructive fungus or cancer, and often of a caries, which happens in some instances after measles or small pox. Matter is let out by drawing the first or second molar tooth, and we recollect, among Gooch's cases, one in which it was discharged by puncturing the cheek. In the Ephemerides Naturæ Curiosorum is an instance of a total separation of the lower jaw which the man survived. See LUXATIO and FRACTURA.

MAXILLA'RES SI'NUS, (from *maxilla, the jaw*). The MAXILLARY SINUSES are lined with a glandular membrane, which secretes a mucilage very different from that of the joints.

MAXILLA'RES GLA'NDULÆ. The MAXILLARY GLANDS. Each is placed between the angle of the lower jaw and the os hyoides, and fills up the space between the belly of the digastric muscle and the pterygoideus internus at the angle of the jaw. The anterior edge lies over the muscle called *mylo-hyoidæus*, from whence arises its duct, running close under the membrane of the mouth, and by the side of the sublingual. Each opens at an angle, close by the frænum of the tongue, just behind the incisores. The duct runs from its upper anterior part, on the outside of the genioglossi, and the inside of the sublingual, and opens near the frænum linguæ.

MAXILLA'RIA SUPERIO'RA O'SSA. These form the greatest part of the uppper jaw. That long process, which, rising from its superior and anterior part, grows smaller as it proceeds upwards, to make the side of the nose, is called the nasal process. The alveolar process is that spongy part where the sockets for the teeth are formed. The palatine process forms a great part of the basis of the nostrils, and the roof of the mouth. The orbiter process is very irregular: from its superior and anterior part, to near the extremity of the nasal process, a ridge proceeds which forms about one-third of the outward circumference of the orbit. The bodies of the superior maxillary bones are entirely hollow, and in each is a large sinus, called ANTRUM HIGHMORIANUM, q. v.

MAXILLA'RIÆ ARTE'RIÆ. The MAXILLARY ARTERIES. The external artery, also called the genial and angular artery, is a branch from the external carotid. It runs to the basis of the lower jaw, close to the attachment of the masseter, and gives a branch to the maxillary gland. Passing over the lower jaw, it goes upon the buccinator, gives a branch to the lower lip, which anastomoses with that on the other side, and is continued to the upper lip, where it also anastomoses; there they are called labial arteries. The external maxillary then gives off branches to the nose, goes to the inner canthus of the eye, is lost upon the forehead, communicating, in that part, with the temporal artery.

The internal maxillary artery is a branch from the external carotid, rising at the origin of the temporal, and distributed to both the jaws: it is very much convoluted, and gives branches to the deep-seated parts; one branch runs through the lower jaw, called the inferior maxillary artery; but the main trunk runs up to the foramen, lacerum inferius, at the bottom of the orbit, winds round the antrum, and sinks into the nose behind the upper maxillary bone, and before the pterygoid process of the os sphenoides, to be lost on the inside of the nose.

MAXILLA'RIS INFE'RIOR NE'RVUS, *ramus inferior*, is the third branch of the fifth pair of nerves. It passes through the foramen ovale of the os sphenoides, where it gives off several branches to the muscles of the lower jaw, then throws a remarkable branch through the lower jaw to supply the teeth, which comes out at the anterior part of the channel, and branches upon the lip. From this a capital branch is detached to the tongue, called the lingual, which runs between the two pterygoid muscles, and passes to the top of the tongue, going with the duct of the maxillary gland. From this the chorda tympani is derived. See TRIGEMINI.

MAXILLA'RIS SUPE'RIOR NE'RVUS. The UPPER MAXILLARY NERVE is the second branch of the fifth pair. It passes through the foramen rotundum of the os sphenoides, where it throws off a branch to the palate; but the trunk passes on in the sulcus of the upper

maxillary bone, goes to the upper jaw, and to its antrum. It then comes out below the orbit, and is diffused upon the face, particularly upon the nose, the upper lip, and cheek. See TRIGEMINI.

MAYS is a kind of Indian wheat. See CEREALIA.

MEATUS, (from *meo, to pass*), a DUCT, PASSAGE, or any open canal. The auditory passage is the *meatus auditorius*; the Eustachian tube *meatus à palato ad aurem*; the urethra *meatus urinarius*; the ducts which convey the bile from the gall-bladder to the duodenum the *meatus cystici*.

MEA'TUS AUDITO'RIUS EXTERNUS is the external passage to the ear, beginning at the hollow of the outer ear, and ending at the drum. It was formerly a name for the Eustachian tube. See AURICULA.

MEA'TUS CÆ'CUS. See TUBA EUSTACHIANA.

MECAPA'TLI. The American name for one of the species of sarsaparilla.

ME'CCHA, BALS. See BALSAMUM.

MECHOACA'NA A'LBA, (from *Mechoachan*, a province in Mexico, whence it was brought). *Rhabarbarum album, convolvulus Americanus, jalapa alba, bryonia alba Peruviana, mechoacan*. It is the root of an American species of convolvulus, chiefly brought from a province in Mexico; but its flower has not been so accurately described as to enable us to ascertain strictly to what genus it belongs. In the later works of Linnæus it has been referred to the genus convolvulus, with the trivial name of *mechoacana*, but with no peculiar precision. It is cut into thin transverse slices, like jalap; but is larger, whiter, and softer. This root was first brought into Europe in 1524, as a mild cathartic, which having but little taste or smell, was thought not to offend the stomach; but the common jalap hath superseded its use. The *phytolacca decandria* Lin. Sp. Pl. 630, furnishes the *Canadian mechoacana*. See Raii Historia; Tournefort's Materia Medica.

MECHOAC'ANA NI'GRA. A name of the jalap in common use. (See JALAPA.) The Brasilians call it *jetecucu*.

ME'CON, (from μηκος, *bulk*; from the largeness of its head). See PAPAVER.

MECO'NIS and MECO'NIUM, (from μηκων, *the poppy*). See PEPLION.

MECO'NIO, (Syr. e.), (from the same). See PAPAVER ALBUM.

MECO'NIUM, (from the same). Opium is the juice flowing from the poppy head through artificial incisions; but meconium is the juice of the whole plant, first bruised, then pressed out. The excrement also contained in the intestines of a newly born infant, which has obtained its name from this resemblance to opium. See INFANS.

MEDE'NA. A species of ulcer. Paracelsus.

MEDE'NA VE'NA; the same with *medinensis vena*. Castellus.

MEDIA'NA VE'NA, (from *medius, middle*). A remarkable vein on the inside of the flexure of the cubit, between the cephalic and basilic veins, called by the Arabians *funis brachii*. It is frequently opened in bleeding.

MEDIA'NA CEPHA'LICA, (from the same). See CEPHALICA MEDIANA.

MEDIA'NUM, (from the same). See MEDIASTINUM.

MEDIA'NUS, (from the same). See CERVICALES.

MEDIASTI'NA, (from the same). See INFLAMMATIO MEDIASTINI.

MEDIASTI'NÆ ARTE'RIÆ, (from the same). The arteries of the mediastinum arise from the subclavian, and are spread on the mediastinum.

MEDIASTI'NÆ VE'NÆ, (from the same). The right vein of the mediastinum comes out from the trunk of the superior vena cava anterior, a little above the azygos; the left from the subclavia.

MEDIASTI'NUM, (from the same), *medianum*, is the membrane called the pleura, which, after covering the internal surface of the chest, rises from the spine, and is reflected on each side to cover the lungs. This double membrane between each lobe divides the chest into two cavities. It is commonly said, that at the sternum there is a cavity betwixt the laminæ of the mediastinum, and that any matter may be discharged, if lodged there, by a perforation through the middle of that bone. This operation, however, if really required, would be very uncertain; for the mediastinum does not commonly terminate along the middle of the inside of the sternum, but from above, all the way down it inclines to the left side; so that, if an instrument was thrust through the middle of the sternum, it would pass near an inch on one side of the membrane.

The mediastinum contains in its duplicature the heart, the pericardium, the vena cava, and the œsophagus.

MEDICAMENTA'RIA, (from *medicamentum, medicine*), PHARMACY, is the art of making and preparing medicines, sometimes of preparing poison. Pharmacy hath been distinguished into *chemical* and *galenical*. The first consists of those operations in which fire was the chief medium, for the purpose of separating different ingredients of a compound, or combining different substances into one form; each supposed to differ in qualities from the body which afforded them, or from the substances thus combined. The second consisted in altering the form or texture of simples, so as to render them fit to be taken, or applied, without attempting any change in their qualities; and in uniting them in compositions of various forms, where each simple was supposed to retain its original properties. But these distinctions have been long neglected.

The operations in pharmacy may be reduced to these four kinds:

1. *Commensuration*, or the adjustment of quantities, necessary for the due administration of simple and compound medicines, as well as for the formation of those very compounds.

2. *Change of form*, or *texture*, often requisite, both for the convenient administering of simples, and forming compounds. The instances in which this is practised are for the reduction of solid cohering bodies to powder, and of those that partake both of solid and fluid into pulp; for converting salts, and other soluble bodies, to fluidity; and, in other cases, the restoring them when fluid to their solid state. The several particular operations by which these changes are produced have been styled trituration, calcination, solution, exsiccation, and crystalisation.

3. *Extraction* or *separation*, in a general sense, not confined to the making extracts of the gums and resins

of vegetables. The different elements of many compound bodies having qualities and powers, when separate and pure, which they are incapable of exerting when their force is suppresed by the quantity or counteracted by the repugnant qualities of the other component parts, are by this means obtained, as acid spirits, testaceous earths, &c.

4. *Composition* is either simple mixture or chemical combination. In the first the different species are intended to act, each according to its own nature, without producing any mutual change of, or alteration in, each other. But this is the less important kind of composition, as single simples will often answer the end of such composition. The second produces many efficacious remedies, which have no adequate substitutes obtained by other means; as the preparations of quicksilver, antimony, saline substances, &c. in which a new compound is produced, differing in its nature and efficacy from any of its component parts.

To execute these several intentions, a variety of methods and proper instruments are employed; hence the terms calcination, crystalisation, corrosion, depuration, digestion, distillation, expression, exsiccation fermentation, fusion, incorporation, precipitation, pulverisation, solution, sublimation, &c.

The means of effecting pharmaceutic operations are of two kinds, viz. chemical and mechanical. By chemical are meant the natural media by which bodies can act on, and produce a change in, each other, not explicable from the known general properties of matter, or laws of motion. By mechanical, artificial instruments. For brevity sake, in speaking of these two kinds, the first is called media, the latter instruments. See PHARMACIA.

MEDICA'MENTA EXTEMPORA'NEA, (from *medico, to heal*). *Magistralia*, compositions prescribed by the physician, according to the circumstances of the patient, and made up for this purpose only. A variety of these are found in some Pharmacopœias, under the title of extemporaneous medicines, and all the compounds of practice chiefly consist of them. These are the resources of ignorance and idleness: with these the fashionable practitioner provides himself, and prescribes to the name of a disease, with little knowledge of its nature or that of the remedy. To discountenance such impositions on a credulous public, who contentedly employ every one who calls himself a physician, we have seldom added formulæ, and shall not insert any, unless stronger reasons than at present occur to us should be offered. See FORMULÆ.

MEDICAMENTO'SUS LA'PIS, (from *medicamentum, medicine*). The MEDICINAL STONE, which consists of litharge bole and alum, of each ℔ss. colcothar of vitriol ℥iij. vinegar ℔ij. m. evaporated to hardness, formerly used in collyria, &c. as an astringent.

MEDICAME'NTUM, (from *medeor, to heal*). A MEDICINE has been styled any substance capable of changing the state of the solids and fluids of the human body, so as to prevent the increase of disease, or restore health. This definition is, however, both erroneous and imperfect. Terror will prevent a fit of epilepsy or the attack of an intermittent. Sailing will produce a salutary discharge from the stomach, while neither changes the state of the solids or fluids. It is, indeed, by no means clear that any medicine, except those employed in the cure of chronic diseases, produces any considerable change in either; and we have found, when we spoke of the arrangement of the articles of the materia medica, that medicines chiefly altered the functions of the body, or the balance of the circulation. The definition seems to have been chiefly intended to distinguish medicines from aliment on the one side, and from poisons on the other. The former was supposed to add to the bulk, or to repair the unavoidable losses; the latter to destroy life. Aliment, however, properly regulated, often removes diseases, and the most virulent poisons in smaller doses are very useful remedies; so true is the canon of Linnæus, that "medicines differ from poisons, not in their nature, but their doses."

Though we have treated of the different methods of investigating the power of medicines, it must still be acknowledged that we owe our knowledge of the most powerful remedies to chance, or to the pursuit of objects very different from the results which have been experienced. Chemistry, it is said, has elaborated many remedies, but discovered none. Yet in the pursuit of the imaginary elixir, to prolong life to an indefinite term, some medicines have been discovered, though among these we can neither reckon mercury nor antimony, whose powers were elicited by chance. A happy boldness, or a random experiment, has often added essentially to our stock; but inductive reasoning has only contributed to correct the hasty views of the indiscreet, or to regulate the eagerness of the too sanguine experimentalist.

Modern practice employs few remedies. Yet, as we have more than once shown, simplicity of prescription is the delusive meteor that has sometimes led us astray. (See COMBINATION OF MEDICINES.) In general, however, we agree with an author, whose name has escaped us, that long formulæ are proofs of either ignorance or deceit.

It has been doubted whether there are any specific medicines. As usual, the question requires only to be explained to approach at least to a decision. If it be meant whether a specific stimulus exists, the position must be granted. If, then, there be such, the medicine which possesses this stimulus is, to a certain degree, a specific; but if it be meant whether any medicine can cure a disease by such peculiar inherent powers as are neither warranted by its general properties, or our knowledge of the nature of the complaint, we must hesitate in our answer. The number of supposed specifics, by a more careful investigation, have not been found peculiarly powerful in the disease to which they were supposed to be exclusively adapted; and we have only left on the list the peruvian bark and mercury in intermittents and the lues venerea. The former, however, has now lost this proportion of its credit, since other tonics, particularly the arsenic, is found of equal or superior efficacy. The pretensions of mercury to the character of a specific we have lately investigated (see LUES); and when we consider the history of the numerous individuals supposed to belong to this class, we are disposed to conclude, that, as usual, ignorance is the parent of our admiration. Had we any medicine of efficacy to compare with mercury we should discover its relations, and, of course, the cause of its general utility. We have made some steps in this inquiry in the article just quoted.

Universal medicines are now only seen in the columns of a newspaper, or a quack-bill. The numberless inconsistent qualities attributed to a patent medicine would almost fix it in this rank; but its real utility is soon seen, if we trace the leading diseases for which it is recommended; and we then find it a common medicine decorated with a pompous title, if it be not an inefficient compound, whose sole merit lies in its name, in its extravagant recommendations, and the credulity and folly of those whose abilities, if exerted, would soon point out the fallacy. See QUACKS and QUACK MEDICINES.

The various distinctions of medicines into general and topical, curative, palliative, or preservative, are sufficiently obvious, though little attended to at present, as the same medicine is now often used with each view. The bark, for instance, is a palliative in restraining the colliquative sweats in hectics, a preservative during the progress of a highly putrid epidemic, and a curative in intermittents.

MEDICI'NA (from *medeor, to heal*). MEDICINE. The history of the science which is the chief object of our work must necessarily detain us for some time; yet to avoid an article of an extremely disproportioned length, we have broken it in a manner already explained, and shall, in the references at the end, collect the scattered limbs, so as to form one whole. At present, we must examine the history and the progress of medicine; and if, for ages, we find reason to lament its slow advance towards improvement, if we sometimes find it stationary, and occasionally even retrograde, the causes will furnish abundant proof of the imbecility of our boasted reason, of the vast extent of science, of the limited powers of human intellect.

It would be idle to trace at length the probable origin of medicine, or determine whether it be the result of random experiment, of imitation from observing the instinct of brutes, or of divine inspiration. Disease is the lot of humanity; and remedies, or at least attempts to relieve, must be coeval with disordered functions. The obvious means of procuring relief was to expose the patient in the streets, and to obtain, if possible, the advantage of greater sagacity, or more extensive experience; and when either a natural sagacity and opportunities of observation were combined with a ready recollection, they constituted the physician of rude ages, as they often constitute one at the present moment. Priests, as possessing greater leisure and more frequent opportunities of observation, were probably the first medical practitioners, and the most successful physicians were soon deified. Superstition gradually mixed in the scene, and dreams in the temples of the gods, or incantations and amulets, soon corrupted the few lights which experience had suggested. Yet however superstition or design may have corrupted the fountains, the stream was preserved with tolerable purity by the means of the temples; for these were the receptacles of the earliest records, the histories of cases recorded by the patients, and from the temples of Æsculapius Hippocrates is supposed to have drawn his best observations. We owe only to a sarcasm of a later era one of the remedies of the sacred fane, viz. the fat of pork in consumptive cases; and of all animal foods this is perhaps the least injurious in such cases.

To the Egyptians medicine, with every other science, is said to be chiefly indebted; and we are told, with a triumphant confidence, of their *Thoth*, who was probably only an allegorical personage, and of *Isis*, perhaps only a regal title. *Horus* the son of Isis, the Apollo of the Greeks, was seemingly a real person; but of his acquisitions in medicine we know nothing except from the claims of his adopting parents; who have mixed them too copiously with fable to enable us to discriminate their true value. The real knowledge of the Egyptians in medicine it is not easy to appreciate; for, as we have remarked (see CHIRURGIA), Prosper Alpinus wrote in a period when the later improvements had been carried to Egypt. Blumenbach has however shown, that the process of embalming was hastily and rudely conducted; and we cannot attribute any scientific knowledge of medicine to those who confined the management of each disorder to a single family, a single disease to one practitioner, and limited by law the use of medicine to a definite period of the complaint. It is said we are indebted to them for the use of clysters; but it is more certain that they excelled in prognostics, which must be the result of careful observation. This talent Galen, while he highly commends, attributes to astrology. Their remedies were chiefly diætetic, if we except perhaps the nepenthe. The medical knowledge of the Chinese, the Israelites, and the Brachmans, need not detain us. Among each it was inconsiderable; and the chief merits of the first seem to have consisted in punctures with needles; of the second in distinctions between clean and unclean beasts; and of the third in botanical knowledge.

The early Grecian medicine was chiefly chirurgical; and though we hear of internal remedies, yet we have no clue to guide us respecting their nature, as the assertions of some authors nearer the period of their introduction are contradicted by others. Amidst the darkness of the fabulous ages we must acknowledge that the baths of *Hecate, Circe,* and *Medea*, seem to show some knowledge of the powers of vegetables externally employed; and the tale of the poisoned shirt of Deianira equally implies the knowledge of deleterious plants, even if some of the circumstances in Medea's story should be wholly fabulous.

The events of the Trojan war, which called for the interposition of art, were chiefly, if not exclusively, external injuries; and there is a very slight foundation for supposing, from the language of Homer, that internal medicines were at any time exhibited. Nepenthe was almost the only instance, for the moly was an amulet. If the temples of *Philostratus* were at a subsequent period crowded with votaries, who sought his aid in consumptions, dropsies, intermittents, and diseases of the eyes, we must rather attribute the removal of the complaints to the arts of the priests or the credulity of the votaries, than to the interference of the deceased hero, who is not represented as having possessed any medicinal powers. *Æsculapius*, who accompanied the Argonauts, is not mentioned in the Iliad, so that he probably died in the interval; but his fame was preserved in his temples, where the artifices of the priests in choosing a healthy spot shaded with trees, and combining various species of amusement, contributed perhaps more to the patient's recovery than their medicines.

The *Asclepiadæ* seem never, before the time of Hip-

pocrates, to have practised beyond the confines of their temples: but they had various schools, of which the Coan and the Gnidian were the chief. Their anatomical knowledge, of which they boasted, was rude and incorrect; their practice we can scarcely judge of from the different application of their terms. We should suppose them to have employed drastic purgatives, since they used the elaterium and the grana Gnidia. Yet we learn from Dioscorides how much the ancient elaterium differed from ours, and the κοκκοι, or *grana Gnidia* may, as the word implies, have been only pills. The *Coan and Gnidian schools* were however the chief rivals, and the Gnidian sentences, the compilation of Euryphon, of an age somewhat anterior to that of Hippocrates, is severely criticised by the latter. He complains of the little attention which the Gnidian school paid to the observation of diseases; of the severity of their remedies; their unreasonably increasing the number of diseases, and the little attention they inculcated respecting diet. The only distinguished author of this school known to us is Ctesias, and, from his works, some fragments are preserved.

Of the *Rhodian and Italian schools*, established by the descendants or priests of Æsculapius, we have few remains: of the existence of the latter we find only some imperfect hints in Galen. The former was more distinguished, but its remaining vestiges are few. The medals bear a branch of Balaustines; but this mark is rather referable to the arts than to medicine, as the plant was then almost exclusively used in dyeing.

The fame of these schools and of the philosophers, for medicine seems hitherto to have been cultivated only as a branch of philosophy, was soon eclipsed by *Hippocrates*, who seems to have been the first to whom the appellation of physician, in its modern acceptation, is due. He first separated it from philosophy, gave it the form of a distinct science, and personally observed the progress of diseases, as well as the effects of remedies; on this account he is styled the inventor of the medicina clinica. Yet perhaps the philosophers who preceded him must not be wholly omitted. We are reminded of *Pythagorus* by the Climacterics, by the Critical days, and his recommendation of the vinegar of squills, in deafness; of his scholar *Alcmæon*, who first described the eye; of Empedocles, who, before any other anatomist, dissected with accuracy the ear; and of Timæus Locrus, who taught that the nervous system was the basis of the whole body, on which the nutritious substance was gradually extended. *Democritus* was rather a philosopher and a chemist than a physician, and might have ranked with credit in each class were the various hints of his labours collected.

Of Hippocrates it is difficult to speak with impartiality in a manner that will satisfy his warm admirers, or those who reject every thing which is not of a modern æra. If we look at him as a physician, when medicine had scarcely escaped from the trammels of superstition, the refinements of philosophy, or the dictates of antiquated tradition, our admiration will rise almost to enthusiasm; for we shall perceive sound judgment, accuracy of reasoning, and acuteness of observation, superior to his æra, or the state of science at that period. But to study and admire Hippocrates at this time is very different. Science has opened newer and more extensive views; diseases are distinguished with greater accuracy; and the remedies, as they are more numerous, may be more appropriately adapted to the circumstances. If we find a striking description in Hippocrates, we admire it as a mark of superior genius, and wonder how the same event could have happened both in Greece and England. Yet strip the fact of the disguise of system, and it will be found that patient observation would alone have taught it. He fills, however, so vast a space in the medical scene, that some further notice of him and his doctrines will be necessary.

Hippocrates was born in the first year of the 80th Olympiad, 460 years before the birth of Christ, and was descended from a line of physicians, inheriting the instructions of his father and grandfather, themselves descendants from the Asclepiadæ, while his mother traced her origin from the Heraclidæ. He died at Larissa, it is said, at the age of ninety. He first practised physic at Thasus, afterwards at Abdera, and at last in Thessaly; but his chief residence was at Cos, whence the Coan school became for a long time the successful rival of the Gnidian. All that has been added to these few events is doubtful. That his instructors were Herodicus (or Prodicus) and Democritus, rests only on the attention which he has paid to the gymnastic art, as well as to anatomy; and the philosophy of Hippocrates is more nearly allied to the tenets of Heraclitus than of the Abderite. As Hippocrates was a great traveller, he might have attended the lessons of Prodicus in Athens, where he chiefly taught, and might there have been acquainted with his brother Gorgias, whom he afterwards attended in his medical capacity in Thessaly, when worn down with old age; but we have no records of his having ever practised at Athens.

The other tales either to his honour or discredit are too idle to detain us. Had he violated or burnt a temple, Greece could have afforded him no asylum. Had he been greatly instrumental in relieving those affected with the plague at Athens, Thucydides could not have stated that medicine was of no advantage in that epidemic. The oration of Thessalus the son of Hippocrates on the subject of the honours decreed to him, must be spurious; for at that time the sage was but thirty-one years old. The request of Artaxerxes, which he is said to have refused, is also wholly inconsistent with the crime supposed to have driven him from Cos. The tale of his being sent to Democritus by the inhabitants of Abdera seems only one of the many sneers the stupidity of the Abderites scattered in ancient history; and Reland has shown, that the imputed letter was written by Epictetus. The time of his death is equally uncertain.

Under the name of Hippocrates we have received works of very different value. Those of his predecessors and successors are confounded with his, partly from his having appropriated some of their remarks, in part from the high character he had acquired; and from several of his descendants having retained his name. The chief cause, however, of the many spurious works attributed to him, is the avarice of the collectors of Ptolemy, who, when he founded the library of Alexandria, endeavoured to obtain, at the most extravagant rates, the works of every author of reputation. Every thing under the name of Hippocrates was eagerly received, and it was thought of little importance whether they proceeded from the first, second, or third

of that name: the reports were not sifted with minute discrimination. To distinguish the real works of Hippocrates has been consequently a problem of no little difficulty. At the expiration of 500 years, this task was attempted by Galen, who, to an intimate knowledge of what the successors of Hippocrates had written, possessed a discriminating genius, and a critical discernment of the style and manner of the Coan sage, which peculiarly fitted him for the task. Mercurialis, a man of the most extensive erudition, Haller, a physician of vast information, capable of the most incredible labour, and Gruner, possessed of all the indefatigable diligence of his nation, have laboured in the same field. They have assumed, as a principle, that Hippocrates was a man of singular abilities, extensive information, consummate candour, and modesty. By these tests they have tried every imputed work. Though perhaps the principles might not be readily conceded, yet, as they will certainly point out to our attention the most valuable works, we shall give the result of their labours.

The undisputed works of Hippocrates are said to be the first and third book of the EPIDEMICS; two books of the PRÆNOTIONES (a different work from the Prænotiones Coacæ, published by Elzevir in 1660, by Duretus at Paris, and with commentaries by Hollerius at Leyden, which is very certainly spurious), containing the Prognostics, and the second book of the Prorrhetica; *De Diæta in Acutis*, in opposition to the Gnidian sentences; the *Aphorismi; De Aere, Aquis & Locis; De Natura Hominis; De Humoribus Purgandis; De Alimento; De Articulis; De Fracturis; De Capitis Vulneribus; De Officina Medici; De Locis in Homine*. This is nearly the enumeration of Haller; but Galen and Haller seem to have admitted tracts among the Hippocratic works, with too great facility. Gruner, who like Haller considered brevity, gravity, and the absence of theoretical reasonings to be the true test of the genuine writings of Hippocrates, differs in the application. He admits the *oath*, but rejects the treatise, *De Natura Hominis, De Locis in Homine, De Humoribus, De Alimento, & De Articulis*. Whether the *oath* be admitted or rejected, is of little importance; since it must be considered rather as an object of curiosity than of utility. The first of these rejected works was admitted, with hesitation, by Galen and Mercurialis, as containing many passages very distant from the manner and doctrines of Hippocrates; but it was retained, as containing some facts of importance. The second, though admitted by Galen and Cælius, and though it agrees, in general, with the practice of Hippocrates, has been suspected on account of some passages of a very different description. Haller only asserts that it *may* be his work; and Mercurialis, who ascribes it to Hippocrates, thinks that he did not live to complete it.

Gruner and Mercurialis reject the tract *De Humoribus*, but add, that it merits attention. It has been indeed commended in every age, and illustrated with commentaries by Galen, Duretus, and Gunzius. The tract on Aliment, on the contrary, imitates only the terseness of Hippocrates, but betrays the author to be of a later æra, by the doctrines respecting the arteries and veins. The book on the Joints is evidently the work of Hippocrates, or, at least, of the author of the tract De Fracturis, and universally admitted. It contains also an account of the luxation of the thigh, which the history of medicine uniformly attributes to Hippocrates, by recording a controversy between him and Ctesias on this subject.

Yet even the undisputed works of Hippocrates must be received with some hesitation. The criteria by which they are decided are, we have said, not infallible; for they assume a degree of uniform excellence, which perhaps few have possessed. The tract De Aere, Aquis et Locis, shows the author to have been an European; and various passages, even in the most genuine works, may be adduced to prove that interpolations have crept in. Where then can we draw the line? or need the line be drawn?

We have enlarged on this part of the subject to add the only conclusion which can be admitted, that the undisputed works of Hippocrates show rather the state of medicine in the earliest eras than form what may be styled the system of an individual. They are therefore objects of curiosity, rather than use; for the most important facts are scattered in a variety of modern works, and within the reach of the greater number of readers. Yet the writings of Hippocrates merit attention. Where the title of doctor is assumed merely as a claim to receive the fee of a physician, it is of little importance whether the practitioner can read: the world is contented to take his talents on trust; but the man who claims the rank of a regular, well-instructed, physician, should not be ignorant of the language of Hippocrates, or of the state of physic at the earliest period of recorded observations. He will derive no little satisfaction from the polished terseness of the Hippocratic language, from the candid relation of facts, whether favourable or otherwise, from the firm undeviating integrity, which seems to have regulated the conduct of this father of medicine.

We have been led also to this inquiry from other views. Various are the authors who have treated of Hippocrates and his system, without knowing that, in the same volume, works most unworthy of any author of credit were confounded under his name. Each has been quoted with the same indiscriminate complacency, and it may be easily conceived what a motley mixture must be the result. Having thus pointed out where his real sentiments may be found, we shall very shortly point out what they apparently were.

The tenet of Hippocrates, that a knowledge of nature is the first principle in medicine, has been quoted with great zeal, to prove that he who saw this position in so strong a light must have been acquainted with the structure and the functions of the body. Yet even this axiom seems not to have been suggested by Hippocrates, as it occurs in one of his doubtful works. That nature preserves health and cures diseases is a tenet more obvious, and must have often occurred in a practice so inert as that of the Coan sage. His anatomical knowledge was inconsiderable. In his work on the bones, one of doubtful authority, he describes the spine as consisting of twenty vertebræ only. The error is indeed corrected towards the end, but apparently by another hand. The vesiculæ seminales are expressly described as a series of vesicles on each side of the bladder. This fact has been quoted to show that he dissected human bodies; but the tract, in which the observation occurs, is pronounced to be spurious, even by Galen. That Hippocrates was acquainted with the circulation of the

blood, as some authors have contended, no longer requires a single remark.

Though his genuine account of the structure of the genital organs is confessedly incorrect, yet his ideas that the male and female semen are mixed in conception, that the sex is determined by the most powerful, and that, if the semen escapes from the female, impregnation is prevented, are principles still supported by many physiologists, and are, on the whole, highly probable. The reciprocal action of the warm and cold spirit, in promoting the growth of the fœtus, is wholly imaginary. The soul, he supposes, is drawn in with the air; not with air as such, but as a vehicle of water and fire, and communicated through the vessels of the placenta to the fœtus. His theory of the cause of labour pains, from the exertions of the fœtus, in consequence of the want of nourishment, though long supposed to be true, will scarcely bear the test of rigorous examination; and indeed every supposed cause of labour supervening at the end of the ninth month appears to be equivocal. The reason which he assigns for the life of a fœtus of seven months, while one of eight is generally dead, appears to be too refined, and in part imaginary. It has been said, that a woman, accused of adultery because her child was like neither supposed parent, was acquitted on Hippocrates suggesting, that a picture, which resembled it, might have been in her bed-chamber, which, on examination, was found to be true. The story is told however by an obscure writer, Hieronymus; and Galen, who relates it as the tale of a former age, does not attribute the decision to Hippocrates.

To engage however in any extensive inquiry respecting the physiological doctrines of the Coan sage would be idle, since much was fancy and more probably conjecture; but above all, on account of the latitude of expression which he employs. Thus νευρον signifies not only nerve, but ligament and tendon; φλεψ not only a vein, but an artery, or an excretory duct; and αιμα means not only blood, but any watery fluid; and the nervous fluid the air inspired, which mixes ultimately with all the fluids of the body.

It is more clear, that he supposed the existence of four fluids in the body, blood, phlegm, yellow and black bile. Their common source he supposed to be the stomach, but each had also its peculiar origin, viz. blood from the heart, phlegm from the head, yellow bile from the gall duct, and black bile from the spleen. The last organ, in his opinion, attracts not only the black bile, but water also, which it conveys to the urinary organs or to the belly. This doctrine of the four humours has been the foundation of the system of Galen, and still infects the theory of medicine. See TEMPERAMENTA.

The Hippocratic pathology might be offered in a neat compacted system, were the book De Flatibus certainly written by the father of medicine. It is however generally and deservedly removed to a later æra; yet Galen employs the flatus when mixed with the bile, as the cause of fever. The cause of epilepsy, as assigned by Hippocrates, is so recondite, and so totally at variance with what anatomy teaches, that it would be useless labour to enlarge on it. Yet this, and some other of this author's disquisitions, show with what eagerness he endeavoured to transfer his observations on the appearances found in the dissection of brutes to the human system. We may here remark what an examination of the works of Hippocrates for this purpose has suggested, that the boasted το θειον is introduced hastily and abruptly, greatly resembling an interpolation. In other parts of our work we have followed the herd of authors, and attributed it to a fixed systematic opinion.

As Hippocrates speaks of the rising and setting of the dog-star, of the pleiades, &c. it has been supposed that he attributes diseases to their influence. If however his works be examined, it will appear that, in such places, he only endeavours to fix the seasons with greater accuracy. It is evident indeed that he examines the influence of different seasons, the prevailing winds, the situation of marshes and mountains, with great precision, and pays peculiar attention to the age, mode of life, constitution, and diet of his patient. The histories or daily progress of diseases he has described with great accuracy and perspicuity; nor are his remarks, though not strictly applicable in our climate, and in constitutions so totally differing by a very opposite mode of life, wholly useless at present. Observation seems to have suggested what have been styled critical days; nor, though he hints at a supposed harmony of numbers, is there any real evidence that the doctrine was suggested by it. His observations on the pulse are few and indistinct; on the urine, numerous and minute; on the excretions either from the lungs, from the stomach, or bowels, peculiarly distinct and pointed; on the appearance of the features and the state of the body, full and discriminated. Yet, with all these aids, he still considers the prognosis in acute diseases as uncertain.

The practice of Hippocrates must be divided into his diætetic, his surgical, and his medical system. The chief diætetic work under his name is attributed by the critics to Polybius, his son-in-law; but there is much reason to think, that the rules are derived from the sage himself. In general, in this work, as in other parts of his writings, he commends moderation, and a quantity of aliment in proportion to the exercise used. In some of the tracts attributed to him he speaks of the comparative utility and effects of horses, asses, foxes, and hedge-hogs flesh. Where excess has been indulged, he mentions the advantages of vomits, purgatives, clysters, frictions, baths, &c. When persons were seized with acute diseases, he employed low diet, and forbad exercise: we find it injurious at this moment.

His practical rules are sound and judicious; yet perverted by fashionable systems, they have been found most fatal. Acute diseases are, he thinks, cured by nature, and the physician must look on and attend: those which have a fair proper crisis we must not disturb. What ought to be discharged must be discharged at the most convenient outlets, and at those where the tendency to evacuation is perceived; but *concocted* fluids only must be attacked by medicines, not *crude* ones, unless they are turgid. It is impossible to convey more sound and judicious practice in fewer words, yet it has been mistaken so much, that evacuations have been forbid in the beginning of diseases, and volumes have been written to explain the meaning of *turgid matter*, or rather to conceal it. The real meaning of the rules examinede in their literal sense, or in comparison with the other passages of his undisputed works, is this: What must be discharged will be properly

evacuated by the most convenient outlets. We are not, for instance, to urge purgatives when there is a tendency to perspiration, or sudorifics when expectoration is necessary. *Concocted* fluids are only to be evacuated, not *crude* ones, unless they are turgid. This is the fatal sentence; for the term concocted has been applied to the state of the fluids only after a long continuance of fever, and it has been supposed that fever must continue before evacuations are attempted. Whatever be the meaning, however, the interpretation must be limited by the term turgid, which in fact means only full. Thus a fullness of the epigastrum, of the abdomen in general, bilious vomitings and diarrhœas, redness of the eyes, and a heaviness of the head, are distinctly noted as marks of turgescence. These are the cases in which modern practice employs evacuations, and these are the symptoms which, even with Hippocratic rigour, would be truly found to indicate them. Yet to wait for concoction has been the fatal rule, which has kept febrile patients in bed with closed windows and curtains, with fire in the dog-days, the addition of blankets, and the most heating medicines for many weeks. At the moment of our commencing practice his plan was not wholly exploded.

A rule, less liable to be mistaken, was, that diseases from repletion must be cured by evacuation; and the contrary. Rest is equally the remedy for labour, and labour for indolence; and, in general, medicine consists in adding or taking away, according to the nature of the cause. Every attempt, however, to change a continued habit must be gradual, for every excess is dangerous.

If evacuations cannot safely take place from the most convenient parts, a revulsion must, according to Hippocrates, be attempted, and the nearest emunctories should be preferred; for the discharge, he adds, is not salutary from its quantity, but from its freedom and the ease with which it is borne. When, however, it is the object to weaken, the discharge must be excessive. If the practitioner should not at once succeed, he should not hastily change his plans, but consider whether any thing has been omitted, or, for a time, rest to see what nature will point out. When the patient appears to yield to the disease, he forbids further attempts; but those, he remarks, with an oracular uncertainty, who are not relieved by medicine are relieved by iron; those who yield not to iron are cured by fire; and those on whom fire makes no impression are incurable.

The milder laxatives of the "divine old man" were the juice of the herb mercurialis, cabbage, the leaves of elder, or a decoction of beet-root with salt and honey; various kinds of milk, either boiled or in the form of whey. These in larger quantities were sometimes employed to produce vomiting. As assistants to these, he employed clysters and suppositories; and, when more active drastics were necessary, the hellebore, not however without the precaution of premising the most cooling diet. He was anxious also that whatever might prevent hiccup and convulsions should be ready, and assisted their quick operation by clysters.

To the white hellebore he usually joined the sesamoid; to the black, the peplium, supposed to be a species of esula, or the portulaca, though by some authors thought to be the papaver spumeum of Dioscorides. We might fill pages with conjectures respecting the present names of these plants, but must leave the question at last in uncertainty. Hippocrates certainly considers what he styles the white poppy to be a purgative, and Pliny refers a kind of poppy to the genus tithymalus. The peplium seems, from other parts of Hippocrates's works, to be a carminative, and the cummin or the anise seeds appear to be occasionally substituted for it. Other purgatives, recommended by the Coan sage, are the grana Gnidia, the colocynth, the thapsia, the cyclamen, with the flowers and scales of copper, though the last are chiefly employed externally. Scammony and elaterium he commends for pessaries; but the latter was also given internally, as he advises the milk of a woman or a she-goat which have taken elaterium, as a purgative for children. It has been suspected that, in this passage, elaterium is inserted instead of veratrum, which goats greedily devour, and which acts on them as a cathartic. It is singular, however, that the particular purgatives, especially the drastics, are mentioned only in the tract De Morbis Mulierum, which is supposed to be from the school of Gnidus, and older than Hippocrates, since no mention is made of aloes, which was brought from India through Egypt in his time.

The head, according to Hippocrates, was particularly evacuated by the grana Gnidia, hippophae, a thorny shrub which discharged a bitter milky juice; the stone magnesia, which is undoubtedly the load-stone; and the tetragonum, supposed by Galen to be antimony, but by modern botanists to be the juice of one of the fir tribe, several of which are purgative. In general, Hippocrates used purgatives in chronic diseases; but he certainly employed them in acute ones more freely than the greater number of the more modern practitioners.

The diuretics prescribed by Hippocrates were the leek, onion, mercurialis, wild parsley, &c. with wine and honey largely diluted, sometimes the warm bath. Cantharides, however, he orders in dropsies; and five, with the head, feet, and wings taken off, to expel the secundines and bring on the catamenia. It is not certain, however, that so many were always wallowed: in dropsies he gave three only.

To purge the lungs a singular method was employed. If there was reason to suppose that an abscess had formed, after a peripneumony, a decoction of different acrimonious plants, with honey, &c. was directed to be poured into the trachea, the passage to which was opened by drawing out the tongue. Galen, however, has long since informed us, that the whole process was taken from the Gnidian school.

The uterus was stimulated by the most active pessaries, clysters, and injections, or by partial vapour baths (incessus) composed of the same ingredients. He attributed much to perspiration; but produced it chiefly by warm diluting liquors, by bathing, and covering the patient with warm cloaks. His ptisans, decoctions of barley of different richness, are often mentioned.

He drew blood by venæsection, and by scarifications more or less deep, chiefly near the head; yet he did not repeat the evacuations frequently, lest, by intercepting the current of blood to the head, apoplexy, convulsions, or inflammations might be induced. When the voice was affected, he divided the vein of the right arm; in pleurisy and peripneumony, the internal vein of the side affected: some directions are subjoined, respecting a division of the veins under the tongue, or in the hands.

In inflammations of the chest, he sometimes bled till the patient fainted. He bled topically with cupping glasses, and sometimes directs the necessary size. The lancet, he observes, should not be too pointed, that a free passage may be afforded to the more viscid fluids.

When he wished to alter the crasis of the more fluid, or of the more solid parts, he chiefly employed diet; and he is consequently copious in describing the powers of particular diets as cooling or heating, diluting or drying, as laxative or constipative. A large share of the tract De Victu Acutorum is employed on this subject, where the ptisans again frequently occur.

To check excess of motion, he seems to have very rarely used opium. In what he styles strangulations of the uterus, he advises *το ὑπνωτικὸν μηκωνιον*, the soporific meconium: the *οπος μηκωνος* seems to be the papaver spumeum, the peplium, perhaps the wild purslain. He recommends the mandragora in a dose below that, which produces delirium, and thinks it useful in the violent paroxysms to which those affected with melancholia are sometimes subject. The juice of the mandragora, and the wild cucurbit diluted with milk, is to be injected into the anus to relieve prolapsus, or bleeding piles, and into the vagina to evacuate the vessels of the uterus. But to cure quartans he mixed the mandragora with hyoscyamus, silphium (probably asafœtida), and trefoil, giving them together in wine.

To correct rigidity he employed baths, fumigations, and gargles. Oils, impregnated with different flowers, sometimes with aromatics, were also freely ordered; cataplasms and ointments, sometimes stiffened with wax, but scarcely in any instance consolidated into what may be now called a plaster, were frequently employed. The oils were generally rubbed in after exercise, and thence called *ακοπα*, relievers of fatigue. It was an idle fancy of the alchemists that Hippocrates was an experienced chemist.

The surgery of Hippocrates is scattered through a great number of tracts, but this part of the subject has been anticipated in the history of surgery. (See CHIRURGIA.) Yet, on recurring to that article with a more circumspect eye, we perceive omissions which we shall now endeavour to supply.

A minute attention, which seems to have prevailed in the Gnidian school, to the form of bandages, he rejects as rather curious than useful. The patient, he remarks, requires assistance, not ornament; and whatever does not contribute to his ease or his relief, he thinks undeserving of attention. He penetrated bones with an instrument not unlike the modern trephine, and even the ribs, to evacuate water collected in the chest. The management of fractures, though the instruments were somewhat rude, seems, on the whole, judicious: no plasters were applied till after the æra of Paulus Ægineta. The eye, in inflammations, was scarified by the friction of the rough Milesian wool.

We have enlarged on this subject because we have not found the Coan system fully and impartially stated; and because the practice of Hippocrates, like an overruling genius, has continued to lead us, by imperceptible threads, even to the present æra. Subsequent to his time his descendants and disciples continued in the same line, and for many ages little improvement was made in practice, and but few innovations occurred in physiology. For the latter we are indebted to *Plato*, whose fancies on this subject are amusing, and, but that we have little room for amusement only, might for some time detain us. The names of Hippocrates' successors, and we could add scarcely any thing to the catalogue, would not be interesting; but we were somewhat surprised among them to find the elder and younger Dionysius. We could easily conceive that the elder, as was reported, delighted in witnessing the most painful surgical operations; but the idle dissipated character of the younger forbad us to expect from him any mental exertion. It is suggested, however, that the barbers and perfumers shops, for he was as condescending and familiar as our fifth Henry when prince of Wales, were called *ἰατρεὶα*, and that it might therefore be truly said that his time was employed *εν ἰατρεὶοις*, but not in medical disquisitions.

From the time of Hippocrates to that of Ptolemy Philadelphus few were the medical practitioners, and these rather distinguished for fancy and refinement than any improvement in the art. *Diocles*, already noticed in the history of surgery, rescues this period from total insignificance. Yet, even at this time, when authors contended that no blood naturally entered the arteries, and the arterial vibrations were attributed to a *pulsific conatus*, the pulse was attended to and employed among other prognostics. The fame however of the medical practitioners was eclipsed by that of *Aristotle*, who flourished at this time; a man to whom every branch of natural science was highly indebted, who alone united the most comprehensive views, the acutest genius, and the most unremitting diligence, and who has only been disregarded by those who have not talents to appreciate his labours. His two books on medicine are unfortunately lost; his anatomy, in the works which remain, is not on the whole correct, and his physiology somewhat fanciful. These were however the faults of his æra, not his own. Whatever were the errors of his physiology and philosophy, both were adopted in general by Galen, and more exclusively by the Arabians; so that their effects were most extensive. The vast knowledge which Aristotle possessed in the three kingdoms of nature is sufficiently understood; to his instructions we are indebted for what Theophrastus has collected, and perhaps for the fatal knowledge which Thras as is said to have possessed of the deleterious qualities of vegetables. The other physicians of this æra do not merit the slightest notice.

The prominent objects which next offer themselves to our attention are *Herophilus* and *Erasistratus*, the great founders of the Alexandrian school, at least the powerful supporters of its credit. Erasistratus we have styled the elder, but the chronology of this very early period is uncertain. *Erasistratus* was a physician of some eminence, but he applied to anatomy at a very late period of his life, and with great candour recanted, in consequence of his discoveries, some of his early opinions. He certainly approached very near the secret of the circulation, but could not understand the use of a double heart. He supposed digestion to be performed by attrition, and violently opposed the humoral pathology of his predecessors. His own system rested on the idea of the arteries containing only a spirit, and that diseases, particularly fevers and inflammations, arose from their admitting blood. He was apprehensive of bleeding, lest the blood should find a way from the

veins to the arteries; of purging, because Pythagoras had forbidden it. He reduced his patients by abstinence, or by violent exercise: venæsection he supplied by ligatures; purgatives by slight emetics, or by clysters. He recommended simpl emedicines, and violently reprobated the complicated formulæ of that æra.

The school of Smyrna, in which Erasistratus taught, was undoubtedly famous; but there is reason to doubt whether the medals which remain, supposed by Mead to have been struck in honour or commemoration of this seminary, had really such an object. The figure of Æsculapius, which they bear, is so common on medals where there is not the slightest suspicion of their being intended to commemorate physicians, that the image carries no conviction. The names added seem to be those of magistrates or priests; indeed these offices were sometimes united, and should the name of a physician occur, it rather belonged to him in his official than his medical capacity.

Herophilus, though chiefly distinguished as an anatomist, was however, according to Galen, acquainted with the whole science of medicine. He, as well as Erasistratus, was accused of dissecting criminals alive; nor can we at this time deny what Celsus has expressly asserted, and Tertullian confirmed, notwithstanding the silence or the evasions of Pliny. He certainly first saw the lacteals in goats, and gave his name to many parts of the human body, which he first described. We are informed by Plutarch that he considered the function of respiration to be performed by two systoles and two diastoles, but his account is far from being intelligible. Every complaint, he thought, was owing to humidity. In pleurisy, one portion of the lungs was only, in his opinion, affected; in peripneumony the whole viscus. He was peculiarly minute in his prognostics from the pulse, and appears to have illustrated it by a geometrical construction; but Pliny, to whom we are indebted for the account, seems to think that the full explanation had not reached even his era. He chiefly depended on vegetable medicines, and used hellebore freely. When the whole system was in confusion, he thought the disease would escape. He was also fond of gymnastic exercises, and is quoted by Eustathius in his notes on Homer, unless with some able critics we read Herodicus, the first patron of gymnastic exercises, for Herophilus. The followers of Herophilus were numerous, and their names are preserved; but they are spoken of with little respect by Galen, as arrogant and loquacious; and it is singular that not a single one has been celebrated for his anatomical acquisitions.

The indifference to anatomy seemingly arose from the gradually increasing influence of a new sect, whose origin has been traced to *Acron* of Agrigentum, the rival of Empedocles, and the cotemporary (probably) of Hippocrates, I mean the EMPYRICAL. Its real author, however, according to Galen, was *Philinus of Cos*, the pupil of Herophilus; though *Serapion*, on the authority of Celsus, has been considered as the first and chief of this sect. Herophilus himself may have dictated this schism, by lessening the authority of Hippocrates, whose anatomical descriptions were found by Herophilus to be seldom consonant with the human structure. It appears however more probable that the new sect arose from the superstitious dread of the Grecians, who thought themselves polluted by the touch of a dead body, for Herophilus dissected in Egypt; and this I conjecture to have been the case, since the first mark of disaffection expressed by Philinus was the aversion to anatomical dissections; nor can I find, after a very minute inquiry, that he proceeded farther in his heresy. He wrote also some tracts on plants, and commentaries on Hippocrates; but very little is known of him.

Serapion of Alexandria first openly contended that all dogmata in medicine were useless or injurious. The result of casual information, when pursued in practice, they called imitation; frequent imitation an experimental habit; and they formed rules, more or less general, according to each. When they transferred what they had observed respecting one disease to another, they called it epilogismus; and the result of their own observation, autopsia; that of others, history: the two last with analogy (epilogismus) they styled the tripod of medicine. This is the equivocal triplex sermo which Galen accuses Serapion of preferring to the ancient dogmata.

Of the empyrical practice Cœlius Aurelianus has given some specimens: castor, cicuta or opium, and henbane, were the chief remedies. In the account of epilepsy the reader will find almost the whole of the materia medica of the empyrics; but they usually premised bleeding, vomiting with veratrum album, and purging with black hellebore and scammony.

The followers of Serapion have not been distinguished in the annals of medicine; and one of the last, whose name merits our regard, *Heraclides of Tarentum*, deviated, we suspect, from his predecessors, since he commented on all the works of Hippocrates, and is praised by Galen. His tracts on internal affections and on diet were also commended; but, in general, the empyrics were attentive to diætetics and to surgery. Celsus praises their ordering moderate and frequent potions in fevers, though he disapproves of their management of quartans. Galen describes an antidote of Heraclides, which consisted of the juices of cicuta and henbane, of each four drachms; of castor, white pepper, costus, myrrh, and opium, of each a drachm. These were mixed in two glasses of wine, and evaporated in the sun till the whole was of the consistence of an electuary, and the quantity of a horse-bean given with two glasses of wine in all cases of bites from poisonous animals, in pains, and in strangulated uterus.

We have arrived far beyond the period when Celsus tells us that medicine was divided into three branches, diætetics, pharmaceutics, and surgery, yet we have seen the same authors treating of each; and though the proportion of their attention has been varied according to their fancies and opinions, yet the same author has seldom wholly neglected either. The language of Celsus seems therefore to have been mistaken, and in Tres partes deducta seems to mean the particular attention paid to each branch; for surgical knowledge often exerted in the moment of necessity, and diætetics, which require domestic attention, could form no part of the systems of the priests. Some, however, were particularly famous for branches of the science, which they had particularly cultivated, and we know that lithotomy, for instance, was practised by exclusive operators. The empyrics, we have indeed remarked, were peculiarly attentive to diet; but there is no evidence of any real separation, except in the case of the operation for the stone. On attentively examining this subject, we

find traces of compounders of medicines (pharmacopolæ) distinct from the practitioners. Theophrastus, for instance, distinguished the Pharmacopola Thrasyas from his pupil Alexias, who was acquainted with the whole art of medicine. The same author asserts that Eudemus of Chio was accustomed to prepare twenty doses of hellebore in one morning; and it appears, from the subsequent sentence, that the pharmacopolæ kept open stalls, not unlike, probably, the stages of modern mountebanks. The herbalists were a still inferior class, subservient to the pharmacopolæ. The successors of Heraclides are not of sufficient importance to detain us, for much remains to fill up the picture.

Greece was now become subservient to the superior genius of Rome, and we must there look for the progressive steps of medical improvement. Rome, formed by the rude tribes of ferocious banditti, wanted for many ages little more than those chirurgical aids which their mode of life rendered indispensable. Epidemic fevers, however, were at times violent and fatal, from the Pontine marshes which were at no great distance from this capital of the world. Yet, for nearly 600 years, they were said to be without medical aid, and their only resources to have apparently been blind empyricism, superstitious charms, or religious ceremonies. Temples seem to have been erected to FEBRIS, and their most destructive enemy, thus raised to the rank of a goddess, was worshipped. In various parts of the city subordinate deities of the same kind were introduced; and no less than three goddesses, Intercidona, Pilumna, and Deverra, were propitiated by offerings to confine Sylvanus, who was supposed to be inimical to women in child-bed. In the year 321 ab urbe conditâ, a temple was erected to Apollo for the health and safety of the Roman people; and in 470 Æsculapius, or rather his emblem, a snake, was brought to Rome by a solemn embassy, sent for the purpose to Epidaurus. The snake took refuge in an island in the Tyber, and there the temple of the god was erected. This fact is of considerable importance in the history of medicine, since it proves that the worship of Æsculapius was continued in Greece in that era, and consequently that traces of the records from which, as a sacred fountain, Hippocrates drew a great part of his observations, were still preserved. Some of the votive tablets hung up in this new temple are preserved by Gruter, and of a date so late as the age of the Antonines; but these are in Greek, and seem to have owed their origin to the gratitude or superstition of some Greeks who at that time resided in the city.

It indeed appears singular, that while Rome was so little distant from Naples, a Greek city, who traced their original to the Rhodians, among whom Æsculapius was worshipped, they should have had no traces of medicine; especially as the Pythagorean philosophy was brought from thence, or from the farther provinces, styled Magna Græcia, to the Roman kings. The testimony of Pliny, however, is positive; nor is it repelled by Dionysius of Halicarnassus, who remarks, in two distinct epidemics, viz. of the years of 282 and 401 ab urbe conditâ, that the disease was so violent, as to baffle the skill of the physicians; for such would be the language whatever the medical aid might have been. The stern patriotism of *Marcus Cato* seems to have prevented the increasing influence of the Grecian physic; and, from authority, or complaisance, Pliny fixed the period of 600 (strictly 535) years, during which no physicians were to be found in Rome. It must be obvious, as we have already insinuated, that this could not be strictly true; for some resources, either ridiculous or superstitious must have been sought for when disease occurred. The diætetic system, the virtues of cabbage, adopted from the school of Pythagoras, and the superstitious attachment to the Asclepiadæ, could not have sufficed; but we find little to substitute in their place. The Roman records fail us, and the authority of Cato is supreme. We mean not, in this account, to allude to a law said to be introduced by Cato, prohibiting the Grecian practice; for, at the time of the arrival of Archagathus from Greece, he was but fifteen years old; but, as we have remarked, to his influence in preventing the increase of the prevailing fashion. The fame of Archagathus quickly faded; for, though at first styled *Vulnerarius*, he was soon stigmatised by the appellation *Carnifex*. Of the practice of Cato, who wished to supersede the Grecian system, we have hints from Pliny, Plutarch, and his own remaining works. He did not enjoin abstinence, but allowed his patients to eat vegetables (Pliny says cabbage, exclusively), ducks, pigeons, or hares. In fractures and dislocations, his remedy was a charm, consisting of hard words, without a meaning. The English reader may find some amusement on this subject in the memoirs of Martinus Scriblerus.

The bad success of the severer practice of Archagathus soon rendered his successors more gentle in their operations; but that some remains of the active Greek surgery continued to prevail we learn from Plutarch, who informs us, that, when C. Marius suffered the extirpation of the varices of one leg without a groan, he declined the attempt on the other, saying, that the advantages did not compensate for the sufferings.

Numerous works have been written to prove, that physicians at Rome were slaves, liberti, or foreigners. The opponents of this opinion have been equally voluminous. We must, as usual, give the result of our inquiry without engaging in the controversy. It seems clear that the greater number of practitioners were of the description mentioned, but it is equally certain that many were of a superior character. Archagathus himself was received at first with great ardour, and a house purchased for him; nor, on the decline of his credit, was he apparently deprived of it. He was also raised to the rank of a Roman citizen, and the Aquilian law declares, that if any physician neglects a slave after any operation, he shall be pronounced guilty of a crime. By the same law, an action will lie against a physician who, by the unskilful use of the knife or of medicine, shall kill a slave; and Ulpian decides, that a midwife, in the same circumstances, shall be pronounced equally guilty. These regulations must relate to free men, and the Aquilian law is confessedly anterior to the age of the Cæsars, for all physicians were by Julius Cæsar raised to the rank of Roman citizens. Varro is also explicit on this subject, when he discusses the question for what farms it is preferable to have artificers, among which he reckons medical assistants, occasionally hired, and to what kinds it is better to have slaves attached. In the time of Cato, also, the Phœnicians had been driven from Sicily by the Romans, and the Macedonians from Greece. The Grecians had therefore recovered a great

share of their former liberty. As their language was fashionable, their manners pleasing, their demeanour obliging, perhaps approaching to servility (Juvenal), it is not surprising that they should flock to Rome, nor that they should be favourably received.

Medicine obtained no inconsiderable advantages from the legacy of *Attalus Philometor*, the last king of Pergamus, who left the Romans his heir. We are told by Galen that the Pergameni were the rivals of the Egyptians in collecting books; and Philometor was peculiarly attached to gardening, and the examination of the powers of poisonous plants. It has been said that this study was rendered subservient to the most cruel purposes, but of Philometor's cruelty we have no evidence. We know that he wrote some tracts on agriculture, which Pliny and Varro have praised; that he engaged in metallurgic experiments, and in modelling with wax: Galen describes also, with commendation, some medicines invented by him. To the patronage and to the assistance, probably, of Philometor we are indebted for the works of *Nicander*, particularly the Theriaca and Alexipharmaca. His collection of remedies, the prognostics translated from Hippocrates, and a work in verse, De Re Rustica, highly commended by Cicero, are lost. A long fragment of the last is preserved by Athenæus, which shows that it contained many observations relative to medicine. The poems which remain were highly valued by ancient authors, as we find from the numerous commentaries on them; and whatever may be said of Attalus' more philosophical or patriotic pursuits, it is still probable that experiments on *condemned* criminals furnished Nicander with many facts. The history of medicine describes Thrasyas as attentive to poisonous plants, and perhaps their antidotes; fable speaks of Deianira, Hecate, Circe, and Medea, but animal poisons were first considered scientifically by Nicander. The king of Pontus, about the same period, engaged in a similar investigation; and to his experiments in pursuit of antidotes we owe the famous medicine, which bears his name, Mithridate. The receipt, with many others, was taken from the cabinet of Mithridates, by Pompey, who directed his freed-man Lenæus to translate them. The original formula however of this famous alexipharmic consisted only of two dried nuts, as many figs, twenty leaves of rue, and a grain of salt. To this remedy we shall, however, return.

The pursuit of this subject has drawn us from our chronological clue, for, previous to the conquest of Pontus, *Asclepiades* flourished. He was not a Roman, but born in Prusia, a city of Bithynia. He was by profession a rhetorician, an Epicurean, and the friend of Cicero. If we may trust the report of Pliny, Asclepiades came to Rome without any knowledge of medicine, and, failing in his attempts as a rhetorician, he with little preparation professed himself a physician. He was the first of this profession who gained general esteem in the capital of the world, and whose name has reached posterity. Pliny gives a long account of the artifices by which he attained his reputation, but they are such only as every fashionable physician employs, viz. pleasing the patient, and avoiding every thing that can give uneasiness, till nature cures, or yields to the disease. He curtailed the rigorous abstinence of the Greek physicians, gave wine occasionally, recommended friction, gestation, baths, &c. vide BALNEUM, professing to cure with speed, with safety, and without inconvenience. He declared that he deserved no credit, if he was himself unwell; and, fortunately for the credit of his system, he died in extreme old age, in consequence of a fall over the stairs.

Asclepiades was the founder of a new sect styled the METHODIC; for his philosophy was that of Democritus as reformed by Epicurus, and his physiology rested on corpuscles, flowing through invisible pores. The doctrine of Hippocrates, respecting the intelligence of nature, and her influence in curing diseases, he rejected with contempt. He denied even the power of attraction in the magnet. The soul he considered only as the united action of all the senses; and the intellect, or the power by which we understand what is secret or concealed, consisted, according to Asclepiades, in a resolution of the ideas, attained by the sensible images formerly collected. Every thing happened, in his opinion, from necessity, and nothing without a cause; nor was nature any thing but the body, or its motions, and, instead of assisting, usually injurious. Thus the epicurean system of Asclepiades verged towards stoicism. His anatomical knowledge was very imperfect, or he would not have thought that the urine passed from the intestines into the bladder through pores. Digestion was, in his opinion, unnecessary; and he supposed that the food was carried into the blood, and there attenuated till it was adapted to the pores of the vessels which conveyed it as nourishment. Hunger was induced by the relaxation of the larger, and thirst by that of the smaller pores. The fæces were not, he thought, excrementitious, as some insects fed on them.

His pathology was of a similar complexion. Inflammation was owing to obstruction either from the magnitude, the figure, the multitude, or the rapid motion of the atoms; pain to obstruction from particles of a large size, and the absence of the smaller ones. Faintings, dropsies, and hectics, arose from the too great size of the pores; and dropsies, in particular, he thought might be owing to the transudation of the flesh, which then became water. Quotidians were owing, in his opinion, to the obstruction of the larger particles, tertians of the less, and quartans of the least. He denied the existence of critical days.

This system he adorned with all the art of his former profession, and his practice was no less captivating. He rejected vomits and purgatives; admitted of bleeding, but with numerous limitations; and substituted, for purgatives, the most acrid clysters. Obstructions were, he thought, best removed by wine, by friction, gestation, and bathing. He plumed himself on having first directed frictions, and is minute in his directions for their management; yet, so far as we can collect from his disciples, he added little to what Hippocrates had, in a few words, directed. He sometimes however ordered medicines, though chiefly external applications, and occasionally scarifications.

Thus was this famous revolution in medicine effected, not from superior judgment, more extensive observation, or experience, but from ignorance of what former practitioners had taught, and indolence, which rendered him unwilling to learn. It was easier to construct a fanciful romance than to study by the midnight lamp, and some late systematics have thought the same. The whole was rendered fashionable by his eloquence,

and the comparative pleasantness of his medical directions.

We must not however suppose, as has been too common with medical historians, that Asclepiades had no prototype or rival. Celsus expressly remarks, that he borrowed from *Cleophantus*, a physician of a former era; and Pliny observes that the use of wine, as directed by Asclepiades, was borrowed from the same author, whose period is uncertain, though we approach it by finding that his scholar Mnemon flourished in the time of Ptolemy Euergetes. One sarcasm of his rivals has been mentioned, where he is referred to the butchers and cooks, as able to give him correcter physiological views than he possessed. Cicero also, the friend of Asclepiades, highly praises *Crateras*, and bitterly laments the death of *Alexion*. We may likewise mention, though it might more properly occur in another place, that *Crateras* the herbalist, highly commended by Pliny and Dioscorides, was probably the first who drew figures of plants. He lived however in the time of Mithridates, and must be distinguished from a physician of the same name, the cotemporary of Hippocrates; nor is it too late to add, that many Asclepiades flourished in subsequent eras, whose works and opinions, without great care, may be confounded with those of the Bithynian.

The sect of Asclepiades seems not to have been at once established. *Alexander Philalethes*, his scholar, taught in Asia; and *Artorius*, the physician of Augustus, who perished at sea, Ab. U. C. 722, was also a follower of this celebrated innovator. Artorius has been confounded with Antonius Musa; but he had been dead ten years, when the latter succeeded in the cure of the emperor, after his former physician had failed. Who that physician was is not certainly known. If we trust the emendation of P. Harduin, he was called *Camellius*; and this name occurs not only on inscriptions preserved by Gruter, but on medals. What the disease of Augustus was we are not informed; probably a debilitated system, which A. Musa cured by cold bathing, cold drinks, and lettuces, which Camellius' scruples had forbidden. The gratitude of Augustus was unbounded. His pecuniary rewards were immense: he was allowed to wear the ring; and immunities were not only granted to him, but to all who exercised the same art. Suetonius adds, that his statue, made of brass, was placed next that of Æsculapius. We have no reason to suppose that Musa was a follower of Asclepiades; for he is spoken of by Galen as intimately acquainted with the whole science of medicine.

Whether it arose from the slow progress of the plans of Asclepiades, or from the alterations and improvements of *Themison*, that the latter has been considered as the founder of the methodic sect, is uncertain. Such, however, is the general language of medical history, and we must follow her steps. Themison has been highly commended by his cotemporaries and successors, and his name was long synonymous with that of an able physician. Yet we cannot but recollect the line of Juvenal:

Quot Themison ægros autumno occiderat uno.

Asclepiades chiefly considered the causes of diseases: Themison thought it only necessary to connect them by some common symptom, and divided diseases into the stricta, laxa, and mixta. By these terms we must not understand, with the generality of authors, constricted and relaxed fibres, or a mixture of both, but diseases attended with impeded or increased secretions, or too great discharges from one part, and too little from another. These principles afforded a *path* for physicians, and hence the sect (from μεθοδος, via) was styled the methodic. In the first case he directs evacuants, in the second restringents, and in the third to oppose, by either class of remedies, the most dangerous disease. Such was the system he taught in advanced age; but the methodic doctrine had not yet been polished with care, so that we shall speak of Themison as an individual only in this place.

Themison neglected the precepts of Asclepiades in many respects, particularly in giving aloes and scammony, in allowing cold water after bleeding, and in not observing the due periods for giving nourishment, exciting evacuations, or bleeding. It is remarkable that in the writings of the methodic sect we find the first traces of bleeding with leeches; and Cœlius Aurelianus relates a singular fact of Themison, that, having been bit by a mad animal, or possibly remaining too long with a friend labouring under an hydrophobia, he contracted the same disease. He cured himself; but, when he attempted to explain the method, he relapsed. This must have been a high degree of hypochondriasis. He was the author of many works, from which Cœlius Aurelianus has preserved short extracts; but we can select nothing very important, except his praises of plantago, a plant supposed to be discovered by himself.

The system of Themison seems to have had no very violent opponent, or defendant: so far as we can collect, the opinions of physicians vibrated between the pores of Asclepiades, and the stricture or laxity of Themison, and practitioners seem to have reasoned with some freedom, though with no striking marks of genius or ability. A work intitled Problemata Medica, ascribed to *Cassius*, who seems to have lived about the end of the reign of Augustus, and the beginning of that of Tiberius, displays some marks of judgment and discrimination; but in his reasoning he seems to lean rather to the opinions of Asclepiades than Themison. We must not, however, conceal that the problems have been attributed to a later author, who is by no means a servile follower of the Rhetorician's doctrines. His practice, as we learn from Celsus, was far from irrational, and he freely gave cold water in fevers. Galen and Scribonius Largus mention a remedy of Cassius, called *colice*, as useful in colic pains. It consisted of carminatives, spices, opium, and saffron. This receipt Cassius left, apparently, to his servant Atimetus, whom he bequeathed to Tiberius, and from him Scribonius received it.

Celsus was another distinguished practitioner of the methodic sect, who brought, or greatly contributed to bring, physicians back to the patient study and observation recommended by Hippocrates. He seems to have been a cotemporary of Cassius; and his language alone would place him in the Augustan age. Some late critics have reduced him to that of Trajan. Pliny, however, who dedicates his work to Vespasian Titus, in his sixth consulship, A. U. 830, quotes passages of Celsus, which we still find in his writings; but Trajan only began to reign twenty years afterwards. Pliny also observes, that Julius Græcinus, respecting vineyards, transcribed the directions of Celsus; but J. Græcinus was murdered by Caligula, according to Tacitus,

and Caligula was himself killed in A. U. 783. Celsus tells us that Themison, in advanced life, had deviated from the precepts of Asclepiades, and Pliny, that Themison was the pupil of Asclepiades, who lived in the time of Pompey. Celsus, indeed, speaks of Themison as still alive, and consequently he must have himself flourished in the latter years of Augustus. Celsus is said to have been a Roman, or perhaps a Veronese; but though he speaks occasionally of his own observations, he was not a regular medical practitioner. Pliny never mentions him in this light; and, when he enumerates the physicians of Rome, the name of Celsus is not included.

Celsus in his medical works has chiefly followed Hippocrates, particularly in his Histories of Diseases, and Prognostics, except in relation to critical days; but he is not, as has been supposed, the servile commentator of the Coan sage; for he quotes numerous authors of a later era, and seems to have given a brief abstract of the best systems in a connected view, though evidently of the methodic sect, and the echo of Themison in what relates to the cure of fevers. He is, indeed, rather an epitome of his predecessor's maxims, than himself an object of historical research; and we shall leave him with remarking, that those who wish to study the opinions and practice of the ancient physicians will find both elegantly, as well as correctly, detailed in Celsus.

We should scarcely have mentioned *Æmilius Macer*, a physician of this era, who is said to have written on plants, on breeding birds, and on theriaca, but to remark that his works are lost, and that the poem on the Virtues of Plants, ascribed to him, is the production of an obscure monk of the middle ages, or, as has been said, of the physician Odo. Of *Servilius Democrates* we should also have scarcely spoken, since his era is uncertain, and the subject is too uninteresting to induce us to engage in the disquisition, but that the more laboured composition of the Mithridate and Theriaca is professedly taken from his works by Galen. They were detailed in Greek iambics. Of an uncertain age also is *Philo*, whose name is preserved in the Philonium, a preparation described, according to Galen, in elegiac verses. In this prescription the corrector of opium is the euphorbium, as in the theriaca it is the squill. He seems to speak of himself as of the family of Asclepiades; but his age, we have said, is doubtful.

Scribonius Largus, of whom we have incidentally spoken, was of an era posterior to that of Celsus, though not so late as has been suspected from his style; a peculiarity satisfactorily explained, by supposing that he wrote in Greek, and that his work was translated by an inferior author. His tract on the composition of medicines contains many choice receipts, collected from different sources, chiefly private collections, and empirical traditions, which are not found to countenance the encomia with which they are introduced. Scribonius highly commends his preceptor, *Apuleius Celsus*, whose antidote against the hydrophobia he has preserved. Another pharmaceutist of that era was *Philenides* or *Philonides*, who wrote, according to Dioscorides, on white hellebore; but the chief author in this department of medicine was *Andromachus*, perhaps the first who was dignified with the title of archiater, though the honour of priority has been contested in favour of Damocrates. The title has been equally the subject of controversy, and it has been disputed whether it meant the principal, or the emperor's, physician. Galen, indeed, expressly observes, that such were his talents, not only in the medical but in the literary departments, that he was appointed *αρχειν των ιατρων*. He was the author of the Theriaca, still known by his name, whose utility consisted not only in resisting the power of all poisons, but in giving calmness and hilarity, as well as removing the effects of fatigue. In this preparation the troches of vipers were designed to be the alexipharmic, and the opium the cordial, ingredient. This remedy, for more than one thousand five hundred years, enjoyed the highest reputation, and was prepared by kings and noblemen with the most accurate attention. The receipt in Greek verse is preserved by Galen. Andromachus has left no other memorial; but the works of his son are often quoted by Galen, though neglected by later authors, as he is not explicit respecting the preparation of his compositions, or the times of most successfully employing them.

Numerous are the collectors of formulæ in this period. Among these are the *younger Asclepiades*, called, probably for the sake of distinction, *φαρμακεων*; *Charicles*, highly commended by Tacitus, and *Menecrates*, perhaps of an earlier era, who first endeavoured to abolish the medical characters of weights and measures, as liable to be mistaken by transcribers, and to substitute words. The improvement, however desirable, was soon overlooked, and Galen complains that the characters were again employed.

There is much reason to suppose, that, from the time of Celsus, physicians again returned to the more certain road of observation and sound reason; but either the rage of innovation, or the desire of distinction, excited another sectarist, who, like Asclepiades in a former, and Paracelsus in a later, era, attempted to overturn all that his predecessors had collected. This man was *Thessalus Trallianus*, who boastingly styled himself, on his tomb, Iatronice. His father was of the lowest rank, and Thessalus himself without the advantages of education. This is the account, indeed, of Galen, who, on every occasion, eagerly censures him; but we have the evidence of Pliny to convict him of the most disgusting arrogance, and the most consummate ignorance. He gained access to his superiors by flattery, and a subserviency to their pleasures; nor did he profess himself a physician till he had disgraced himself by every species of infamy in their service. His system differed, however, very little from that of Asclepiades and Themison. If, in their opinion, health consisted in the pores being adapted to the fluid, and disease in their being unsuitable, Thessalus thought the same. But in the mode of relief he aimed at changing the state of the solids rather than the fluids. He also was the first who in fever ordered three days abstinence and rest, from which physicians were afterwards called *diatritarii*. His peculiar pathological opinions introduced a singular language, which has not been properly explained, viz. metasyncrysis and metasyncritical remedies. In the language of the methodic sect, *συγκρὶνεσθαὶ* is opposed to *διὰκρίνεσθαὶ*, the former meaning to mix and unite, the latter to separate. *Μετασυγκρινεσθαι*, therefore, means the separation of bodies previously united. Cœlius Aurelianus uses the words recorporare and recorporatio. The chief works of

Thessalus, quoted by Cœlius Aurelianus, relate to diet; but Galen mentions his name on a subject of surgery, which leads us to suppose that he wrote some chirurgical tracts.

Among those who recommended themselves by the novelty of their fancies rather than their improvements, we may mention *Crinas*, of Marseilles, who only allowed food when the horoscope of the patient permitted; a system sarcastically hinted at by Juvenal; and *Charmis*, from the same city, who, with less discrimination and more eagerness than A. Musa, allowed only of cold baths and cold drinks. Authors of a superior character, in this era, were *Rufus Ephesius*, who was perhaps the first medical lexicographer, and who wrote De Nominibus Partium, and *Erotian*, whose Lexicon Hippocraticum is still a work of great value. Rufus, who is placed by some historians in the time of Trajan, wrote many other works, particularly one on the affections of the bladder. His poem in hexameter verse, on plants, is wholly lost, unless, as has been suspected, the lines on the plants consecrated to the gods, added by Aldus to his edition of Dioscorides, and preserved in the Greek bibliotheca, be a part of it, as Fabricius suspects.

In this era also, from the age of Nero to that of Trajan, *Dioscorides* and *Pliny* lived. The vast work of the latter has furnished many parts of this history, and the materia medica is indebted to each author for the most important aid. We have mentioned them more particularly in another place. From the Preface to *Arius* it is probable that he was himself a practitioner of medicine, though to no great extent; and, from the predilection he seems to feel for the sect of Asclepiades, if we may guess from his almost exclusively quoting his followers, he was probably a methodic.

It will be obvious, from this history, that the doctrine of the methodics had, at no period, a very general currency, and about this time the Asclepiades were divided into many subordinate sects. One of these, the EPISYNTHETICS, endeavoured to reconcile the various discordant opinions of different authors; and another, the ECLECTICS, to select from each system what was most probable. The chief of the first was *Leonides of Alexandria*, whose works are lost, and from the quotations which remain in other authors, it is not easy to ascertain his peculiar opinions. The chief of the eclectics was *Archigenes of Apamea*, a most excellent author, highly commended by Haller in all the different departments of medicine. He was a scholar of *Agathinus*, one of the chiefs of the Episynthetics.

Another sect into which the methodics divided, and which was at last absorbed in, or absorbed, them, the PNEUMATIC, merits more particular notice. The chief of this sect was *Athenæus of Attalia*, a man whose system, according to Galen, was polished with greater skill than that of any of his cotemporaries. The philosophy of the Pneumatics was derived from the Porch, since they allowed Chrysippus to be their great prototype. Athenæus supposed that fire, air, water, and earth were not really elements, but that their qualities, heat, cold, dry, and moist, merited this title. Following the Stoics, he introduces a fifth principle, viz. a spirit governing and directing every thing, and occasionally, when offended, inducing diseases. From this new principle they were styled Pneumatics. Agathinus, already mentioned among the Episynthetics, was in a subsequent period a Pneumatic, in consequence of his attending Athenæus. He explained, it appears, at some length, the principles of his sect, in a tract on Discoveries since the time of Themison. He wrote also on the pulse. *Herodotus*, *Archigenes*, and other physicians of character, were followers and pupils of Athenæus; but the fame of each was eclipsed by that of Aretæus. It is singular that he never mentions Galen, nor is mentioned by him; and, at the same time, the quotations of Ætius from Archigenes bear a considerable resemblance to the observations of Aretæus on the same subjects. Was the Attic dialect of Archigenes more agreeable to the Roman ear than the Ionic of Aretæus? or were they one and the same, differing only by a change of dialect? We must, for want of further information, leave this subject in its former obscurity.

The language of Aretæus is distinguished by a luminous terseness, which impresses the idea with considerable force. He can scarcely be styled a Methodic, and indeed bears few marks of that sect, and particularly differed from them in investigating the causes of diseases by anatomical dissections. The nerves, he supposed, did not run from their origin to their termination in straight lines, but crossed each other in the form of an X, passing in this way to different sides; and he thus explains the disease felt on the side opposite to that where the head was injured. His practice was that of the most judicious of the ancient physicians, and he was particularly fond of exciting vomiting by white hellebore. This operation, he remarked, relieves the breathing, changes what was of a bad colour to a good one, and restores plumpness to those who were emaciated. He used the most active purgatives, bled frequently and freely from different parts, though he argues very forcibly against the refinement of some practitioners, who prefer small veins, which are the branches only of those from which blood is usually taken. He employed arteriotomy, cupping-glasses, and leeches; but preferred curing acute diseases by diet. He gave wine more freely than former physicians allowed, and employed opiates with little reserve. He was peculiarly partial to castor, as a nervous and antispasmodic medicine, thinking it also an assistant of digestion. He recommended asses, mares, sheeps, and womens milk, used frictions and the actual cautery, and advised the operation of lithotomy. In short, practitioners of any age will derive from Aretæus the most sagacious and useful medical observations. His practice is active, enlightened, and discriminated. Aretæus is, by some authors, referred to the age of Nero. His era is indeed uncertain; but the Ionic dialect was not wholly disused even in the time of Hadrian.

An author of this era, and of the methodic sect, whose works are lost, was *Soranus* of Ephesus; and we have reason to regret it, because Galen, who loses no opportunity of criticising the Methodics, speaks respectfully of Soranus. They were translated in a barbarous style by Cœlius Aurelianus, an African; but even in this dress they have reached us in an imperfect state. Yet from Cœlius we have the only systematic and connected view of the methodic doctrine; for by Soranus only it was brought to a perfect state. As the cycles of the methodists are often mentioned in medical works, we shall add a short description of the meaning.

The cycles were periods supposed to consist of three days each, or combinations of three, and during these the same plans were continued; but at the end of each cycle the exertions were increased, so as at last to rise to the most active measures. The resumptive cycle consisted of common foods; the metasyncritic of a more acrid and stimulating diet, with frictions, baths, rubefacients, sternutatories, &c. The cyclus vomitorius was distinguished into two, as the vomits accompanied the sparer diet of the first, or the more stimulating diet of the second. Each cycle consisted of four diatriti, though sometimes prolonged to sixteen days; the additional diatriton containing four days.

We have already observed, that, in all the wanderings of the fancy, the natural good sense of physicians occasionally brought them back to the safer road of patient thinking, and accurate observation, which so much distinguished the Hippocratic school, the real μεθοδος of the healing art: but we have now to notice the revolution which for ages gave a stability to the science of medicine, and fixed an oracle, who for more than one thousand five hundred years dictated to the world, and whose decisions were listened to with the most implicit deference. We allude to CLAUDIUS GALENUS, of Pergamus. Galen lived in the second century of the Christian era, and was born during the reign of Severus. He studied at Alexandria, but chiefly practised at Rome, and was the physician of the amiable and benevolent Marcus Aurelius, one of the few emperors who added lustre to the purple. Galen was distinguished, in his earliest years, for a lively fancy and uncommon ingenuity. He attained all the learning of that era, and was soon disgusted with the prevailing systems of medicine. He professed, indeed, to select from each what was most valuable; but has almost exclusively confined himself to commenting on and illustrating the works of Hippocrates, which he thinks succeeding physicians had either misunderstood or misrepresented. Yet he seems to have taken the qualities of the four elements from Athenæus; and though Hippocrates mentions somewhat equivocally, the Spirit, he apparently borrows the vital, animal, and natural spirit from the Pneumatics. Galen wrote very diffusely on every part of medicine; but he added only dress and ornament to the system of Hippocrates. In fact, minute distinctions, refined speculations, and abstract reasoning is the whole for which the medical world is indebted to him. They did not lead Galen himself from the path of truth; but they had the most fatal influence on his successors, who speculated when they should have observed, and reasoned when they should have acted. The doctrine of concoction, the most fatal idea which ever occurred, was completely established in the school of Galen.

The splendor of Galen's fame dazzled his cotemporaries and successors, so that we find few who afterwards dared to think beyond his circle. *Quintus Serenus Samonicus* wrote, in Latin verse, on medicine in the following century; but whether that was the work of the father or the son is still doubtful; nor does its real merit call on us to enlarge on it. *Alexander Aphrodisæus*, who wrote a treatise on fevers, and a work intitled Interdicta Medica, and Problematica Physica, scarcely deserves more attention. *Oribasius* has been styled the ape of Galen. The twenty-fourth and twenty-fifth books contain, indeed, an abridgment of Galen's anatomy; but we find a description of the salivary glands, which, if known to the Pergamenian, has never reached us in any of his works. Oribasius, who lived till near the latter end of the fourth century, was the physician of Julian, and his collections were completed about the year 360. It is not, however, true that he collected from Galen only; for even in his first fifteen books, the only ones we possess, except the anatomical ones, other authors are mentioned, and we find numerous quotations from preceding physicians. Oribasius was not only a physician, but high in the confidence of the emperor Julian, who appointed him the Quæstor of Constantinople; and though in the succeeding reign he was for a time disgraced, and even banished, his real merits were too considerable to admit of the continuance of his exile.

His anatomy, we have observed, was copied from Galen; but the remaining books of his medical collections, amounting, it is said, in the whole to seventy-two, besides his quotations from authors now lost, contain some practical remarks of importance. His recommendation of scarifications, instead of cupping, is not, we think, one of these; for ligatures, bathing the legs, and the application of stimulants previous to the use of the lancet or needle, answered the same purpose as the rarefaction or exhaustion of the air.

Oribasius first described the singular madness styled Λυκανθρωπια, in which the patients avoid the society of mankind, haunting the most desolate places, and wounding themselves with stones, &c. Some critical disquisitions have been employed to determine whether they "*open*" the tombs, or only "*dwell*" among them. The question is of little importance, though, as it is confessedly the disease mentioned in the New Testament, if we recollect rightly, the possessed are there said to "*come out* of the tombs, exceeding fierce;" and the tombs of the pagans were generally open to receive the oblations to the manes of the deceased. As we have pronounced the question to be a trifling one, we shall not enlarge on it. Oribasius wrote four books also on diseases, and several others, which were chiefly abridgments of Galen. Some receipts, quoted by Ætius, seem to be his own; but the commentaries on the aphorisms of Hippocrates, attributed to him, are of a much later era. Excepting the collections, the nine books of his synopsis, addressed to the younger Eustathius, and four, De Euporistis, to Eunapius, are the only works which remain of this author, who certainly merits more attention than he has received.

About the same era *Nemesius*, bishop of Emesa, abridged the physiology of Galen, intitled Natura Hominis. *Vindicianus*, the archiater of Valentinian, addressed to that emperor his Carmen Epistolare; and *Theodore Priscian*, the disciple of Vindicianus, and archiater to the second Valentinian, wrote his four books De Curatione Morborum. The last work has been attributed to *Q. Octavius Horatianus*, the disciple of Priscian, and under his name the treatise is annexed to the Strasburg edition of Albucasis Surgery. Several authors of this century, whose works are still extant, merit little more than the mention of their names. The chief is *Marcellus Empiricus*, who wrote De Medicamentis Empiricis; *Plinius Valerianus*, whose work De Re Medica is referred by Gunzius to *Siburius*; *Vegetius Renatus*, a different person from the Tactitian;

and *Cœlius Aurelianus*, already noticed, the last medical author who wrote in Latin.

After the lapse of nearly one hundred years, in which scarcely the name of a physician is recorded, we meet with *Ætius of Amida*, of whose sixteen books (iv tetrabiblia) but eight have yet been published in Greek, though we possess the Latin version of the whole. He is chiefly distinguished as an original writer, by his chirurgical operations, and in this line his practice seems to have been extensive. In medicine he recommends punctures in dropsies; but the observations on these subjects are taken from Archigenes and Leonides. His remarks on cauteries, both actual and potential, are more peculiarly his own He advises them freely in many complaints, and directs numerous drains to be made. To keep these open by tents seems to have been the improvement of a subsequent era; for in many places where caustics are recommended by Ætius, tents could not be used. Setons are only mentioned 800 years afterwards. From Leonides he also describes the dracunculi, by modern authors called the *venæ medinenses*, an appellation given by the Arabians. Ætius, who had studied at Alexandria, introduced much of the Egyptian pharmacy, and was particularly fond of external applications. He introduced also charms and amulets, so common in the same country; and, though a Christian, and an officer of the emperor's household, seems not to have been exempt from credulity. Many boasted and high-priced remedies he has taught us to prepare; but adds no opinion of their utility, though of other medicines, and indeed generally of those truly valuable, his encomia are usually warm.

Palladius of Alexandria was but a few years later than Ætius, and his Synopsis of Fevers, as well as his Commentaries on different Parts of Hippocrates, are still extant He differs, however, little from the system of Galen, and merits no particular notice.

Alexander Trallian, so called from his native place, Tralles, a city in Lydia, was nearly of the same era, and a writer more original than any that have occurred to us since the days of Galen. He limits his observations to the signs of diseases and their remedies; and though he shows too great confidence in the efficacy of some apparently trifling medicines, and is particularly fond of amulets; yet in many parts of his work, he displays great judgment, and extensive experience. His observations on bleeding in syncope are valuable, and those on the use of emetics, particularly of purgatives in fevers, highly useful. He is apparently the first author who mentions rhubarb; but he certainly means the Rhapontic, as he speaks of it only as an astringent. The white hellebore had at this period been neglected, and even Alexander speaks slightingly of it: nor was it again recommended till *Asclepiades*, more than fifty years afterwards, employed it with success Alexander was by no means a servile follower of Galen. On the contrary, he frequently differs from him, and in some instances, particularly the treatment of hectics, boldly pronounces him wrong.

Though christianity was now established, and the physicians lately mentioned were Christians, yet the next author was the first monk who wrote on, and probably practised, medicine. We shall call him *Theophilus*, though, from his sanctity or his talents, he was also called *Philotheus* and *Philaretus*. There is, however, a singular confusion arising from the name of Theophilus, which was given to a cotemporary of Alexander, called by him *Jacobus Psychrestus*, or *Psychochrestus*. The latter was by birth an Alexandrian, archiater to Leo the Thracian, and a count of the empire If they were, therefore, the same, he must have become a monk in his latter years, a circumstance by no means uncommon. Jacobus Psychrestus left apparently behind him no medical work, though Theophilus, who by some historians is placed in the beginning of the seventh century, and certainly a different person, is the author of five books De Fabrica, in the collection of Celsus Crassus, and a tract De Urinis, the first work professedly on the subject, in Henry Stephens' Principes. His scholar, *Stephen of Athens*, was the author of a Commentary on some part of Galen's works.

Paulus of Ægina is the last author that claims our parcular attention. He flourished near the end of the seventh century, and was the first physician who, by his particular notice of female diseases, appears to have paid very particular attention to them: indeed he seems to have practised midwifery. In medicine he does not merit any great regard; but his surgical observations are valuable, and often new. What relates to lithotomy and herniæ are the most important parts; but the observation on aneurisms are sometimes new, and generally valuable.

Some Byzantine physicians, dimly seen through the obscurity of the darker ages, we may shortly mention. *Nonus*, who lived near the end of the tenth century, by the command of Constantine Porphyrogenetus, wrote an Epitome of Medicine, chiefly taken from Ætius, Alexander, and Paulus; and near a hundred and fifty years afterwards, *Symeon Lethius*, who held some office in the palace of Antiochus, wrote a Syntigma de Ciborium Facultate, in which he copied chiefly the work of *Psellus*, who was his cotemporary Both treatises still remain, but are of little value. Demetrius Pepagomenus, near the end of the thirteenth century, was a distinguished author on hawking; but he was the physician of Michaelis Paleologus, and left also a Treatise on Gout. Somewhat later lived *Myrepsus*, the author of the *Antidotarium;* and the scene closes with John, the son of Zachariah, honoured with the title of *Actuarius*, nearly answering to what we mean by physician in ordinary, in the court of Andronicus Palæologus. His six books on the Methodus Medendi, and his Treatise De Urinis, have been commended by some practical authors, and the latter was thought, by H. Stephens, worthy of a place, in his valuable work, among the Principes Artis Medicæ. All his works are in a great measure compilations from his predecessors, but there are some original observations respecting the palpitation of the heart, in which Actuarius seems first to have recommended bleeding and purging. He is also the only Greek physician who speaks of the milder purgatives, as senna, manna, cassia, and myrobolans. The pods of the senna were then only employed, and it was brought from Syria under the name of a fruit. These medicines were professedly borrowed from the Arabians, whom he calls barbarians. He mentions sugar also, and what seems to have been the distilled water of roses, derived from the same source. Indeed

distillation appears to have been known prior to the era of Actuarius, which was probably about the end of the eleventh century.

We have greatly regretted, in this long career of the Grecian medicine, that no author has connected the revolutions of this science with those of the Grecian philosophy. We perceive, in every step, how greatly they would illustrate each other; and, but for the extent to which our article would be thus drawn, we should have enlarged a little on the connection. We have, in this part of our history, traced, with anxious care, the succession of the different sects, the influence of prevailing opinions, their alternate fashion or decline, and while these, with some neglected portions of the history, have detained us, we have certainly omitted, not without design, what may be found in every common author. We ought not to conceal that the history of medicine has not hitherto been that of a science. We have seen the scattered limbs: we wished to see them connected, so as to form an entire body; and of this connection we have endeavoured to give the outline.

While we have less anxiously detailed the medical opinions of philosophers, we must not omit some observations of Dr. Friend, whose history is chiefly filled with discussions on different portions of ancient medicine. He remarks, that the historian Procopius was probably a physician, from his minute and scientific description of wounds, and of the plague. He adds, too, that the professional character of St. Luke is obvious, not only from his more polished language, but from his expressions relating to diseases. The curiosity of the subject has led us to pursue it, and we certainly find, in the relations of the cures effected by the miraculous power of our Saviour, the elegant terseness of Aretæus.

When science declined in the west it again rose in the east. In pursuance of the plan just mentioned, we have not omitted to notice the gradual steps by which medical knowledge gradually approached its former cradle, seeking, in its decline, the protection it had received in its commencement. In the later ages of Grecian medicine we perceive a strong predilection for an education at Alexandria, and we have already traced its progress in Asia, as we catch transitory glances of its occasional appearance. Alexandria, once the receptacle of the famous library, burnt by accident during Cæsar's attack, received, in return, by the bounty of Anthony, the famous collection of Mithridates, already mentioned as a legacy to the Roman people; and even at the commencement of the ninth century its professors were highly celebrated. Other circumstances favoured the progress of medicine in the east. When Valerian was conquered by Sapor, the king of the Persians, and carried captive to his new city, Grandisapora, he was followed by many Greek physicians. So early as the sixth century a medical school was founded in that city, and an hospital established in it. Hospitals were, indeed, not unknown in the latter ages of the Roman empire, and seem to have been first established before the reign of Justinian. Its school was highly celebrated, and much frequented by the Arabian physicians, even at the time of Mahomet; but Persia was conquered by the Saracens in the year 460, and medicine was scattered by their means through the wide extent of their tributary regions, even to the confines of Spain. Previous, however, to the conquest of Valens, Sapor had married the daughter of the emperor Aurelian, and probably the medical knowledge of Greece had already attracted the attention of the Persians. They left, indeed, no traces of their acquisitions; for the earliest eastern medical authors were Syrians. *Aaron*, the presbyter, first collected what he called the Pandects of Medicine, from the Greek, about the time of Mahomet, A. C. 622, which were only translated into Arabic by Masergawaihus, in 683. Near a century afterwards we find Alexander, the second caliph of the house of Abbas, requiring the assistance of *Bactishua*, who resided at Grandisapora; so that this city still retained its character for the acquisition of medical science, and the family of Bactishua continued famous for many succeeding generations. To them the eastern nations were indebted for many translations of the Grecian authors into Syriac and Arabic.

All these translations, and even *Honain's*, were very imperfectly executed, though the latter, disgusted by the treatment of Mesue, had retired two years to the Grecian islands, where he had cultivated his knowledge of their language. Indeed, on all occasions the Arabians take the liberty of altering the arrangement, and often the sense, of the Greek authors, so that they can scarcely be recognised in their new forms. The names of plants are also so much changed that many are, at present, unknown.

Mesue was the first author, after Aaron, who wrote on medicine. He also is styled a Syrian, as he probably wrote in the Syriac language, and was apparently educated under one of the descendants of Bactishua. Yet, when we compare his works which now remain with the criticisms of Haly Abbas, we are obliged to remove him to a later date, or admit, with the best historians, that there were two or more of that name, of very different periods.

Serapion seems to have been next in succession to Mesue, and was probably the first medical author who wrote in Arabic. Historians have differed also about his era, and the knot, as usual, has been cut, by supposing that there were other authors of this name; for Serapion is only a Patronymic; but Haly Abbas, who wrote near his time, quotes his works as they have been handed down, and places him between Mesue and Rhazes. In other respects he merits little attention.

Rhazes, the great luminary of the Arabians, flourished about the middle of the tenth century. To him it is supposed that we are indebted for the first description of the small-pox; and, in fact, he is the first author on this subject which has reached us, though we are informed that it was publicly described by a preceding physician, *Amrou*. The two great works of Rhazes are the *Continent*, and the ten books styled *Almanzor*, addressed to Mansor, king of the Corassani. The first appears rather a common-place book, in which facts and observations are obscurely noticed for his own recollection. The second is a full and complete view of medical science, taken almost exclusively from the Greek physicians. Rhazes, however, was the first author who spoke professedly of the diseases of children, and he first described the spina ventosa. The Arabians are said to have been the earliest physicians who applied chemistry to medicine, and chemical remedies have been attributed to Avicenna. We were therefore anxious to

point out the early traces of this connection in the Greek authors, and Rhazes certainly, in many instances, spoke of chemical preparations.

Haly Abbas, or Haly, the son of Abbas, we have already mentioned. His only work is styled Almaleki, or the Whole Book of Medicine. One half of this work is theoretical, and the other practical. Haly, however, is chiefly valuable for his remarks and criticisms on Mesue, Serapion, and Rhazes. Liberal in his censures on others, he has added nothing from himself to the stock.

Avicenna is the most celebrated author of the Arabians. He flourished early in the eleventh century, and was born at Bockara, in Chorasan. He was the last of the Arabian authors of medicine; for his successors were born in Spain, where the Saracens were then triumphant, and little communication seems to have been held between the eastern and western empire. Avicenna has, however, little of his own: he was merely a compiler, though his chief work, his Canon, was for centuries commented on, and the syllabus or foundation of the lectures in every university. Of *Albucasis*, undoubtedly the same author who is sometimes styled *Alzaharavi*, we have already spoken in the history of surgery. It is, therefore, only necessary to mention him, as it preserves the connection of the Arabian authors, and to add, that he flourished near the end of the eleventh century.

Avenzoar, or the son of Zohr, was an Arabian of the western empire, born at Sevil, in Spain, apparently about the beginning of the twelfth century. He lived to the very advanced age of a hundred and thirty-five, and continued his practice to the last, from which he has been called *Experimentator*. The term probably implies the *experienced*; for he deserves not the title of *empyric*, which, in the opinion of some authors, this term implies. He treats of medicine in a rational, often in a dogmatic, manner, and seems first to have described the inflammation of the mediastinum, and of the pericardium, as well as the dropsy and empyema of the pericardium. It is a singular remark, that he cannot follow Galen's advice in giving asses milk in consumptive cases, as it is unlawful for the Saracens to drink the milk or eat the flesh of this animal, and that he, therefore, substituted goat's milk. It is only, however, to the stricter sects of Mahometans that the ass is an abomination; but this circumstance may account for the use of goat's milk. He first recommended the bezoar, and seems to have been particularly expert as a surgeon. From some parts of his works we should even suspect that he had dissected dead bodies. In his time, surgery, pharmacy, and medicine, seem to have been practised by different persons, and neither Avenzoar nor Averhoes quote the Arabian physicians of the east. The little connection between the Arabians of the east and west seems to have been owing to a political, or rather a religious, dissention respecting the true caliph.

Averhoes was also a Spaniard, who flourished early in the thirteenth century; but rather distinguished for his Commentary on Aristotle than for his medical writings. His Compendium Medicinæ, however, in seven books, has been highly commended by some authors.

Mose Ben Maimon, a scholar and a cotemporary of Averhoes, was born in Corduba; and, though a Jew, was archiater of Saladin, the sultan of Egypt. He was the author of a Treatise on Regimen, addressed to the sultan of Babylon, and of Aphorisms, according to the Doctrines of Hippocrates and Galen.

The works of some other Arabian authors are extant, particularly of *Abenguefit, Bulcasem, Jesu Haly, Canamusali*, &c.; but we cannot find that they contain any thing peculiarly interesting to the progress of the science. Indeed, during its cultivation in the east, we find little added to the stock. The Arabians certainly introduced many new medicines, made some additional progress in medical chemistry, and mitigated the severity of the Grecian practice. The new diseases, which they described, were few. The small pox was a native of the east, and the others were in no respect highly important. They seem, therefore, to have cherished, and but slightly to have animated, the spark. The Arabian writers refine, indeed, with great fancy, and distinguish with the most minute precision; but their metaphorical and ornamented language they have wisely left to their poets. Perhaps, from the example of their Grecian masters, they are often concise, and generally reason with correctness and precision.

Thus while medicine was declining in Greece it was kept alive in Arabia; but it seems scarcely to have survived the thirteenth century in either. This was the period of its downfall. Europe and Asia were obscured by the cloud of ignorance, and the arts of war or poetry were alone cultivated. European genius began first to penetrate the obscurity; but in this cloud of barbarity we for a long time catch but a few, imperfect, rays. As we found medical science stealing by almost imperceptible steps from Greece to Asia, so we shall here perceive, that, from the western extremity of the extensive empire of the Saracens, it gradually expanded to different parts of Europe. It is too much the fashion to refer the spread of knowledge to the Crusades. The human mind wants not such a powerful momentum: the gradual expansion of its own powers will solve the problem. The short distance from Spain to Italy, and the constant intercourse, even at this time, gradually introduced the medical knowledge of the Arabians to the latter country. It has been supposed that Latin, Hebrew, and Arabic professors of medicine were settled at Salernum in the seventh century. This opinion has, however, no well-founded support; but it must have attained some credit, as a school, before 802, when Charlemagne founded a college there. It will be obvious, however, that, at this period, medicine could have gained little from the Arabian authors, since they were then imperfectly known even in the east; so that if, in reality, Salernum was so early a school of medicine, it must have gleaned the little knowledge it possessed from the later Grecians and the Byzantine authors. We are consequently ready to deny this early antiquity of Salernum as a seminary of medicine, and the more willingly, as its first author, *Constantine the Carthaginian*, flourished only at the end of the eleventh century. He did not collect all the accumulating science of this establishment of Charles the Great, but is expressly said to have resided, for a long period of his life, in Babylon and Bagdat. He was appointed secretary to Robert Guiscard, duke of Apulia, about the middle of the eleventh century; and there is much reason to believe that Salernum was established as a medical school about that time. Its appellation, Civitas Hippo-

cratica, shows that it was considered to be a scion of the Grecian stock; and, however barbarous the Latin style of the African may appear, it is said that he was intimately acquainted with Greek. He was afterwards a monk of Mount Cassino, thence called Cassinus, and dedicated his work, *Breviarium dictum Viaticum*, to its abbot, Desiderius, raised afterwards to the purple by the name of Victor the Third. Several other works, particularly the Antidotarium, and the Loci Communes, were written by him; but the substance is copied from the Greek and Arabian authors: the latter is apparently a servile translation of the work of Haly Abbas, though professedly an original, and, as he remarked, greatly wanted. The *Schola Salertina*, a Treatise on Diet and Medicine, in leonine verses, was probably composed very early in the twelfth century, and was for a long period highly celebrated. It is said to have been written by John of Milan, and was dedicated to the duke of Normandy, son of the conqueror.

Salernum perhaps justly boasts of its priority as a medical seminary, and the school of Montpelier is the next, the foundation of which Astruc, in his memoirs on this subject, refers to 1150. That of Paris was founded, according to Naudæus, by papal authority, in 1220, and the school of Bologna in the following century. To this chronological series there is but one objection, that *Ægidius*, whose Latin hexameters on *the Virtues of Medicines, the Urine, and Pulse*, written towards the close of the twelfth century, is somewhat severe in his reflections on those who were educated at Montpelier; a circumstance which must have arisen, if the dates are admitted, from personal opposition, as the character of the school could not have been, at so early a period, ascertained.

Few, however, were the physicians of character educated in these seminaries. One road to fame and fortune was obstructed; for the chief physicians of kings and princes were Jews; nor was the intolerance of the Spaniards so rigid as to reject this nation when their own lives and healths were in danger. The emperor Frederick II. attempted to restore the study of anatomy. In his Treatise on Hawking he introduced several valuable remarks on comparative anatomy, and instituted public dissections and demonstrations. Fifty years after this attempt, his laudable career was checked, in 1300, by a bull of pope Boniface, who forbad the dissection and preparation of the human body. To this edict Mundinus alludes, when he declines a demonstration of the internal parts of the ear; because it is necessary to to separate the bones by boiling, which "*propter peccatum dimittere consuevi*." Mundinus was an anatomist and a physician of considerable celebrity: indeed, so great was his credit, that any observations on the structure of the body, which did not coincide with his, were supposed to relate to lusus naturæ.

Arnold of Villanova and *Peter Julian*, the *Spaniard* (afterwards pope John XXI), were both celebrated for their knowledge of medicine, about the end of the thirteenth century. The former has been chiefly commended for his chemical knowledge; but, though none of his works remain, it is certain that he was not less famous as a practical physician. The latter was the author of several works, both physiological and practical; but all are copied from the Arabian or the Greek authors.

Gordonus, a Scotchman, was professor at Montpelier early in the fourteenth century, and his system of the practice of medicine, entitled *Lilium Medicum*, contains some remedies not yet wholly forgotten. These are the troches, which still bear his name, and the pulvis ad guttetam. *Petrus de Apono*, an author of the same era, was one of the first professors in the university of Padua, then recently established. His chief credit was derived from his chemical remedies, of which very few were invented by himself. He practised at Bologna, and attained a high degree of reputation, with a handsome fortune. Apono commenced a supplement to Mesue, which *Francis of Piedmont*, in the service of Robert, king of Naples, continued.

Another physician, in the service of Robert, was *Joannes Sylvaticus*, styled Pandectarius, from his Pandects, or Medical Vocabulary. He was a Mantuan by birth, and educated in the school of Salernum; but his Pandects are written in so singular a style that they contribute little to their professed object, the explanation of the Greek and Arabian authors, and actually require a dictionary to explain them.

Nichol. Nicolus de Falconius, a Florentine, was nearly a century later, and must be distinguished from Nicholaus, a Florentine also, but of a later date, a celebrated patron of science. He appears to have been a physician of no common genius and learning; but his most distinguished work is his *Sermones Medicinales*, published at Venice, in four volumes folio. The last author we shall mention is *Valescus de Tarenta*, who has given a compendious view of the doctrines of the Arabians, and of the physicians of the middle ages. He lived in the fifteenth century, and is one of the few authors who give opinions of their own. He appears to have been an able and experienced physician.

During this obscurity, Greece still retained her former treasures, and could boast of a few physicians to whom they were not unknown, and by whom they were not neglected. A warlike race, whose martial spirit was aided by enthusiasm, burst at once from its fastnesses, and soon overwhelmed the Roman empire in the east. The Turkish emperor, Amurath, in the year 1430, took by storm Thessalonica, from whence *Theodore Gaza*, a man of considerable learning, escaped, with some of his literary treasures, to Italy. When Constantinople was taken, a few years afterwards, and the Byzantine kingdom wholly overturned, many others followed his example. All were warmly received by Lorenzo de Medicis, and the manuscripts, thus rescued from oblivion, soon disseminated the stores of Grecian poetry, history, philosophy, and medicine. The human mind was roused from its lethargy by many other events in this century. The invention of printing facilitated the communication of knowledge. Colon and de Gama discovered, or facilitated, the access to either India, from whence the materia medica gained new acquisitions. The Scurvy, first observed in Germany, in 1482, the Sudor Anglicanus, first noticed about the same time, followed by the Lues venerea, and the Morbus petechialis in Italy, equally animated the spirit of inquiry to prevent or relieve the effects of such afflicting scourges. During this era *Fracastorius* and *Massa* were the chief luminaries of the Italian schools; *Sylvius* and *Fernelius* of the Paris: Lommius, the excellent author of the *Observationes Medicinales*, was a disciple of Fernelius, and practised at Brussels. All these authors were warm

admirers of the Hippocratic medicine, and with equal zeal and perseverance endeavoured to revive it. *Botallus*, a Piedmontese of this era, a disciple of Fernelius, archiater to Charles IX. and Henry II. of France, chiefly distinguished himself by his recommendation of profuse bleeding. In this practice he might have found examples both in the medical authors of Greece and Arabia; but evacuations, so indiscriminate and profuse, must be often injurious. The fatal effects of his plans are even yet felt; for, in France, venesection, almost forgotten in England, is still freely and copiously practised. *Duretus*, *N. Piso*, and *Hollerius*, were also French physicians, but with more correct views, under the guidance of Hippocrates, whom they admired and illustrated. De Gorris (*Gorræus*) and *Fœsius* of Dijon were equally able illustrators of the ancients in the *Definitiones Medicæ & Œconomia Hippocratis*; but the most striking features in the history of this era are the attention paid to prognostics, and the publication of select observations and consultations. For the latter we are indebted to Forestus and C. Piso.

As we approach nearer our own times, we shall pass more hastily on; and, as we have explained in distinct articles the prevailing systems of medicine, we shall connect only the historical links, except where we find any important fact omitted or misrepresented. The extravagant and erring spirit which we have in this history so often found expatiating beyond the sphere of sober investigation and patient observation, seems again to wander in the 17th century. In its commencement indeed *Ballonius* and *Riverius* still pursued the system of Hippocrates; and though *Sennertus* endeavoured to unite the doctrines of the Coan school with the more judicious parts of the chemical system which then began to prevail, it was reserved for *Van Helmont* to inundate the whole science with the mysticism of the alchemical doctrines and language. *Paracelsus*, who first introduced chemistry into medicine, was an ignorant boaster, the Jatronice of modern eras, professing to cure all diseases by chemical remedies. He burnt, in solemn state, the works of the ancients, as no longer necessary; and, in possession of the universal medicine to secure immortality, died himself in an hospital at the age of forty seven. He lived near the middle of the 16th century, but then appeared like a single transitory meteor, so that we reserved any notice of his extravagancies till we could combine the whole of the chemical sect. Van Helmont, the next in succession, was a man of superior talents, distinguished by sagacity and judgment which might have been more advantageously directed, but which still render his works, collected by his son, not unworthy the attention of the modern physician. He is considered as the first discoverer of factitious air, to which he gave the name of gas; but Rey had published, somewhat earlier, essays on the cause of the increase of weight in lead when calcined. His son was more mystical than the father, but acute and ingenious, and the friend of Leibnitz. He was succeeded as a chemical pathologist by *Sylvius de le Boe*, whose doctrines of alkalis, acids, and effervescence, even to our own time, disgraced the science. The prevalence of the chemical system, in the school of Leyden, probably led Boerhaave to select some portion of Sylvius' doctrine to fill up his eclectic system; and Hoffman, amidst more judicious and scientific views, returns often with a partial fondness to acids, alkalis, and acrimony. In our own times the chemical doctrines infected Willis and the whole tribe of Boerhaavians; nor are we, at this moment, exempted from the mania, under the more fashionable names of oxygenation and deoxygenation.

This century was however distinguished by exertions more honourable for science. It was the era of the discovery of the circulation of the blood, a subject already noticed, and of the dissections of animals, to ascertain many important points of physiology. In both Harvey was a distinguished and active philosopher; and, while the circulation was decried or opposed by ignorance or prejudice, his other labours were warmly received. *Spigelius*, *Sanctorius*, *Asellius*, *Pecquet*, the two *Bartholines*, and *Rolfincius*, equally promoted physiology, or disseminated the discoveries of others, obtained by their dissections, assisted by the newly discovered art of injections, and the use of lenses; for microscopes, in the complex sense now affixed to the term, were the invention of the following century.

Another distinguishing and honourable feature of this century was the institution of medical and philosophical societies. Our own Royal Society was the first of these, and it was followed by the Academy of Sciences at Paris in 1667, established by the judicious and penetrating Colbert. The Academia Naturæ Curiosorum was at first a private society, and *its* origin is traced from 1652; but it was established, some years afterwards, by the authority of the emperor Leopold, and then styled Academia Cæsareo Leopoldina. Its publications were continued, under various titles, till within these few years. It will fill but a small space to pursue this subject. The Royal Society at Berlin was founded in 1700 by the advice of Leibnitz, and first published its transactions (Miscellanea Berolinensia) in 1710; the Petersburgh Academy in 1724, which first published its "Commentarii" in 1726; the Bologna Society, founded by Marsigli, first published *its* "Commentaries" in 1731. The Breslaw collection, afterwards called Commercium Noricum, was published from 1717 to 1731, under the former title; and from that time to 1745, under the direction of Dr. Trew, distinguished by the latter. The Royal Society of Norway began to publish their transactions in 1771; of Denmark in 1745; and the Royal Academy of Sweden in 1739: the Royal Society at Upsal in 1720; of Bazil in 1751; of Gottingen in 1752; and of Montpelier in 1766. Within the years 1771 and 1792 we have seen philosophical societies established in Hesse, Philadelphia, Brussels, Boston, Ireland, Padua, Edinburgh, Calcutta, and New York. These have admitted into their plan medicine as a branch of natural philosophy, and several medical improvements of importance have been published in their successive volumes. Establishments more closely connected with medicine are also numerous. The first work of this kind was Thomas Bartholine's Cista Medica Hafniensis, in 1662; and a similar one appeared in 1679 at Paris, entitled New Discoveries in every Part of Medicine by Nicholas de Blegny. The Zodiacus Medico Gallicus, in Latin, by Bonnet, succeeded in the following year at Geneva; and in the same year, the lexicographer Blanchard published, in Holland, Collectanea Physico-Medica. The Recueil periodique d'Observations de Medecine appeared at Paris in 1754, and was continued

under the title of Journal de Medecine; but this collection was preceded by the medical essays of Edinburgh, which were begun in 1733, and continued to 1742. These were succeeded by three volumes on a more extensive plan, entitled Essays and Observations Physical and Literary, and by the medical commentaries of Dr. Duncan. Two volumes of a collection entitled Acta Medicorum Suecicorum have appeared, which are not however exclusively medical, and two volumes of collections of a medical society at Copenhagen. The Royal Medical Society at Paris published their first volume at Paris in 1779, and continued their volumes, at irregular intervals, till the year 1788. Four societies have collected medical observations in London; the college who published their first volume in 1768; and their third in 1785; a society who published "Medical Observations and Enquiries" in six volumes, from 1757 to 1784; another society, to whom we are indebted for "Medical Communications" of which two volumes have appeared, commencing in 1784, and concluded in 1790; the Medical Society, whose memoirs are still continued, and have extended to six volumes; and another society, whose collected labours are entitled Transactions for the Improvement of Medical and Chirurgical Knowledge, in two volumes, appeared in 1793 and 1800. A collection also, entitled Medical Facts, has been continued in numerous volumes; and medical journals in a profusion which baffles our enumeration.

The conclusion of the 17th century was distinguished by some of the brightest luminaries which have illustrated this science; *Sydenham, Morton, Baglivi*, and *Boerhaave*, though the fame of the latter was chiefly conspicuous in the next century. Of Sydenham and Morton we need not speak, for their merits are sufficiently known; and the Boerhaavian system we have explained in a separate article. In treating, however, of this venerable and highly respected eclectic, we have mentioned a philosophical sect, whose tenets we have not explained. In fact, the sect fell so nearly within each century, that it was not easy to fix accurately its precise era. The application of mathematics to astronomy by Kepler, and to the laws of motion, as well as to the system of the world, by Newton, led to the opinion that its powers were irresistible, that it might unfold every secret of nature. *Borelli*, at the end of the 17th century, applied this science where it properly admitted of application to the motions of animals, and showed the advantages and disadvantages derived in these motions from the origin and insertion of the muscles. His scholar *Bellini*, in the beginning of the following century, went farther, and, from mathematical data, endeavoured to explain many functions of the human body. *Keil*, a philosopher and a mathematician, rather than a physiologist, calculated from imaginary data the power of each organ, and gave the stomach, for instance, a force of compression which must so overcome the resistance as to destroy its organisation; and *Pitcairn*, with his followers, calculated the ratio of medicines in proportion to that of the constitution. In the principles of medicine of this last author, and in some of the early volumes of the Edinburgh medical essays, this phrensy is carried to a most ridiculous height, indeed so far as to undermine its own best security; for, if such were truths, mathematics had no certain foundation. From the chemists and the mathematicians, as we have seen, Boerhaave drew his theory; but his practice was founded on the sound observations of the Coan sage, and his most respected followers. The fatal doctrine of concoction held its ground, and was supported in all its rigour. Thus fever was not to be checked, but encouraged: most destructive delusion! millions have been the victims to this fancy.

While Boerhaave held the reins of empire, and ruled with a sway almost as absolute as that of Galen, two rivals arose who overturned his apparently well-established dominion. Hoffman and Stahl were rival professors at Halle, yet without acrimony, and without, at least, open opposition. Hoffman was a voluminous writer, but not the founder of a sect; for he does not always reason with consistency, nor are his arguments directed to any definite system. He wanders from the mechanical to the chemical doctrines; but, in the midst of these, directs the reader's attention to the exertions of the vital powers, in changing the direction and the balance of the circulation. Stahl, with scarcely less industry, but with acuteness and talents eminently superior, aimed at changing the whole of the science. He acknowledged, with Val Helmont, a ruling power, guarding the constitution against disease, and repairing every defect which might occur; but, with this superintendance, he considered the human system as a living and an irritable machine, susceptible of various and irregular motions, and consequently of topical congestions. This is the meaning of "spasm," of "tonic motion," and similar expressions; nor can we avoid the suspicion, that when Hoffman speaks of spasm, he means what Stahl styles his tonic motion, for each is attended with topical congestions. Whatever becomes of this idea, it is evident that the germ of this new doctrine gradually expanded. Even Boerhaave, in his later years, did not reject the consideration of a nervous fluid, though consistently with his humoral pathology he considered it as "inactive;" and Gaubius his successor treats at some length of the diseases of the vital solid. Indeed the heresy began in his own family; for his nephew, Kauw Boerhaave, who practised with credit at Petersburgh, considered the influence of the nervous system in his work entitled Impetum faciens Hippocrati dictum. Haller, though chiefly of the mechanical sect, and who is entitled to our gratitude for his industry, rather than his genius, assisted this new revolution by his experiments on irritability; and Dr. Cullen at last constructed, on this ground, a system highly ingenious, though, like many first efforts, sometimes too refined, perhaps occasionally incorrect. See BOERHAVIAN and CULLENIAN SYSTEMS. On the same foundation Dr. Brown has still farther refined; but, while the Boerhaavians made the human body wholly material, he considers it as wholly spiritual, created only by heat, motion, and other stimuli. See BRUNONIAN SYSTEM.

Of living physicians, as of surgeons, it is not "our hint to speak;" nor indeed, in the present era, have we any revolution to describe, or any marked improvement to praise. When, in the history of surgery (see CHIRURGIA), we pointed out the objects of the surgeon, we discriminated those of the physician. We there engaged also in a slight disquisition on the talents and acquisitions necessary to the surgeon. This calls on us for a similar explanation; yet, as coming "nearer to our own business and bosoms," it is a task we would

wish to decline. Necessity, however, imperiously demands it; and the consciousness of holding the mirror up to what appears to us the character of an accomplished physician, will be our best shield against the censure we must consequently encounter.

It would appear superfluous to say, that a physician should be at least acquainted with the ancient languages, did we not daily see pretenders to that character without even a knowledge of their own. The observations of Hippocrates and his followers should be read in their own language; and we would engage to promise a classical scholar the highest literary entertainment from the simple elegance of the Coan sage, the polished eloquence of Galen, and the expressive terseness of Aretæus. Among the Latins his prospects are less alluring; and the Augustan elegance of Celsus must atone for the barbarisms of Cœlius. Yet in more modern times Lommius, Read, Friend, Heberden, and Baker, will compensate for Stahl and Brown; and the sterling sense of Haller, Gaubius, and Burserius will instruct, if their language should for a moment disgust. The modern languages are equally necessary, at least the French and the German. It is indeed to be regretted, that vernacular tongues are so much employed; for no position is more truly unfounded than that what deserves to be translated has already appeared in an English dress. The Italian is perhaps less necessary; yet Sarcone, we believe, still retains his original garb, and different modern writers of that country seem to merit more attention than they appear to have received.

If, as has been supposed, the practice of medicine requires the active exertion of the intellectual powers with their full energy, it will at once be obvious, that every method by which the physician's views are early contracted must be injurious. For this reason, to spend the first period of his life in an apothecary's shop has appeared a plan of the worst tendency, for this is the time in which he must endeavour to attain an intimate acquaintance with the classics, a competent knowledge of mathematics and of natural philosophy. Man, the most glorious work of the Creator within our limited observation, is not indeed regulated by the laws of matter and motion; but each must be often taken into our views, in reflecting on the deviations from health and the means of restoring it; and, so intimately is every part of nature's works connected, that we cannot draw the line where the vital powers begin, and those of matter and motion end. Mathematics are highly necessary to enable the student to follow the mechanical philosopher, and to understand the mechanical physician; for it is highly disgraceful in the modern physician not to be acquainted with the principles of every sect, or unable to comprehend their mode of reasoning. Without mathematics, Haller, Hamberger, Bellini, Van Swieten, and Sauvages will be often unintelligible. The utility of mathematics is not confined, however, to their aids in pursuing other objects. They accustom the mind to close, abstract investigations; give a habit of connected and accurate reasoning, of connecting consequences with premises by their strict relations, rather than by loose analogy. In these views we have often reason to regret the neglect into which the mathematics have lately fallen.

Natural philosophy is highly necessary, independent of its connection with matter and motion. We are advancing rapidly into those branches where, as in the human body, we see effects without being able to comprehend causes; we mean in the sciences of electricity and galvanism, and have reason to suppose that the discoveries in these will, at no great distance, materially illustrate the functions of the human system. It is disgraceful not to be intimately acquainted with each, and, in the acquisition of either, mathematics are useful, if not necessary. The great supports of this position are the papers of Columb and Van Swinden. Another assistant in acquiring this habit of close reasoning is logic, a science essentially useful, though, in consequence of its abuse, too much neglected. When properly regulated, it gives the distinctions so necessary to the clear enunciation of a proposition, and the conduct of the reasoning either in support or in opposition; and it leads the mind, by easy steps, to detect the fallacy of a too unlimited statement, of an unsuspected subterfuge, or of inconsequential reasoning. Were logic more generally studied, many bulky volumes would neither have tired our patience, nor disgusted our judgment. Fatal as its neglect has been in every science, it has not been more severely felt than in medicine.

Of chemistry we need not now speak: it is acknowledged to be an essential part of the physician's education; nor should any science which is supposed ornamental in a gentleman be omitted. Geography, for instance, may appear far from a necessary branch of medical knowledge; but it would be disgraceful to speak of the ipecacuanha as a production of Russia, or the cortex peruvianus of the arctic circle. A knowledge of botany is highly necessary, especially an intimate acquaintance with the natural families, as it will often enable a physician to apply his indigenous species of plants to useful purposes where the exotic is wanting.

All these are, or should be, preparatory sciences, for medicine itself is a study which will fill all the time usually allowed for its attainment. Where then can this varied knowledge be acquired? not behind the counter; not in dispensing the prescriptions of others; not in staring at diseases, without information, or without principles. In this way, the student either attains no knowledge or crude imperfect ideas, which he can scarcely ever correct; or, if correction is in his power, it will require more trouble than the acquisition of juster notions. This kind of education also narrows the mind in another view. We look with some partiality to our earliest instructor; our first ideas stick to us with peculiar force, so that it is of consequence where they are acquired. Those who are accustomed only to a narrow circle cannot easily expand their ideas beyond it, as the native of Switzerland thinks his valley scarcely less than the whole world. We do not indeed contend, that able and enlightened physicians have not, at times, escaped from the shop; or, on the other hand, that the deepest and most profound philosophers have been the best practitioners. Exceptions *prove* a general rule; but some distinctions are requisite in the full discussion of this question, which we shall soon consider.

We have, in different parts of this work, hinted that a physician should be, from his earliest years, educated with the view to his future profession. If the best parts of his life have been directed to other pursuits, he will seldom acquire that extent of information, and readiness of application, which the practice of his profession

requires. In the most advanced period of his life, what he may have seen at his first entrance into the study may happen to be applicable, though, through the whole interval, it has been never necessary. It must not be supposed, that the most splendid abilities or the deepest knowledge are *always* requisite. Many diseases are obvious in their causes, appearances, and treatment; but, on the other side, many serious complaints assume, at first, a common form, and it requires no little sagacity to trace them in their bud; no little knowledge to obviate the fatal consequences. Were it always possible to say whether a disease was common, great abilities or extensive knowledge might not be necessary; and we thus find physicians with little real skill, but with policy and address, pass through life with credit, sometimes with the highest applause. It is not however enough to possess knowledge, but the mind should be ready and active in its application. It is often necessary to adopt at once a plan, and to pursue it with active decision: it is necessary to weigh contending difficulties, and at once to seize the path where the fewest or the least important appear, or where the inconveniences are counterbalanced by the advantages. This rapidity of decision, the result of great and extensive knowledge, as well as readiness of resource, is often equally the offspring of ignorance. No difficulty can be experienced by those who are unable to anticipate danger; and doubt, the consequence of different plans contending for superior eligibility, can scarcely be felt by those who have none. Physicians are called on, in general, to act with this prompt decision; and to hesitate is usually accounted a mark of ignorance. A man must have merited the confidence of the world before he can require time for consideration, and his reputation be firmly established before he can own himself at a loss.

Readiness of resource is partly owing to habit and long experience; but it may be easily acquired by a ready arrangement of ideas, and clear distinct views. The able and experienced physician, who can at once comprehend the object to be attained, will, at the same moment, perceive the various methods by which it may be effected, and he has only to choose the most convenient and the best adapted to the habit or idiosyncracy of his patient. In his progress new views will generally open, and the soundest judgment is shown in steering between the opposite extremes of varying the plan according to the variety of symptoms, or obstinately persisting in it, notwithstanding every change of appearance. The first is pleasing to common observers, as it shows diligent attention; but it is a proof of weakness and indecision. The last, perhaps the most venial error, is the effect of too great confidence; and, unless accompanied with extensive knowledge which dictated the first opinion, and an acute sagacity in discerning the effects of the medicines, is scarcely less injurious.

It has been supposed, that extensive reading rather impedes by overloading the mind, than assists by giving information. Reading, however, with judgment and discrimination will produce no such effect. The mind should be so regulated that each new fact may be combined with the former stock, or, if in opposition, reserved for subsequent mature reflection. It will then come in aid, to limit, to confirm, or to invalidate preconceived opinions. If reading and practice proceed, *pari passu*, the advantages will be still more considerable. Each new observation may be soon brought to its proper test, and its value consequently justly appreciated. Facts in medicine have lately accumulated so rapidly, that we are oppressed by the load rather than informed by the substance. To discriminate between the true and the false, the important and the trifling ones, is no easy task. To say that any author states as a fact what he does not know to be true must appear harsh, perhaps unjustifiable; but the internal evidence often shows, that the case cannot have existed as the *writer* (we should have said the *author*) describes. When we find the symptoms loosely detailed, the necessary connections omitted, the effects of medicines imperfectly or inconsistently described, we may rest assured that it is the manufacture of the closet. When we find violent complaints cured by the most inert remedies, we may be equally certain that the violence of the symptoms are magnified, or the real effects of the medicines disguised; and, as has been often hinted, when an inventor describes his plan as infallible, suspicion should open all her eyes to detect the fallacy; yet many such deceptions occur with no culpable intention. A young sanguine practitioner seems to think every case the same, and always finds wonderful benefit from his plans. When he reviews them with a calmer, more experienced eye, he doubts whether they have been so successful as he supposed, or indeed whether they have succeeded at all. This is not indeed a singular case: it is the unavoidable progress of the mind from youth to age, from confidence to doubt, from hesitation to scepticism.

The mind of the physician should, in the most arduous and difficult circumstances, be unruffled. Doubt and hesitation should never be seen in his countenance, or in unsteady, vacillating councils. In the midst of uncertainty he should be calm. In the most adverse events, while he may express his surprise, he should never appear without his resources, nor until the case be wholly desperate should he suffer those around him to despair. For doubt and apprehension of the event there may be a more early foundation, and suspicions may be cautiously suggested that, should any given remedy fail, the danger would be increased.

In emergencies, friendly and affectionate anxiety may suggest additional advice, or a remedy of a doubtful quality and uncertain effects, the boasted panacea of some fashionable quack, recommended by an archbishop, a judge, or any other old woman; for, in such circumstances, each appellation is synonymous. No physician, whatever may be his character, is justified in refusing professional assistance, when required; nor, to his coadjutor, in this respect, ought he to withhold whatever his former experience with the patient has taught him. If he gains from his assistant, the patient has the advantage; it is his fault if the patient suffers. In every consultation it should be known whether the first or the second has the implicit confidence of the patient and his friends; and the conduct should be suitable.

In the administration of a quack remedy more caution is necessary. It should be known whether it is a mere name without effect, or whether it has any decided positive power. If the former, it may be indulged; nor is it a great sacrifice, in case of a fortunate event, that the medicine has the credit, if, in contrary circum-

stances, the friends of the patient feel satisfied that every thing, which art could devise, has been attempted. This doctrine we know will not be popular among physicians; but they ought to recollect, that to cure their patient is their first object; to gain fame, a secondary one. If indulged with their favourite remedy, they will agree to combine other means; confidence will be supported, hopes raised, the spirits cheered; and, in case of a sinister event, the candor and liberality of the practitioner will secure general esteem. Yet he would merit the severest censure, if, indulging such fancies and prejudices, he omitted, for a moment, the efforts which he yet retained. The conduct we recommend is only justifiable where the case is desperate, or the boasted panacea inert.

In some circumstances, however, the remedy is active, and the ingredients well known. The physician must then decide whether it is adapted to the complaint, or whether its effects may not be too powerful. When he has stated, fully and impartially, his opinion, the friends or the patient must determine. We think, that he is not justified in leaving, as has happened, the patient to his fate. It is rather his duty to look on, to watch, to regulate, or correct any errors. He may yet save the devoted victim from destruction, from falling a sacrifice to prejudices either his own or his mistaken friends.

There is yet another situation in which an active quack medicine may be allowed. In continued chronic complaints the patient is often weary of his physician, and willing to try the recommendation of some interested adviser. He has, for instance, been using a mercurial alterative, and wishes to try Spilsbury's drops. They are no other. Why then may he not be indulged? Low indeed must be the credit of his physician, if he should suffer by adding one to the many boasted cures performed by this medicine, which is only the hydrargyrus muriatus in small doses, a preparation of mercury generally employed. Yet we must repeat, that, in every such instance, the physician is inexcusable if he do not guard the patient against any probable inconvenience that may result from the supposed qualities of the secret remedy, and suggest the best methods of preventing them. These few remarks we have suggested as a kind of supplement to the very liberal and judicious observations of Dr. Gregory in his most valuable lectures on the "Duties and Qualifications of a Physician," and to this work we would refer the young practitioner for his more general conduct.

Had we room, we might enlarge a little on the *policy of medicine.* Hoffman has left us a dissertation intitled Medicus Politicus, though its object is different; but the art in this age is greatly improved, and an amusing treatise, *copied from life*, might be easily written. Our object is however to make the practice of medicine respectable, not contemptible.

It was a question suggested respecting surgery, whether it had been improved in later periods. The same question has been agitated respecting medicine, and perhaps it may, in this part of our article, merit a short notice. The argument, that medicine has not improved, has been supported by the most inconclusive reasoning; viz. that we still resort to the older authors, and that diseases are still mortal as before. To engage in an extensive discussion is inadmissible, but, as in the article referred to, we may adduce a few instances.

In the conduct of fevers, is it no improvement that the rigorous abstinence of the early days, enjoined by the ancient physicians, is, at least, abridged or softened? that the great heat, the close rooms, the warm stimulating medicines, and the sudorific regimen of the modern Galenists, is wholly abolished? It may be asked, whether either plan is justly or advantageously superseded; and we hazard little in replying, that the recoveries under the later mode of treatment exceed those under the former three times told. Death, from a fever, is now comparatively rare: formerly, recovery was equally so, and many, whom we remember among the recoveries, lingered out the remaining period of life without the slightest enjoyment of an hour's perfect health.

In internal inflammations the constitution is equally preserved by the rejection of the indiscriminate bleedings so often and so copiously employed; nor is the excitability exhausted by the numerous blisters applied, under the mistaken idea of derivation. In child-bed how is the strength preserved, and inconveniences avoided, by the cool regimen, by the discharges from the bowels, and the early application of the child to the breast? How is the strength and health of the child augmented by copious and frequent ablutions? In dysenteries, what pains are saved by the free use of cooling laxatives; in schirrous livers, how long is the life comfortably preserved by the free use of mercury? The paper would fail before we could enumerate the advantages of modern improvements in the practice of medicine. Let us take up the subject more generally. Abstruse disquisitions respecting the causes of disease, and the operation of remedies, are now seldom indulged. Our indications are more clearly pointed, and the means usually better chosen and more direct; less depending on pathological inquiries, and more closely connected with the changes to be produced. Dr. Friend was supposed to be master of all the medical science of every era; and yet, if any modern physician, who had for some years escaped from his early studies, were to read his Reflections on the Practice of the Ancients, they would suppose themselves engaging in a new and most intricate science; so disguised and involved are the most common observations and directions. This was, in fact, our own case.

We had intended to have closed this article with a sketch of a medical library, but we feared to terrify the indolent practitioner, or to repress the timid. Yet perhaps we may find an occasion to resume this subject under a later article, STUDIUM MEDICINÆ. At the conclusion however of so long a work, reasons of necessity must at last decide.

Le Clerc Histoire de la Medecine; Friend's History of Physic; Blumenbach's Historia Medicinæ Literaria; Schultze Historia Medicinæ; Conringii Introductio; Halleri Bibliotheca Medicina Practica.

See CHIRURGIA; BOTANY; MATERIA MEDICA; OBSTETRICATIO; MEDICINA FORENSIS et POLITICA.

MEDICINA FORENSIS et POLITICA. Medicine has for ages been the guide of the police and of justice, without ostensibly mingling in their contests. When Acron of Agrigentum is said to have kindled fires to

promote the circulation of air in order to check the plague of Athens, or Numa constructed sewers to keep the imperial city from the noisome stench of impurities, they acted as able politicians and judicious philosophers; and an early work of Hippocrates on a kindred subject should have particularly fixed the attention of physicians. Many similar regulations are indeed the result of good sense, reduced to practice by an active mind and well-directed views; but many years elapsed before regulations of this kind were digested by a regular scientific publication, professedly on the subject. The Criminal Constitution of Carolina was the earliest work in which the rudiments of forensic medicine were developed, and the first edition of this work appeared in the beginning of the 16th century. The origin of political medicine in modern times may be dated about forty years later, and its first publication by Joach. Struppe, at Frankfort, appeared in 1573. His work in quarto contains the necessary precepts for preventing the air from contamination by filth, by injurious occupations, and by sepulture in the midst of cities. He adds regulations respecting the occupations of millers, bakers, butchers, &c., on the proper instructions necessary for midwives, on the establishment of infirmaries, on the propriety of visiting the shops of apothecaries, and of guarding against the arts of quacks. In the same year, he published his Anchor of the Hunger, Thirst, and the Health of Mankind; in which he particularly treats of the substances which may occasionally supply bread, and the means of preserving meat from putrefaction. At the end of the same century, Fortunatus Fidelis of Sicily published his work on the department of forensic medicine, De Relationibus Medicorum; and, under the name of Reinesius, his Schola Ictorum Medica. The subject was still further pursued by Paul Zacchias, principal physician to the pope, who published his Quæstones Medico Legales in 1621, &c. in nine volumes, quarto, at Rome. About the end of the same century Paul Amman, a native of Breslaw, and a professor at Leipsic, published the Medicina Critica seu decisoria, as well as the Irenicum Numæ Pompilii cum Hippocrate; and, in the same century, G. Welsck of Leipsic published his Rationale Vulnerum Lethalium Judicium. We may just add, as objects of curiosity, that this author first described the purple miliary fever of child-bed women, as a new disease, in 1655; and, about the same time, a German clergyman first described the method of recovering persons apparently drowned.

To pursue the history through the 18th century would be useless, and almost impracticable. We engaged in it chiefly from curiosity, and need only add, that the minor works on this subject are collected by J. C. Traugott Schlegel, published in six small volumes at Longosalissa; but we must remark, that of this city and some others we have found it impossible to discover the vernacular name. The obscure towns in Germany have not found a place in any Latin or geographical dictionary to which we have access.

To account for the numerous German and French publications on this subject, we must observe that the laws of these countries are much more minute in their distinctions respecting crimes than the criminal code of this kingdom. This may be one reason why the subject has been so much neglected, that it has not formed any portion of a course of lectures; and very lately only has a professor of forensic medicine been established in a British university. To treat of this branch of medicine therefore, with all the subtilty of a German lawyer, will be unnecessary, and we must confine ourselves to the outline of those topics, which must be the subject of inquiry in an English court of justice.

We must first consider forensic medicine as it is a branch of medical investigation, and next as it is connected with the conduct of the surgeon.

Mania is one of the most frequent subjects of forensic inquiry, in which the physician is called on to decide; and, to the disgrace of science, we find the most opposite opinions adduced by practitioners of eminence. Much depends on the period during which the physician sees the supposed lunatic, and more on a few necessary distinctions, which we fear are sometimes designedly neglected. It is possible for an interested relation to fix on a day when the patient is calm and rational, an hour when he is usually collected, to introduce the physician who pronounces him sane. Another, in different circumstances, might pronounce him mad. It is necessary therefore to guard against such deceptions, to visit him frequently at different times, and at the most unsuspected hours. If this is refused, a collusion will be evident. We remember seeing a man, who was confined for a crime and defended on the plea of idiotic insanity. We visited him frequently, while unsuspecting any such examination, and found the plea strictly true. Yet, when called into court for the purpose of acquittal, when cleaned and dressed, roused also perhaps by the novel appearance of the scene, his look assumed a meaning, and he was almost rational.

In the general relations of life, a man may be thoughtless, ridiculous, and extravagant, yet these errors will not be sufficient to fix the charge of insanity, which consists either in false perceptions or erroneous reasoning, on objects distinguished in their true colours. Many individuals of this kind require guardians for their property as much as persons really insane; but the law intrusts no practitioner with such discretionary power. The difficulty arises when this wild absurd conduct is attended with such inconsistencies as lead to the suspicion, that the perceptions or the reason are affected. This situation is a question of prudence, rather than of jurisprudence, or medicine. The reflecting physician will not fix, unnecessarily, the stigma of insanity on a whole race; nor will he expose a family to ruin by a too great delicacy. In this difficulty, he will rather take the opportunity of a calmer moment to induce the patient to adopt such plans as may prevent the ruin of the family, and may properly make use of the alternative as an argument, in case of refusal. But this, as we have said, is not a medical question.

There is another doubtful state, in which the physician is often called on to decide, viz. when from disease, from general weakness, or any constitutional cause, the mind is so much enfeebled as to render it uncertain whether the patient can judge of the proper disposition of his affairs. This too is a question of discretion, for the afflicted person may be taught to answer common questions readily, or may be awed by some interested attendant. In this case, if the physician,

when alone with his patient, talks to him of his affairs, suggests, for the sake of a reply only, some objections to his arrangements, he will soon find whether the testator has judged properly, or only repeats a lesson. The circumstances themselves often suggest doubts; and when an infirm old man disinherits obedient or near relations, for the sake of those connected with him only by accident, the presumption is, that his mind is not sound.

We have said, in the article MANIA, that by a fiction of the law every mania, we have been informed, is supposed to be relieved by occasional lucid intervals, and that if the act of a madman is reasonable and proper, it is a proof that the interval was a lucid one. Thus in the case, which has just been considered, whatever be the apparent state of the patient's mind, if his will be judicious and proper, there is no reason why the physician should not pronounce him in a sound state. Yet, in criminal cases, the law is not equally indulgent, nor has it always, perhaps, been equally humane. Lucid intervals, in cases of murder, are not allowed, and the man who has been proved to be mad on the Monday and Wednesday is not allowed to be sane on the intervening day; yet decisions have occurred of a different kind; and an art in planning, a coolness in executing, a deliberation in the conduct, have been supposed to constitute soundness of mind. On these grounds lord Ferrers and Mr. Oliver were executed. Yet, if the *motive* is at any time connected with the hallucination, the subsequent action should certainly be considered as a part. In later trials the opinions have leant more on the side of humanity.

The question of confirmed insanity must be decided by a comparison of the patient's state with the pathognomonic symptoms. Yet there are many sources of doubt, and often room for hesitation. In many instances the mind wanders, at first, on one subject only; and, when the madman has any point to gain, he will, with great success, counterfeit a calm reasonable state. Each point must be carefully guarded; yet the experienced physician will not be easily baffled. A wildness of the eye, a tension of the skin of the temples, a dry furred tongue, often a hurried pulse, will explain the real state. The madman is also a coward, and we have drawn from this a good pathognomonic symptom. If threatened with some vehemence with any punishment, however wild and impracticable, he will shrink and tremble, forgetting all his art, or returning to his original deviation of mind.

Returning sanity is another point of doubtful distinction; nor do we see that it is possible to lay down any rules, except the absence of the pathognomics of the disease. Yet we have often witnessed the return of persons from the appropriate receptacles, with a wildness of the eyes, a quickness of utterance, rapid unsteady motions, which showed corporeal disease, though the mind was calm. Such persons should not be pronounced secure; and, though confinement may not be necessary, the most pointed caution should be continued.

Dissembled insanity might more properly belong to another head, morbi simulati; but we may more easily speak of it in this place. An experienced practitioner will soon detect the absurdities which assume the form of insanity; for, though incoherencies, wildness, and obscenity, may be imitated, the hurried look, the rapid pulse, the dry tongue, and the sleepless nights, cannot be assumed. Above all, the cowardice, the apprehension of punishment, the influence of threats, are seldom to be discovered. A French author details the symptoms of madness, for the purpose of this distinction, so elegantly as to induce us to copy the picture.

"Thus to neglect what most deserves attention, and to value what is least deserving of it; to rejoice or weep without an adequate reason; to despise what is terrible, and to fear what is ridiculous; to admire trifles, and to reject what is excellent; to love the objects of hate, and to hate those of love; to hope without an object, and to despair while in security; to be pleased with things which excite no agreeable sensations in others, and to fly from what every one would anxiously seek; to be timid with those who demand no deference, and bold to those whom they ought to respect; such are the infallible marks of a wandering mind."

In either of these cases, an excellent criterion may be found by inducing the supposed lunatic or the pretended convalescent to write. If engaged in a correspondence particularly respecting his own affairs, he will soon betray insanity, should it remain. In the servile war, the slaves who opposed the spears of their former masters yielded, when they saw them armed with whips; so the most furious maniac will often submit on presenting him a pair of hand-cuffs, which will only irritate the counterfeit.

MORBI SIMULATI. Dissembled diseases sometimes claim attention in a court of justice, but perhaps more frequently in an infirmary. The latter is, as usual, the school. Insanity, of which we have already treated, is the most frequent, and, next to it, are the different nervous and spasmodic complaints. We must not, however, always accuse the patient. The timid girl will have the catchings and the gesticulations of chorea more frequent on the access of a stranger; and the disease, to the attendants apparently cured, will appear to return. On the contrary, these and some other diseases will occasionally seem to lessen on the approach of the physician. The wanderings of delirium will cease, and the wildness of the eye be converted to an expression of meaning. These are circumstances which must be kept in view, as tending to explain the opposite course. The diseases counterfeited are catalepsy (commonly styled ecstacy) and convulsions. Some patients possess even a command of the features, and others, it is said, of the pulse; but, in general, an unchanged expression of countenance and an unaltered pulse will explain the deceit. Boerhaave is reported to have cured real fits by threatening, ex quâ pollebat gravitate, to burn the next patient seized, with a hot iron. To heat a poker with the same gravity has cured pretended ones, especially if they felt the heat approaching. Plunging the suspected patient in cold water is still more effectual, and it will not injure if the disease be real. Dashing cold water in the face, unsuspectedly, will succeed; but, as the bathing requires preparation, it will not be necessary, in case of deception, to proceed to extremities.

Pains in the limbs, which sometimes happen without fever, is a fertile source of deception, and blisters will often have little effect in detecting the fallacy. We have not, however, found patients of sufficient constancy to endure a few smart electrical shocks; and the

galvanic, if the skin is punctured, will be probably still more effectual. In cases where fever must necessarily attend, the detection is easy. No one can counterfeit the febrile symptoms enumerated under FEBRIS; though by topical stimulants inflammation and fever may be brought on.

In the time of Galen, tumours were produced in the knee by the semen thapsi; and Zacchæus, in his numerous quartos, has copied many tales of this kind. We have seen abscesses produced by inserting splinters under the skin, continued ulcers by stimulating dressings, and even hæmoptoe occasionally returning by artificially exciting cough. Yet while we awaken suspicion, we would not silence the feelings of humanity. We have seen cases where no deception could exist, where no motive could be found for fallacy, that appeared at the first sight fictitious. We have known the urine retained six weeks without any remarkable vicarious discharge: we have known a nail of no inconsiderable size, such an one as fastens the hoops of small barrels, retained in the throat till it formed an abscess: yet in each case no deception *could* exist.

The mendicant with his ulcers counterfeits both deafness and dumbness; but these deceptions are best detected by the beadle, or by a little address. "How long have you been dumb, my good friend?" says a passenger, with the most insidious humanity.—"Three weeks, sir," replied the incautious deceiver.

IMPOTENTIA. This disease rarely requires the interposition of a physician in a court of justice. The complainants, who are commonly females, can relate their grievances in terms sufficiently guarded and clear. The causes and cure we have already considered, and we see but one circumstance in which it requires our attention in this place. The extirpation of the testicles is an operation obviously designed to prevent generation. But in the human species, as we have seen, they are originally seated in the abdomen, and fall through the rings of the muscles into the scrotum. If they do not appear in the scrotum it is no evidence of their absence, and it has been said that their influence on the genital powers are more conspicuous while they remain in their original seat. It is at least certain that this influence is not less, so fallacious is the logical maxim, when applied to medicine, De non apparentibus & non existentibus eadem est ratio. If they did not exist, or were not evolved, the beard, the graver tone of voice, and every mark of virility would be absent. If they had been extirpated, the cicatrix would remain. It has been said that one, three, and even four, testes have been discovered. One has certainly been lost by accident, has decayed, or been extirpated, without injuring the generative power: sometimes the other has enlarged, but more often continued of the same size, with little apparent diminution of the powers. The stories of three and four testes we cannot disprove; but there is much reason to suppose that many of these have arisen from an enlargement of one or each epidydimis. They at least furnish no grounds for a legal process.

From what has been said under the article IMPOTENTIA, q. v., the physician will be sufficiently directed in his judgment; nor need we enlarge with the disgusting indecency with which the old authors expatiate on this subject, nor on the public display of the active powers in the venereal act, which some of the canons enjoined. The original authors seem plainly to hint that this indecency was only the prelude, like the modern actions for crim. con. to a divorce, and designed as a justification of the most licentious conduct; for divorces, they add, were less frequent since such exhibitions were abolished. This practice began, it is said, early in the thirteenth century, and ended about a hundred and fifty years afterwards.

POISONS. This frequent cause of violent and premature death is often the subject of inquiry in courts of judicature, and the physician is usually called on for his opinion. Science has been often disgraced by the crude, the injudicious, and often the opposite, opinions offered on these occasions; nor has humanity had less cause to regret the sacrifice of lives on the most vague and inconclusive evidence. Poisons may be accidental or designed. We shall begin with the latter.

The marks that poison has been administered are the sudden appearance of extraordinary and unsuspected symptoms, as uneasiness, nausea, an acute pain in the stomach, palpitations, faintings, disagreeable and fetid eructations, vomiting of blood, and bile, hiccough, sudden debility, smallness and inequality of the pulse, cold and clammy sweats, coldness of the extremities, paleness, livid nails, general œdematous swellings, windy distension of the abdomen, sudden relief with an equally rapid return of pains, blackness and swelling of the lips, burning thirst, loss of voice, a livid countenance, vertigo, convulsions, rolling and starting eyes, loss of sight, with a dilated pupil, lethargy, suppression of urine, a fetid smell of the whole body, purple eruptions, livid gangrenous spots, and an alienation of mind. All these symptoms are undoubtedly equivocal, and occasionally attend other diseases. They are marks of poison only when they come on suddenly, without any known cause; when the food, if unsuspected as the vehicle, sudden cold, violent affections of mind, or deleterious vapours, cannot be accused; for these will induce many of the symptoms, though seldom in so considerable a degree as arises from poison.

If the patient be not a suicide, and still retains his senses, he can explain the taste of the food, or medicine, which has induced these symptoms, so as to direct the future inquiries. When no satisfactory explanation can be obtained we must depend on the evidence collected on dissection. Poisons, so far as they are the object of our present inquiry, are violent, inflammatory, stimulants, or sedatives. The pungent stimulants betray themselves by the taste, the pain in swallowing, and the inflammation of the fauces; and they must be treated under the head of accidental poison, as they cannot be given without suspicion. The chief substance to be considered here is arsenic, which is nearly tasteless, and violent in its action, even in trifling doses. Its power is shown by violent inflammation and gangrene in the stomach; and it is discovered by calcining the contents of the stomach with the black flux, when the smell of garlic will betray even such an impregnation as will not often be fatal. Some of the saline mercurials show no very decided action on the tongue or fauces, and will produce similar effects. These may be discovered by adding ammonia, and heating the whole in a close vessel, when the mercury will be so far revived as to whiten copper on rubbing. In this way mercury can be often discovered in those quack medicines where its

existence is utterly denied; for the ammonia contributes to precipitate the mercury, reduced in part to its metallic state, and enables it to appear on the copper. The suspected substance, if arsenical, heated between plates of copper, will give a whitish tinge to the part of the plates in contact with it. Independent of these trials, when the stimulant poisons have been the cause of death, the abdomen is greatly inflated, becomes rapidly putrid, dark spots appear on the body, erosion, inflammation, and gangrene, are found in the fauces and stomach, the blood is black and collected in the veins; above all, the villous coat of the stomach is destroyed. One other discriminating appearance, on dissection, is mentioned by a respectable author on jurisprudence. If, after a body has been long buried, should gangrened spots be found in the stomach, surrounded by a reddish circle, these were effects of changes during life. Should the colour of the whole be uniform, the putrefaction took place after death.

There are other poisons which kill by a partial stimulus. The chief of these is cantharides; but their peculiar action on the bladder will point out the cause. The violent inflammation, the rapidity with which it hastens to gangrene, will at once betray the crime, and, at the same time, point out the culprit. No such can escape.

The colocynth, the elaterium, and the tithymali, betray themselves by their taste, as well as by their local action, and can neither escape the detection of the person himself who is the subject of the crime, nor the attendant physician.

The narcotic poisons, like the others, produce vomiting; but the faintness which is the effect of the vomiting in the former cases is the apparent cause of it in the present. The rapidly sinking strength, the dilated pupil, convulsions, stupor, sleep, vertigo, swelling veins, and cold extremities, point out the cause. Fortunately there are few such substances that do not betray themselves by their taste; but there *are* such, though we shall not point them out; nor shall we mention any poison that *can* be secretly administered. It is incumbent, however, on the practitioner to be cautious in these instances respecting his decisions; for no chemical analysis will assist him, and his only guide will be the discharge of substances which the powers of the stomach cannot change. He must compare with anxious attention the appearance of the symptoms after the supposed cause; trace with diligent circumspection every *other* circumstance that might have produced the effect; examine with care the patient's usual habits, his predispositions, his complaints, and at last remember that every medical conclusion is doubtful. Should he then be positive when the life of a human creature is at stake? One trial has been falsely considered to be decisive, viz. the effects of what might remain of the supposed fatal beverage on animals. This will hold true of the stimulant poisons; but by no means of the narcotic. The most innocent substances of this kind are occasionally fatal to animals; the narcotics, most injurious to man, are to many animals innocuous; and the human fluids changed by putrefaction are themselves poisonous.

Accidental poisons are received in the food, or are hastily swallowed by mistake instead of a medicine, before the taste betrays their nature. The former are chiefly copper, arsenic, and lead; the latter, nitre, camphor, ammonia, or the mineral acids.

Copper is greatly dreaded, and has frequently been accused with little reason. Copper culinary vessels, bell-metal mortars, and all the various means by which this metal can be introduced to the system, have received an indiscriminate sentence of banishment. Injuries have undoubtedly arisen from them, and we would earnestly join in deprecating their use. When, however, we have said this in the way of caution, we may be allowed to add, that the dangers have been greatly magnified. The taste of copper is so peculiar that it can scarcely be disguised, and it will not generally fail to give the alarm in doses far distant from dangerous ones. Hunger, or eagerness to taste a luxurious dish, may, however, hastily impel us, and such vessels should be avoided. The effects are chiefly on the stomach, and the quantity taken must be considerable to endanger life.

Arsenic has been swallowed accidentally when joined with any sweet substance to poison flies, or with other substances to destroy rats. The effects are so marked and discriminating as not for a moment to mislead, and they have been sufficiently detailed. It has been supposed that this metal may be accidentally introduced into the system when employed in fining wine; but for this purpose it is now wholly disused in this kingdom.

Lead has been accused of producing the Poitou colic when united with cyder, either as this metal is presented to it in the instruments employed in pressing the apples, or as added to correct the acidity of either wine or cyder. We cannot deny that in each instance it has produced the effect, since it is the peculiar consequence of swallowing any saturnine preparation. But these are by no means the constant, or indeed the most frequent, causes of the disease. Another source is said to be the glazing of the common earthen vessels, since lead is used in the process, and in such vessels pickles are usually kept. Lead is not, however, always the substance employed, or it is not dissolved by the acetous acid. We have kept vinegar in such vessels for many days in a warm place, without its discovering the presence of lead on the addition of the most delicate tests. The alarm, therefore, we think unfounded. In these circumstances caution is almost as necessary as in the former, where the life of an individual is at stake. The credit of a house, the character of a professional man, are involved; and the feelings of those whose want of caution may have occasioned the mistake may be so excessive as to endanger their lives. Though their negligence may merit punishment, yet that punishment may be too severe.

Ignorant druggists have sold camphor and nitre instead of neutral salts; and by mistaking the vials, the aqua ammoniæ, some mineral acid, or other stimulating substance, has been swallowed. The eagerness to escape from the taste of a disagreeable medicine hastens the act of deglutition, and the error is sometimes not discovered till the whole has been swallowed. The medical treatment is not our object in this place. The only connection this subject has with medical jurisprudence, is to ascertain the cause of death when such substances prove fatal. If taken as a medicine, the effects of the poison must be compared with the symptoms of the disease; and should the latter be highly dangerous, the feelings of the mistaken attendant may perhaps be

relieved by the humanity of the physician's declaration, in which, if he offers truth in her fairest and most favourable hue, he will do no injury to any individual.

The symptoms which distinguish camphor swallowed in large doses are, giddiness, vertigo, delirium, and convulsions. Nitre produces, with the common symptoms of narcotic poisons, bloody discharges from the bowels and the urinary organs. The mineral acids and ammonia do not greatly differ in their effects, which are those of violent stimuli, rapidly exhausting irritability. Inflammation in the mouth, or fauces, with a burning heat at the scrobiculus cordis, are followed by vomiting, by the sense of a heavy load in the stomach, and a consequent diminution of all its powers. From these symptoms, the remains of the medicine, and the report of the patient's feelings when it was swallowed, if he is able to report them, the nature of the deleterious draught may be ascertained.

The case of the SUICIDE is deplorable; yet he often repents before the termination of the scene, and can lead us to form a judgment of the treatment necessary. The physician's testimony may be called for, and no rule of morality can, we think, be violated by softening the most offensive circumstances. The feelings of the relatives may be essentially hurt by marks of disgrace to the body, which we believe never once deterred a determined suicide.

APPARENT DEATH has been the subject of much discussion, and premature interment the object of universal apprehension. Numerous are the tales told on this subject, many of which are exaggerated, and the greater number probably false. It is, indeed, possible that a person not yet dead may be interred; but it is highly improbable that any one should, in such a situation, recover their senses and recollection; for before these returned they must be suffocated by the want of air. The complaints, in which such apparent dissolution is most common, are the spasmi and comata of Dr. Cullen, drunkenness, excessive evacuations, narcotic poisons, strangulation, drowning, breathing deleterious gases, excessive cold, sudden and violent terror, and violent passions.

The want of motion, of feeling, of respiration and pulsation in the arteries, are neither singly nor in conjunction signs of death. The motion of the carotids, in the greater number of instances, continues longest, and their state should be most carefully examined. The experiment proposed by M. Bruhier is, to draw down the lower jaw, and if it approaches spontaneously the upper jaw, he thinks it a conclusive sign of some life remaining; but this may happen from the elasticity of the ligaments and other causes. It is certainly an equivocal proof. The eyes furnish the most certain signs, independent of putrefaction. If their transparency is lost, the eyeball sunk and wrinkled, and the pupil dilated so as not to contract by the strongest light, resuscitation is no longer in our power. The sunk features, in the eyes of experience, are a proof almost equally satisfactory; but putrefaction furnishes the only unequivocal symptom. Yet this we cannot always wait for. If any legal question depends on the state of the internal parts, dissection must be attempted at an earlier stage, since putrefaction changes every appearance by which we are enabled to decide. In cases of the slightest doubt, it is recommended to commence the dissection in the parts less essential to life, that if the stimulus of the wound excite the action of the remaining powers no considerable injury may ensue.

VIOLENT DEATH is apparently ascertained without difficulty; and when the cause proceeds so far as to destroy the organisation of a part essential to life, little hesitation can be felt. Hæmorrhages, and the appearance of contusions, are often fallacious. The former certainly take place from a variety of causes independent of violence, and the latter may arise from petechiæ, or similar causes. We can scarcely, however, conceive a question to come before a court of judicature, where the difficulty would arise whether death was occasioned by a putrid fever or by blows; and we think the decision of the father of forensic medicine, Zacchias, decisive in this respect. In case of violence, he observes, there is an extravasation under the skin: the lividness from other causes only discolours the surface by a change in the skin itself. We know that Stoll in two cases discovered a considerable extravasation under petechiæ; but these instances are rare, and the danger of mistake very trifling. On the other hand, considerable extravasations may take place internally, without the surface being affected, as where the bruise consisted of a large heavy weight, which gave a considerable shock without making an impression on any particular part. This cause of death may, however, be discovered by dissection; though, undoubtedly, bruises after death may, before the blood has coagulated, occasion similar appearances. This source of error must be carefully investigated in the particular cases.

One very important subject of enquiry arises, however, out of these discussions. If a man, in an accidental or premeditated struggle with another, by any extraordinary exertion break a blood vessel and die, though the struggle occasioned the death, yet it is deemed accidental. If this struggle be a pugilistic contest, where personal animosity is unsuspected, and the person thrown dies on the spot, a doubt will arise how far his antagonist was the cause of his death. Again, if in the violence and heat of a quarrel a person strike another with an inconsiderable weapon, and death follows as much from the passion as the blow, the doubt will be increased. In each instance, the physician and surgeon are called on to decide; and we know no cases in which such contradictory evidence has been given. The principles on which the decision should rest appear to be these. When, from prior complaints, any weakness or predisposition to disease, hereditary or otherwise, can be discovered; when the violence is such that, in a sound healthy body, it would not probably produce any dangerous effect, the blow or the fall should not be accused. If a man subject to a spitting of blood in a struggle should break a blood-vessel; if a person with a full florid complexion, and a short neck, whose parent had died of apoplexy, and perhaps about the same age, should fall down dead in a trifling contest, where the exertion was inconsiderable, we should certainly not convict his antagonist of any thing but imprudence and misfortune.

When any contest has taken place, independent of personal animosity, and some slight injury has been seemingly received, the subsequent conduct of the patient should have great influence on the judgment of the practitioner. If he has received injury in his side or head, and, instead of a cautious mode of diet, should

indulge in every irregularity, the pleurisy or phrenitis that might ensue should not, in justice, be attributed to the antagonist; nor, when the proper distinction is made, will the law, we believe, condemn him. This is not, however, the place to discuss a legal question, but to point out the foundation for the physician's opinion. The case is somewhat different when an abscess has followed external injury, independent of any irregularity of the patient's conduct. The physician must then decidedly attribute death to the *consequences* at least of the accident; and the legal distinctions will regulate the degree of criminality, and, of course, the punishment.

We have for some time been trenching on the province of the surgeon; but to introduce those parts of our subject which are more peculiarly his object, we must offer some remarks on the DISSECTION OF BODIES, with a view to discover the disease which has proved fatal, or the nature of the wound, in complicated cases, which has been destructive.

Dissections are opposed on many grounds. We shall notice only the objections which urge that by this means we discover effects rather than causes, and that complaints may have occurred either in the minuter parts, which cannot be detected, or in the nervous system, which are not cognisable by our senses. Undoubtedly we more often observe effects rather than causes; but the objection will only apply when the anatomist, from ignorance, cannot detect the difference, or, from haste, will not wait to examine. The source of great error has been the partial examination of the part apparently most affected. We remember the dissection of a person supposed to be starved. The stomach was empty and full of wind, but not contracted. Some doubt remained; for the mesentery had not been examined, in which the conglobate glands were afterwards discovered in an enlarged and schirrous state. Many similar instances might be adduced; and we may here add, that, in general, every cavity of the body should be examined with care, particularly the head. Complaints also may undoubtedly occur in parts of the body which even an exact anatomist may not think of examining; but these, we believe, will seldom prove fatal: nor, except from deleterious gases, is there any probability that the nervous system will be so much affected as to produce death, without leaving evident corporeal traces.

In medical jurisprudence, however, dissection is absolutely necessary, as the law requires the best evidence that can be procured, and various cases may be stated in which it is essential. A man, for instance, is found dead in a close apartment, in which charcoal has been burning, or which is in part consumed. The cause will appear evident: but dissection may discover traces of poison or of blows; and the fire may have been lighted to prevent suspicion.

When the dissection is determined on for the discovery of the cause of death, it should be attempted early, before putrefaction can have changed the appearance of the parts, and with as little motion as possible, that the relative situation of the viscera be not disturbed. The whole body, particularly the head, sternum, and abdomen, should be cautiously examined by gentle pressure. All the natural openings should be carefully sounded, and each part opened in succession, beginning with that which is most probably injured. The order of the examination is of more consequence than has been supposed. If, for instance, in the dissection of the body of a new-born infant, to ascertain the cause of its death, the heart and lungs be first opened, the copious discharge of blood will drain the large vessels, which will be found empty, and a strong suspicion will consequently arise that the child died of an hæmorrhage, by neglecting the ligature on the funis. So, in examining a wound and its direction every thing must be avoided which can disturb the relative situation of the parts; for to establish the cause of death it is necessary that the direction of the instrument should be accurately ascertained. In ruptures of internal vessels this caution is of less importance; yet, when there is any suspicion of the cause, it should be traced with as little disturbance of the relative situation of the parts as circumstances will permit.

The mode of examination is known to every surgeon; but it is highly necessary that he should be acquainted with the natural bulk and colour of the parts, and with the changes which fermentation, inflammation, and putrefaction will successively, at different periods, produce. The swelled abdomen and livid spots on the side may give suspicion of poison; but they are the effect of a separation of air, and the necessary changes in consequence of a warm season. If an inconsiderable wound, from its place or its direction, proves fatal only after some time, the previous inflammation will close it so that it shall appear too inconsiderable to be the cause of death.

RAPE. The ancient authors on forensic medicine are full on this subject, and unnecessarily minute and indecent. The examination and marks of violence will alone determine the judgment of the practitioner; and, for this purpose the English law has wisely determined that the complaint should be immediately made, since the injury can then only be best ascertained. The existence of the membrane closing the entrance of the vagina, deified under the name of Hymen by the ancients, has occasioned some controversy. The moderns have wisely cut the knot, and admitted, that though it is a sign of virginity, yet its absence is no proof of violation, since it may be destroyed in a variety of ways without suspicion of impropriety. An observation of Buffon, which we believe to be correct, will explain some of the apparent contradictions on this subject. He observes that this membrane is seldom found in young children, or in girls long previous to puberty. It is at that early period folded in wrinkles, and expands, as the custos horti, only near the age of womanhood. It is certain that its existence has been denied by anatomists of eminence, who, in order to "make assurance double sure," in such a doubtful point, have sought it in girls from four to ten years of age. The marks of violence, and the evidence of the young woman, according to our laws, alone decide, and these require no farther medical discrimination than we have stated. The swelling of the neck, which the "hesternum monile" can no longer surround, the blackness under the eye, the sullied whiteness of the cornea, must be referred to the list of old women's stories, which sounder science spurns at.

SUSPECTED PREGNANCY. On this subject a surgeon is often consulted, and we have already stated in different articles the foundation of the distinction. (See

CONCEPTIO, GENERATIO, and ASCITES.) We shall here, however, give a general connected view of the subject.

If a woman, who has been previously regular and in good health, at once complains of obstruction, without any well-founded cause, as cold, fright, &c. suspicion must be kept alive, and active medicines avoided. The complaints which arise from pregnancy, though of a similar nature from those owing to suppression, yet greatly differ. In the first weeks the pregnant woman feels no inconvenience, and then only from sickness, and chiefly in the morning. In the intervals of sickness the spirits are free, and in the evening the appetite is also good; while, from obstruction, vomiting is an uncommon symptom, the languor comes on more slowly, and the symptoms are by no means worse in the morning. In the former case the complexion is clear, in the latter pale and dark: in the former the eyes often lively, in the latter uniformly dull. Not many weeks elapse before the breasts swell, and a pink or brown areola appears round the nipple. The former state of the breasts may not be known, and the areola in many women is naturally dark. Yet in a thin woman it will be at once seen, if the breasts are disproportionally full; and even in a more lusty one their firmness will betray an increased bulk, while in suppressed menses the breasts are much extenuated. The areola in a pregnant woman is also unusually extensive. After the fourth month the swelling rises above the pelvis in the form of a round, circumscribed ball, and the sickness usually goes off, while the spirits become peculiarly free and cheerful. At this period the state of the os tincæ may be discovered by the finger, and will at once preclude all hesitation. See PRÆSENTATIO.

We have not mentioned the sensation of motion in the uterus, because we proceed on the supposition of concealment. The same cause may prevent our knowing the state of the menstrual discharge; but the vomiting, the tumour of the breasts, the darker areola, cannot be concealed, and the tumour of the abdomen at the subsequent period will be decisive. At this time also, and often more early, a slight pressure will produce a flow of serum or milk from the nipple. Hebenstreit indeed observes, that many women, not pregnant, can bring on a discharge of milk at will; but we have no reason to think that moderate pressure, independent of long continued irritation, or suction, can produce it in this climate.

Medical authors, kind to the fair sex, have been anxious to point out the fallacy of all these proofs; and we shall so far join with them in urging the practitioner not to hasten the decision. Certainty is at no great distance, and it is prudent not to endanger driving the woman to despair. This may occasion the worst of crimes; and if, though guilty, she escape, she may live to repent, and repair to society the injury which her former errors have occasioned.

It sometimes happens that women pretend to be with child, either to impose a fictitious offspring on a credulous companion, or to avoid punishment. The determination is in this case more easy; but should it be prudent to delay the decision, a most unremitted vigilance is necessary.

Suspected delivery very often claims the attention of the surgeon. The signs, however, though singly equivocal, are, together, certain. The very considerable relaxation of the vagina, the laxity of the teguments of the abdomen, the want of the fourchette, the thin membrane which unites the labia below, the peculiar swelling of the breasts, the extended areola, milk peliarly thin and serous, with the unequivocal smell of the lochia just going off, will decide. Exceptions may be made to all these as well as to the signs of pregnancy; but the experienced eye cannot be deceived.

Retarded or premature delivery. Nothing can be conceived more ridiculous than the discussions of medical jurisconsults on this subject. The ancients contended that every animal had a fixed period of gestation except the human female; but this is by no means true: and the moderns have tortured their invention to explain why delivery should be retarded. We need not enlarge on the subject; for our laws speak plainly that if a woman lies in within eleven months after the death or the possibility of the access of the husband, the child shall still be his; and the axiom *pater est quem nuptiæ demonstrant*, be uncontroverted. It is not our business to oppose the law, but to explain it, though we may still remark that it is peculiarly complaisant or indulgent. On the other hand, the law, we believe, recognises only a living child of seven months to be legitimate, if former access can be denied: a circumstance which can seldom happen.

ABORTION. This is a subject which, by our laws, can scarcely be considered as an object of medical jurisprudence; for no statute is in force to punish the means of procuring it. The civil law made many unscientific, and even ridiculous, distinctions on this point, resting on the period when it was supposed the fœtus began to live. We have now reason to think that life commences from the moment of impregnation. There is, however, a nice distinction in the English laws, which can never be applied without the most rash, unwarrantable decision of the physician or surgeon. If, says Dr Burn, whom we quote, by a medicine given the child is killed in the womb, "it is great misprision, but no murder;" but "if the child be born alive and dieth of the potion, *or other cause*, this is murder." The opinion, we say, is inapplicable; for where is the physician who will decide that a weakly child might not have been so without the potion? and the vague clause distinguished by italics must make the whole "words of sound signifying nothing." There is, however, another view which we must take of the subject. An author of the purest morality, the most extensive benevolence, and the soundest religion, Dr Percival, has dropped a hint, that it may not be unlawful to procure abortion where the size of the pelvis is not adapted for the birth of a living child. This is a latitude which we cannot sanction. A more recent (we *believe* a more recent) proposal of a celebrated accoucheur, who suggests in such circumstances, the propriety and advantage of bringing on labour at the end of the seventh month, is greatly preferable. In this case, though the attempt is peculiarly difficult, and can only succeed in the most experienced hands, the health of the mother is less endangered, and the child may be preserved; nor, on the whole, does humanity so strongly revolt at the attempt. Yet, as we have said, the whole should only be under the conduct of a man who unites resolution with discretion, and judgment with humanity.

INFANTICIDE. We know not when we have found greater difficulty in speaking on any subject than on the present. The weight of arguments seem often to bear hard on those who are the objects of the greatest compassion; on unhappy women, deluded to their ruin, struggling with remorse, with the apprehension of disgrace, acting from a momentary phrensy in self-defence, often inconsistently and improperly subjected to suspicion from circumstances wholly beyond their power, and to conviction from the fortuitous occurrence of events not within their calculation. On this subject particularly, and indeed in every branch of medical jurisprudence, we strongly advise the practitioner to be cautious. He may reason as a physiologist, but he should act as a man of feeling and reflection, who knows that no medical conclusion is certain, and that the life of a perhaps innocent individual may be sacrificed to his hasty oracular decision, perhaps to his inadvertency. The punishment of a crime, says Beccaria, cannot be strictly called just or necessary, while the law has not employed the best possible means of preventing it. The law is indeed silent; but modern refinement, the precision of outrageous virtue, which admits not of the penitence of a sinner, urges the unhappy culprit to the worst of crimes.

In such circumstances the woman, from the causes already stated, is alone, her mind agitated, her resolution weak, herself spiritless and indecisive. The labour is perhaps rapid, the child born during fainting or convulsions, and lost from want of that attention which no law enforces, and which the apprehension of disgrace prevents her calling for. A state of this kind may be ascertained by subsequent faintings, peculiar debility, a low fluttering pulse, paleness, and subsequent œdema. Should these symptoms not occur, let us not yet decide without hesitation; for other circumstances should be also considered.

The first question must be, was the life of the child so perfectly established as to be probably continued after its birth? This is answered by its appearance, and the perfect, the complete developement of its organs. It may be again asked, was it not dead before delivery? According to Alberti, if dead previous to delivery, the limbs are flexible, the skin wrinkled or soft, the colour yellow or livid, the abdomen sunk, with marks of commencing putrefaction, particularly about the navel, and the umbilical cord empty, yellow, livid, and apparently dissolved. The appearance of the cord is, however, equivocal; for the access of the air will in a short time produce the same changes. Indeed all these appearances are the result of putrefaction, and the child may have died only a very short time previous to its birth; nor are authorities wanting to show that, while the access of the external air is prevented, putrefaction does not soon take place (Heister, Alberti, and Hebenstreit.) The marks of apparent violence on the body are by no means decisive; but we have already, when speaking of contusions, laid down the best diagnostics on this point.

If an infant has breathed, it is supposed to have lived; but how many weakly infants are born alive, without breathing for many minutes; and how often, on the other hand, after a hard labour, does the child breathe once or twice, and then die? That the child may breathe before the delivery is complete, and die before it is fully born, is a fancy within the verge of possibility only, but too improbable to induce us to enlarge on it. A child, indeed, wholly perfect, may be strangled in its birth by the twisting of the umbilical cord round its neck; and it has been doubted whether, in this case, it is suffocated or dies apoplectic. It is probable that death is rather the consequence of the stoppage of the circulation through the cord itself; but this is of little moment, as the mark remains. May not this mark, however, be the effect of violence? It certainly may be so; and the famous experiment of the lungs sinking in water is adduced to determine the doubt.

In a child that has not breathed the lungs occupy the upper part of the chest, so as to leave the heart and pericardium exposed to view. But when the lungs are distended by respiration they fill the chest, and become specifically lighter than water. The English courts do not admit this experiment as evidence, and we are unwilling to disturb their decisions. We shall, therefore, add a few word on it as philosophers rather than as forensic physicians.

Heister observes, that the experiment is indecisive, because schirri in the lungs will make them specifically heavier than water; but who would be so weak as not to examine whether the experiment was tried on a morbid or a sound part; for the morbid lungs even of an adult will sink in water? He adds, that he has seen a child who had breathed twenty hours, whose lungs sunk in water; but he here speaks of the whole viscus, not of any particular portion, on which the experiment ought to be made. Again, it is contended that when putrefaction has taken place, the lungs of a child who has never breathed will swim. This fact is positively denied by at least equal authority; and, in reality, the lungs are scarcely susceptible of putrefaction, even when it has taken place in a considerable degree in the other parts of the body. If there were, however, any ambiguity, it may be at once removed by a slight attention. The air, separated by putrefaction, may be observed in the water passing along the divisions of the lobules, while air within them is invisible.

It is certainly possible that the mother, in attempting to revive a still-born child, may endeavour to inflate the lungs by her own breath. Anatomists of eminence have differed on the possibility of success; and we own that it appears to us impracticable, since the force of the expiration must be sufficiently great to expand the thorax, and the nostrils must be at the same time closed. Humanity will, however, take this source of expanded lungs into consideration when the life of an individual is at stake.

The colour of the lungs, which is of a bright red previous to inspiration, their situation in the thorax, and the situation of the liver and stomach, as well as the shape of the diaphragm, will afford more decisive proofs (Sabatier Memoirs de l'Academie Royale des Sciences); but we will not accumulate what may be adduced to criminate.

Suppose it, however, ascertained that an infant is born alive, does it follow that the mother has been its murderer? The English law allows the concealment of pregnancy, and the want of provision for the infant, to be presumptive proofs of her guilt; though this has been most wisely and humanely put out of view by constituting it a distinct crime, with its appropriate punishment. But if children die soon after birth, wher

the most anxious attention is exerted to preserve them, is it not probable that, in circumstances like those we speak of, the fatal event will be more common? Is it not rather surprising that any should live? The dangers that attend this first state of existence are numerous, and the neglects which may prove fatal are equally so. It is not our present business to point out these; and, indeed, we have through the whole discussion purposely avoided giving information that may be abused. The foreign authors on forensic medicine seem to aim at assisting criminal intentions, by industriously pointing out the means of their execution.

WOUNDS. The surgeon is often called to decide on the degree of injury sustained by these, and on the cause of death which follows them. When not mortal, and mutilation only is the consequence, the recompense which the law awards is proportioned to the injury sustained. The English law, however, makes the lying in wait, to *maim*, a capital offence, and with great propriety, as the lurking assassin is far more dangerous than an open enemy; and when it was alleged in a criminal's defence that the design was to kill, not to maim, the objection was over-ruled, on the principle that *omne majus continet in se minus*. It is not easy to kill without maiming.

Wounds are fatal either in consequence of the effusion of blood, or the destruction of the organisation of some part essential to life. It is not here our business to enter into the legal distinctions in this very complicated subject; but to point out to the surgeon, for his observation, the various circumstances on which these distinctions are founded. The divisions of the civilians, and of the older forensic physicians, into wounds mortal or indifferent, necessarily or absolutely mortal, &c. we shall not enlarge on, as they are not applicable to the system of English jurisprudence. Wounds may, however, be fatal by accident, as a bone at some part of the skull may be penetrated, if peculiarly thin, by a slight blow; a part essential to life may be in a preternatural situation, as a blow on the groin, which would do no injury, may bring on a fatal inflammation in case of a previous hernia; or a fever, which a slight blow has occasioned, may excite an indolent vomica to suppuration. In all these instances the English law inquires *quo animo* the injury was inflicted. Again, a trifling wound may become fatal during the prevalence of a malignant epidemic, in a constitution deeply tainted with scurvy, syphilis, &c. or in one of great nervous irritability, by inducing tetanus, or its lesser degree, a locked jaw. A state of pregnancy, infancy, or old age, will also render trifling injuries dangerous or fatal.

The event is equally influenced by obstinacy or cowardice, which prevents the treatment necessary to preserve life; by intemperance, violent passions, or despair; by neglecting the proper precautions enjoined; the want of necessary assistance, its delay in inclement seasons, or the unskilfulness of the practitioner. It was a truly judicious remark of a judge in a late cause, that he could not try the skill of a surgeon; and we would here add, that in every case where the opinion of a professional man is called on the conduct of another, he should reflect that his judgment is enlightened by the subsequent circumstances. In the situation in which the first practitioner was at the early era of the accident or complaint, the question must be, could he with propriety have acted differently? If that question is answered in the affirmative, another will arise; and should a man, himself liable to error, be forward in criminating a brother?

Wounds of the brain are seldom mortal, except the base, the cerebellum, or the spinal marrow at its commencement, are injured. A large portion of either hemisphere has been evacuated without injury, and even without the slightest (apparent) diminution of the faculties. Depressions of the skull are much more dangerous; and compression, from a fractured skull or extravasated fluids, as well as that torpid inflammation which concussion, after some time, brings on (vide CONCUSSIO and CEREBRI COMPRESSIO), are almost equally fatal. It is not the present object to point out the symptoms of each; but we must add the strongest injunctions in case of apparent compression, to examine with the strictest anxiety the part affected, in order to the application of the trepan. This is often very difficult to ascertain.

Wounds of the nerves are not always dangerous; but if a nerve is partly wounded it may bring on a fatal tetanus, when, from its situation, the nerve cannot be divided. Bohnius remarks, that wounds of a nervous plexus are usually mortal, and bruises on a nervous part, particularly where its nerves are connected with the vital organs, are generally dangerous. Michaelis mentions bruises on the pit of the stomach, in the English pugilistic combats, as frequent causes of death; and indeed all wounds of the stomach and intestines are highly dangerous, though many miraculous stories are related in which the patients were cured. Wounds of the liver, spleen, kidneys, bladder, and uterus, are also usually fatal, from the access of the air or the internal hæmorrhages. In experiments made on animals each is carefully avoided; but, with every precaution, the Cæsarian section is usually mortal.

Injuries in the vital organs, and indeed all wounds of the larger vessels, must necessarily be fatal. The stoppage of respiration, from any cause, must also soon terminate in death. A question sometimes occurs, whether the person may not have been suspended or drowned after life had been extinguished? This question can only be answered satisfactorily by dissection. Indeed, when life is destroyed by suffocation, the mark of the injury is conspicuous in a much greater degree than by common suspension; and, in cases of drowning, the pale livid colour of the face, with froth round the mouth, may determine the question; but each sign is equivocal. In either case, however, the venous system, particularly of the vena cava, and of the head, is greatly distended; and in strangulation the pulmonary artery is unusually full. Whether death has proceeded from deleterious vapours, in which the body has been confined, to avoid the suspicion of former violence, is not so easily discovered. The application of galvanism would, however, show the extraordinary diminution of irritability, which is usually the effect of such vapours; and, in each case, other marks of violence, and the injury of organs essential to life, will give strong suspicions, which dissection will confirm.

To pursue, with forensic physicians, the wounds of every different part, would extend this article beyond its proper limits; nor indeed could we add any thing which a knowledge of anatomy and physiology will

not supply. We must not suppose our readers ignorant of either.

Shocks and bruises. In the article respecting concussion we have shown how shocks impair the irritability of the vessels, and produce chronic inflammation in the brain or liver, which after some time is often the cause of death. Each cause here mentioned will also produce internal effusions, generally from a rupture of arteries, which may be fatal. A late instance has occurred, in which the radial artery was broken through its whole substance, by the shock only of a fall from a horse; and Pilatre de Rozier, the victim of æronautic folly, fell on his feet, and died immediately from the shock, which was found to produce internal effusions. Blows with a stick, without inflicting any wound, will occasion internal, and sometimes neighbouring, accumulations; and military punishments, when not fatal from gangrene, are sometimes so from abscesses forming *below* the bruised part. (Hamilton's Regimental Surgeon.) It is necessary, therefore, in forensic medicine, to look beyond the immediate injury, and examine the effects of what may arise from the shock or its consequences. In three instances we have heard from practitioners of credit decided testimonies that the blows were not the causes of death, because no mortal appearance attended the wounds. It was unlucky for the cause of justice that they were so ignorant; but humanity might smile through her tears, and charitably hope that the escape would prove a warning.

Hanging and drowning. We can scarcely separate the forensic from the more strictly medicinal consideration of these subjects, and must therefore refer to STRANGULATIO and SUSPENSIO.

MEDICINA POLITICA. Medical interposition, according to our laws, is seldom necessary in questions of police. Yet there are many cases where an intelligent physician might afford satisfactory information. Perhaps the neglect ha arisen from that dogmatism which is the effect of ignorance, or of imperfect science, as in the instance mentioned by Dr. Percival, where two physicians contradicted each other respecting the dangers from a copper work. One swore positively it was dangerous, because copper ores usually contained arsenic; the other had ascertained, by experiment, that the ore in question contained none.

In the article AER we showed that weather, and a state of atmosphere apparently the most insalubrious, were sometimes found healthy; and that neither reasoning *a priori*, nor experiment with the eudiometer, would always point out situations where the health can be preserved. The vicinity of marshes certainly renders situations unwholesome; but this is liable to exceptions. If the prevailing winds blow from a marsh to a town, at the season when the marsh is covered with water, little danger arises from it; but if the wind passes over it when in a moist state, diseases often follow. Dilution of the miasma, we have said, is the best security, and, therefore, at a certain distance its power is lessened or destroyed; but unfortunately this distance is not ascertained; nor is it certain that every marsh produces deleterious vapours. Those covered with salt water at each returning tide, or even at each spring, are not always dangerous. We cannot ascertain the innocence of any other kind, except of those very generally covered with water or herbage. Stagnant water has indeed been accused; but we suspect without reason: it certainly is not eminently injurious, and, from the "green mantling," known to exhale oxygenous gas, it may probably be salutary.

Towns, it may be said, cannot be removed; but if unhealthy they will be gradually forsaken. A house may be removed to a healthier spot; but the more temporary situation of a camp or a barrack which may be chosen should be fixed with peculiar care. The reports of army surgeons frequently point out the fatal effects of inattention to this important circumstance; and it has been said that barracks have been heedlessly erected in spots peculiarly unhealthy; nor should we be surprised to find the same carelessness respecting health that we have found of expenditure. A medical topography should be published of every district, comprehending the particulars of its situation, its prevailing winds, usual temperature, and reigning diseases. This plan, which has been adopted in France, would truly merit the attention of the legislature; and it might easily have been appended to the agricultural surveys, were we as attentive to the lives and health of mankind as of the shape or breed of cattle.

Nuisances often claim the attention of courts of justice, and physicians are sometimes called on to decide. Their object is, however, to determine only what manufactures are injurious to health. A brick-kiln, a lime-kiln, a pottery, and an iron-foundery, are unpleasant neighbours; but can we say either is unwholesome? Smelting-houses for lead, and, in general, for copper; dye-houses and tan-yards, erected so near the water as to corrupt the stream, are certainly injurious. The manufacture of the mineral acids, the oxygenation of the muriatic acid for bleaching, the singeing of velvets, currying of leather, are processes always offensive, and generally injurious; for the workmen are usually pale and weak, subject to nervous diseases, and seldom long-lived. Yet it is said, that the improved methods of burning the smoke prevent much of the inconvenience. The process of making candles is offensive, but apparently not unwholesome. It has been admitted into towns, but with reluctance; and the manufacture is discouraged in populous cities when complained of. The business of the dyer or the butcher is certainly not injurious to the health of those who practise or who live near either, nor can we recollect, in a large populous and trading town, any peculiar complaint that could be traced to their quarters. The breath and the dung of the cows have been thought salutary; but should they be so, the vicinity of pigs is certainly otherwise, and these should not be fed in populous cities.

Were the police to interfere in buildings, one circumstance should be indispensable, viz. that every house should have a free ventilation from the front to the back part: the smallest court behind would be sufficient, if not shut up by houses rising gradually higher on a hill. We have found no circumstance so injurious to the general health of a family as a situation where free ventilation is impeded.

The foreign authors on the medicina politica are full of numerous disquisitions, in which the law of this country speaks positively, and requires no medical aid. One of these points is the age proper for marriage; others are cohabitation, the Cæsarian operation, punishments

during pregnancy, &c. One of these subjects calls, we think, for medical interposition, viz. the danger of propagating the most dreadful diseases, as mania, scrofula, phthisis, &c. Yet we see not how physicians can interfere; for the child sometimes partakes of that parent's constitution which is perfectly sound. Must that child, or such children, then, be deprived of existence because the life of others may be short or suffering? Humanity, reason, and religion, will at once forbid. A stronger case is, where a woman, from deformity, cannot have a living child. Must her marriage be prevented? Neither law nor religion will decide in the affirmative, though the child and the mother may be sacrificed; and such is the circumstance lately mentioned, where the civilians have thought the procuring abortion justifiable. This, for numerous reasons, we must oppose, though we think bringing on labour at the seventh month a humane and judicious expedient: the impossibility of the woman's bearing a living child should, however, be first ascertained, without any doubt.

When the testimony of a physician is called for in a court of justice, his evidence should be clear, divested of technical language, and in modest, decent terms. He is sworn to tell the truth, the whole truth, and nothing but the truth; yet we have spoken of giving truth in her fairest garb, of softening what is harsh, and leaning to the side of humanity. We must explain. It is not our design to recommend prevarication, much less concealment: yet in the most decided cases there must be doubts, there must be views, which will carry with them alleviations. It is neither prevarication nor concealment to give each their full force; to point out how far they may bear on circumstances the most apparently positive. It has been said that it is better ten criminals should escape than one innocent person suffer by insufficient evidence. Yet criminals are confessedly punished for the sake of example; and the frequency of escapes, we fear, encourages new attempts. The maxim, therefore, though humane and benevolent, has been carried to an extreme; yet, as involving some intricate disquisitions not applicable to medical evidence, we can only add, that as the extreme of justice is the extreme of injury, so excess of humanity may be the excess of cruelty.

We have now finished a subject, new in our language, and in which, though we have anxiously avoided error, we may have often committed it. The extent of our article is comparatively short, for we have endeavoured to compress volumes into pages; and as English forensic disquisitions on medical subjects must relate to English laws, many bulky inquiries were foreign to our purpose. Yet, in our references at the end, we have pointed out the sources of a more general and a more extensive inquiry. If these appear numerous, the reader will feel more sensibly the obligation we have endeavoured to confer, viz. contracting our article by the omission of numerous references in our progress. To the candor of the more enlightened and experienced readers we now trust it, with a consciousness of having meant well; of having

Nothing extenuated,
Nor set down aught in malice.

See Paullus Zacchias Quæstiones Medico-legales, 3 vols. fol. Norinberg; Michaelis Valentini Pandectæ Medico-legales, 4to. Frankfort; Zittman Medicina Forensis, 4to. Frankfort; Alberti Systema Jurisprudentiæ Medico-legalis, 6 vols. 4to.; Richter Decisiones Medico Forenses; Teichmeyer Institutiones Medicinæ legalis (Fazellii edit.), Jenæ, 4to.; Hebenstreit Anthropologia Forensis, 8vo.; Ludwig Institutiones Medicinæ Forensis; Fazellii Elementa Medicinæ Forensis; Collect Opusculorum ad Medicinam Forensem Spectantium, a Schlegel, 6 vols 12mo. Lipsiæ; Medecine Legale & Police Medicale de Mahon, Paris, 3 vols. 8vo.; Percival's Medical Jurisprudence; Medical Jurisprudence on Madness by J. Johnstone, M. D.

MEDICINA STATICA. During the prevalence of the mechanical systems, when *pondere mensura et numero Deus omnia fecit* was the conduct held out to our imitation, the body was constantly weighed, and the salubrity of food was estimated by its perspirability. This plan, pursued at some length by Sanctorius, was soon found to give unsatisfactory results; for the valetudinarian in his statical chair, though the balance was carefully preserved, lost his strength and spirits; and he saw, with surprise, that he was "truly found wanting." Many circumstances were not taken into the account, which would greatly alter the result; but these we need not stay to enumerate, as the folly has had its day, and is now forgotten.

Sanctorii Medicina Statica, and Keil's Aphorisms.

MEDICI'NA TRISTI'TIÆ. See CROCUS.

MEDICINA'LES DIES, are those days in fevers which are neither critical nor indicatory, and on which it is supposed proper to administer powerful remedies.

MEDINE'NSIS VE'NA, (from *Medina*, where it was frequent). *Medena vena*. A WORM; called *vena*, before it was known to be an animal. See DRACUNCULUS.

MEDITU'LLIUM, (from *medium, the middle*). See DIPLOE. When it signifies the pith of vegetables it is called also *cardia, cor, encardium, medulla, matrix*.

ME'DIUM, (from *Media*, its native soil). See CERVICARIA.

ME'DIUM TE'STÆ. See BREGMA.

ME'DIUS DI'GITUS. See DIGITUS.

MEDU'LLA, *quia in medio ossis*. MARROW; *axungia de mumia*. In anatomy it hath various significations. The white substance of the brain is called *medulla*, or the medullary part, to distinguish it from the brown or cortical. The continuation of the brain in the spine is distinguished by the epithet *spinalis*; but medulla strictly means marrow in the bones.

If the marrow be viewed through a microscope, it seems a mass of small globules united like those in the roe of a herring. The distinction between medulla and succus medullaris is useless, for the marrow in the living body is always fluid. The membrana medullæ not only lines the internal surface of the bones, but divides the vesicles, or membranous bags, containing the marrow: these very fine minute vessels from which the marrow is secreted are dispersed on these membranes, and are branches from the artery, which enters the bone by its appropriate aperture. The use of the marrow is said to be rendering the bones flexible, for it was with little reason supposed they would soon otherwise become brittle, as happens in syphilitic and scorbutic habits, where it is apparently separated in too small a quantity, too quickly absorbed, or diseased. The membrana me-

dullæ is furnished with a nerve which enters with the artery, and with an accompanying vein. The small vessels which secrete the marrow are more than usually diminished by advancing age; and we thus find the marrow bloody in the earlier periods, oily in the middle stages of life, and watery in old age.

The marrow is never sensible but in a diseased state, and is usually absorbed with the rest of the fat in dropsies. In the fœtus the bones contain albumen chiefly; and in birds the proportion of marrow is inconsiderable, for the cavities chiefly contain air. Marrow of animals is prescribed in some compositions, but it has no superior efficacy to other fats.

MEDU'LLA C'ASSIÆ. The pulp of the cassia fistularis. See also MEDITULLIUM.

MEDU'LLA OBLONGA'TA is a continuation of the medullary substance of the cerebrum and cerebellum, passing downwards, and a little backwards to the foramen magnum occipitale, where it assumes the name of *medulla spinalis*. It is rather of a depressed pyriform figure, though called oblong; rising by two crura from the cerebrum, and two peduncles from the cerebellum: the enlargement formed from the union of these is called *pons varolii*, or *tuberculum annulare*, behind which is a stricture upon the medulla oblongata, followed by an enlargement, on each side, styled *corpora pyramidalia*. From the medulla oblongata arises the medulla spinalis, and all the nerves which pass from the head, except the first and second pairs (See NERVI.) Death is the immediate consequence of an injury on the medullary part. See CEREBRUM.

MEDU'LLA SPINA'LIS; *cerebrum elongatum; Æon;* is the continuation of the medulla oblongata, from the foramen magnum occipitale, through the vertebræ of the neck, back, and loins. It is of different sizes; in the neck flat and broad; in the back, small; in the loins, large; and at last it becomes a bundle of nerves, which have the name of *cauda equina*, because when taken out, and extended in water, they resemble a horse's tail, and as the medulla passes out of the foramen magnum, its external membrane the dura mater is united to the ligamentous lining of the bony cavity, but this connection does not extend beyond the first vertebra. The cineritious matter in the medulla spinalis is within the medullary.

A singular circumstance, of importance in explaining the phenomena of many diseases is, that the spinal marrow, though apparently one cord, is divided into two, easily separated, but united by a *cineritious substance:* it is therefore double, but, from the mode of union, single only; and we thus see how, in the more important organs, an injury in one part of the marrow is attended with a diminution of the power only in the organ, and can explain the reason of the irreparable consequences of a distortion, or exostosis of the boney canal. The fasciculi of nervous fibrils are sent off from each portion of this double cord, anteriorly and posteriorly, passing through separate foramina of the sheath. The posterior nerves form a ganglion, and then unite with the anterior. Each fasciculus is attended by the external lamina of the dura mater, the internal is gradually lost, and the angle left by each in its first divarication is filled by a fine ligament, which appears to support the nerves on the front, and behind, in their passage. This denticulated ligament seems through the whole cord to distinguish the anterior and posterior bundles, and, near the cauda equina, has been considered as itself nervous, since it there loses its denser structure as having less to support. The tunica arachnoides is more distinct from the pia mater in the spinal marrow than in the brain, though it adheres more closely to this membrane at the bottom than above. It is apparently suspended by the denticulated ligament, and passes, with the dura mater, along the nervous fibrils sent off.

The *spinal arteries* arise from the vertebral within the foramen magnum, which again passing through the occipital hole divide into two other branches, which run to the posterior portion of the medulla. Each runs through the respective grooves formed by the division of the cord. They divide, and again unite and anastomose occasionally, with the vertebral, the intercostal, the lumber, and sacral arteries. We thus see that the effects of a slight change in the capacity of the bony canal, by interrupting the course of the blood, and, in part the nervous influence, may be gradually obviated by the efforts of nature alone. The medullary veins terminate in the vertebral, and in different sinuses, which have a free communication, apparently serving, as in the head, to keep the arteries full, and to prevent the fatal effects of temporary pressure. See CEREBRUM.

MEGALOSPLA'NCHNOS, (from μεγας, *great*, and σπλαγχνον, *a bowel*). A person affected with an enlargement of any viscus.

ME'GRIM. See CEPHALALGIA.

MEIBO'MII GLA'NDULÆ. See CILIARES GLANDULÆ.

MEL, MELI, (from μελι, *honey*). HONEY; *acromili, acoiius.* Aristæus, a pupil of Chiron, is said to have first gathered this sweet vegetable juice, collected by the bee from the flowers of various plants, and deposited in the cells of its comb. The little animal which furnishes this rich juice is the apis mellifica, Lin., and the honey which separates without expression contains a less proportion of wax, and is of a thick consistence, a whitish colour inclined to yellow, a granulated appearance, an agreeable smell, and pleasant taste: both the colour and flavour differ in some degree, according to the plants which the bees prefer; but that wrought by young bees, and permitted to run from the comb without heat or pressure, is called virgin honey. The honey of old bees, pressed from the wax, is yellow. Honey produced where the air is clear and hot is better than that where the air is variable and cold. Where the bee-hives are fixed, aromatic plants, particularly thyme, lavender, violets, primroses, baum, sage, and borage, should abound. Honey seems to be merely collected from the flowers, and not elaborated by the internal economy of the insect, for it derives, apparently from its source, many qualities not peculiarly its own. New honey to many proves disagreeably and powerfully laxative; and it sometimes, particularly in America, proves poisonous Boston. (American) Transactions. Each inconvenience is often removed by age, but more certainly by boiling. The animal which collects it is an exclusive inhabitant of the old continent, imported by America, where the natives call it the white mens' fly.

Honey contains a large portion of a purely saccharine matter, mixed with an acid partly uncombined, though concealed by the sugar. With this,

however, there is certainly a proportion of mucilage, since oxalic acid is the result of its treatment with the nitric.

If M. Seguin's late experiments are correct, honey must also contain albumen, since substances which are susceptible of fermentation without yeast, seem, in his opinion, to owe it to their albumen. When deprived of it they lose this property; and when it is again added in the form of the white of an egg, they regain it. Yeast certainly contains albumen, but M. Seguin has lately shown so much fancy in his experiments on gelatine, with which intermittents he thinks may be cured, because the bark appeared to contain this substance, that we distrust his present conclusions.

Honey is highly nutritious, though when long continued as a diet, is said to occasion a dissolution of the blood. As a medicine it is supposed to be aperient, antiseptic, and expectorant: but it is perhaps only slightly laxative, and a pleasing demulcent. It seems to possess some stimulus, since it is forbidden where heat and inflammation are considerable. If given in a large quantity it has been said to relieve asthma, and dissolve a calculus in the bladder (see CALCULUS); but there is much reason to doubt its efficacy in these complaints. It is only a sugar with a larger proportion of mucilage, for its acid is inconsiderable in quantity, and highly volatile.

MEL AE'RIUM. See MANNA.

MEL DESPUMA'TUM. CLARIFIED HONEY.

Liquefy the honey in a water-bath, separating the scum as it arises. On continuing the heat, a considerable quantity of an aqueous fluid, impregnated with the finest smell of the honey, arises: the inspissated residuum dissolves in water and in spirit. If treated with moist clay, as practised by sugar bakers for purifying sugar from its treacle, the unctuous parts of the honey may be separated, and its saccharine matter obtained in the form of a solid, saline, white concrete.

OXYMEL SIMPLEX. Simple *Oxymel*.—Take of clarified honey, two pounds; of distilled vinegar, a pint. Boil them in a glass vessel, with a gentle fire, to the consistence of a syrup. Pharm. Lond. 1788.

CERA'TUM ME'LLIS (from *cera*, *wax*, and *mel*, *honey*). CERATE OF HONEY. ℞. Olei olivæ; mellis despumati āā ℔ss. Ceræ flavæ—Emplastri lithargyri āā ℥iv. m. Melt the oil, wax, and plaster together, and afterward add the honey. This cerate is said to be well calculated for scrophulous ulcers, as it is slightly stimulant.

MEL BORA'CIS. HONEY OF BORAX, consisting of an ounce of honey to a dram of borax, is applied to the mouth in cases of aphthæ.

In every instance where honey is thus employed, it should not be new, and it should be ascertained previous to its use whether honey commonly disagrees with the bowels.

Of many compositions honey forms the basis, as the *mel scillæ*, *oxymel scillæ*. See SCILLA. *Mel Rosæ*. See ROSA. *Oxymel Colchici*. See COLCHICUM. *Mel hydrargyri*, and *Mel Ægyptiacum*. See ÆGYPTIACUM UNGUENTUM.

MELÆ'NA, MELAI'NA, (from μελας, *black*). A disease in which the discharges are black, attributed to black bile. See MORBUS NIGER.

MELÆ'NA NO'SOS. See MORBUS NIGER.

MELAMPO'DIUM. See HELLEBORUS NIGER.

MELAMPY'RUM, (from μελας, *black*, and πυρος, *wheat*, because it resembles wheat) *triticum vaccinum*, *cratæogonum*, PURPLE COW-WHEAT, *melampyrum arvense* Lin. Sp. Pl. 842, because it is very grateful to black cattle. Its effects resemble those of darnel, and are narcotic, until custom has rendered it habitual. It is found among corn in many countries, particularly Friesland and Flanders. A wild species is called satureia lutea sylvestris. *Melampyrum sylvaticum* Lin. Sp. Pl. 843. See Raii Historia.

MELANAGO'GA, (from μελας, *black*, and αγω, *to expel*). Medicines which purge off black matter supposed formerly to be bile.

MELANCHO'LIA, (from μελαινα, *black*, and χολη, *bile*). MELANCHOLY; *delirium melancholicum*, *erotomania*, *panophobia*, *athymia*. Dr. Cullen places it as a genus in the class *neuroses*, order *vesaniæ*, and defines it, a partial insanity, without dyspepsia. (Vide MANIA.) Melancholy and hypochondriasis are so nearly allied, that the distinction is difficult. Dyspepsy is however a commonly attendant symptom of the latter; but absent in the former.

Of this Dr. Cullen distinguishes eight varieties, arising from the objects of false conceptions. 1st, from being fearful of the dangerous state of the constitution; or, 2dly, from a false conception of their more prosperous situation; 3dly, from violent love, without the irritation of lust; 4thly, a superstitious fear of a future state; 5thly, a dislike of motion, and all the offices of life; 6thly, with inquietude and restlessness; 7thly, with a weariness of life; 8thly, from a man's false conception of the nature of his own species, fancying himself a dog, a horse, or some other animal.

Melancholy, however, is in general the beginning or a less degree of madness, and the highest degree of hypochondriasis. Each passes gradually into the other; and they all often, at last, terminate in alienation of mind. See MANIA.

MELANOPI'PER, (from μελαινα, *black*, and *piper*, *pepper*). See PIPER NIGRUM.

MELA'NTHIUM, and MELASPE'RMIUM, (from μελας, and σπερμα, *semen*, *seed*). See NIGELLA ROMANA.

MELANTO'RIA, (from μελας, *black*). See ATRAMENTUM SUTORUM.

ME'LAS, BLACK. An epithet applied to the colour of the skin, and to some particular medicines, as *calomelas*. A species of leprosy of a dark black colour has the same appellation. See ALPHUS.

MELA'SMA, (from μελας, *black*). See SUGILLATIO.

MELA'ZZO. See SACCHARUM.

ME'LCA, (from αμελγω, *to milk*). "Milk well seasoned with boiling-hot vinegar, to separate by rest the curd from the whey." Constantine de Agricultura, lib. xviii.

MELEGE'TA. See PARADISI GRANA.

MELEI'OS. See ALUMEN.

ME'LICA. See MILIUM INDICUM.

MELICERI'OLA. A small meliceris.

MELICE'RIS, (from μελι, *honey*, and κηρος, *wax*), *Mellifavium*, is an encysted tumour, whose contents resemble honey and wax. It differs from the atheroma by its evident fluctuation, and from the steatoma by

its firmness. It may be extirpated, or opened and dissolved, by exciting suppuration. See NÆVUS.

MELICRA'TON, (from μελι, *honey*, and κεραννυμι, *to mix*). See HYDROMELI.

MELIGEI'ON, (from μελι, *honey*), a fetid oily humour of the consistence of honey, discharged from ulcers when complicated with a caries of the subjacent bone. Blanchard.

MELILO'TUS, (from μελι, *honey*, and λωτος, the *lotus*), *lotus sylvestris, sertula compana, trifolium caballinum, corona regia*, COMMON MELILOT, *trifolium melilotus officinalis* Lin. Sp. Pl. 1078, is a plant with smooth, oval, striated leaves, standing three together on slender pedicles, and round, striated, branched stalks, terminated by long spikes of papilionaceous flowers dropping downward, followed by short, thick, wrinkled pods, containing each one or two roundish seeds. It is annual, or biennial, and flowers in hedges and corn-fields the greatest part of the summer.

Melilot is emollient, and supposed to be anodyne, participating of the virtue of camomile. Its taste is unpleasant, somewhat acrid and salt, but not bitter; when fresh it hath little smell, but in drying acquires a strong aromatic though disagreeable odour. The distilled water of melilot, though of little smell, remarkably heightens that of other substances. It formerly gave name to a plaster, to which its juice imparted a green colour; but it is now seldom used.

MELILO'TUS MAJOR. See LOTUS URBANA.

MELIPHY'LLON, (from μελι, *honey*, and φυλλον, *a leaf*). BAUM, or BALM. See MELISSA.

MELI'SSA, (from μελισσα, because bees are fond of it), *apiastrum, erotion, mellifolium; citrago, citraria*, and *cedronella*, from its colour; *melissa officinalis* Lin. Sp. Pl. 827, is a well-known plant in our gardens: the stalks are square; the leaves are oblong, pointed, dark green, somewhat hairy, and set in pairs, in the bosoms of which arise pale, reddish, labiated flowers, standing several together, on one pedicle, with the upper lip roundish, erect, and cloven, and the lower divided into three segments. It is perennial, a native of mountainous places in the northern parts of Europe, and flowers in our gardens in June.

Baum is one of the mildest cordials and corroborants: with a pleasant smell, resembling that of the lemon, and a weak aromatic taste, which it loses in a great degree by drying; a slight roughness discoverable in the fresh herb, becomes more sensible when dry; the young shoots are stronger than the full-grown stems. Infusions of the leaves, in water, smell agreeably of the herb, but have not much taste, though, when inspissated, that of the extract is bitterish and austere. Infusions of baum do not, like other aromatics, offend the head. Cold infusions in water, or spirit, are far better than the cohobated distilled water, and are the best preparations. It used to be considered as an efficacious nervous medicine in hypochondriasis and melancholia, as well as an emmenagogue. At present it is only given in infusion as a grateful diluent in fevers, sometimes acidulated with lemon-juice.

On distilling the fresh herb with water, it strongly impregnates the first running with its grateful flavour. When large quantities are subjected to the operation, a small portion of essential oil, called *ol. Syriæ*, or *ol. Germanis*, swims on the surface. It is of a yellowish colour, and a fragrant smell. See MOLUCCA.

MELI'SSA NE'PETHA. See CALAMINTHA.

MELI'SSA CALAMI'NTHA. See MONTANA.

MELI'SSA TU'RCICA, *camphorosma*, TURKEY, or CANARY BAUM, commonly called *balm of Gilead*, *dracocephalum Canariense* Lin. Sp. Pl. 829. This species is a native of the Canary isles, and scarcely bears the cold of our climate without shelter. It is commended as a warm tonic if frequently drank in infusion.

MELISSOPHY'LLON. See MELISSA, and BALLOTE.

MELITI'SMOS, (from μελι, *honey*). A linctus prepared with honey.

MELLA'GO, (from *mel*, *honey*). Any medicine of the consistence and sweetness of honey.

MELLEGUE'TTA. See PARADISI GRANA.

MELLIFA'VIUM, (from *mel*, and *favus*, *honeycomb*). See MELICERIS.

MELLITUS, (from *mel*, *honey*), sweet, partaking of the nature of honey. This is the trivial name of a species of *diabetes*, q. v. a disease which, since the publication of the second part, has attracted the attention of MM. Dupuytren and Threnard. (See MANNA.) They discovered that the residue of diabetic urine, after evaporation, was not peculiarly sweet to the taste, though it had all the properties of real sugar; while manna, a substance peculiarly sweet, contained sugar only in a very small proportion. They found an animal diet successful, and on examining the urine during the cure, perceived the first salutary change in the urine to be an evolution of albumen, and soon afterwards the urea and uric acid appeared. In the true diabetic urine no animal matter can be discovered.

MELIFO'LIUM, (from *mel*, and *folium*, *a leaf*). (See MELISSA.) MELISSOPHYLLUM, *melitis melissophyllum* Lin. Sp. Pl. 832, has been used in calculous complaints, and as an emenagogue, but is now neglected.

ME'LO, (from its resemblance to μηλον, *an apple*). The MELON, *cucumis melo* Lin. Sp. Pl. 1436. This fruit is cooling and watery, and should be taken with caution by those who have weak digestive powers, and are best eaten with sugar and some aromatics, as ginger, or pepper. They are diuretic, and have been said to produce bloody urine, which may have happened, but it seems a solitary instance.

ME'LO I'NDICUS. See JACE BRASILIENSIBUS.

MELO'E VESICATO'RIUS. See CANTHARIDES.

ME'LON, (from μηλον, *an apple*). AN APPLE; the CHEEK, (see MALA and BUCCÆ;) or a disorder of the eye, when it protuberates from the socket. See EXOPHTHALMIA and MALUM.

MELO'NGENA, *mala insana, solanum pomiferum*. MAD-APPLE. It is not injurious, as has been supposed. The Spaniards and Italians eat them both in sauce and in sweet-meats: their taste resembles that of a citron.

MELO'PEPON, (from μηλον, *an apple*, and πεπων, *a pompion*). The SQUASH resembles both the melon and the pompion, except that its fruit is roundish, striated, angular, cut into five parts, and full of flat seeds, fixed to a spongy placenta. See PEPO.

MELO'SIS, (from μηλη, *a probe*). The searching of any part with a *probe*. See APYROMELE.

MELOSTI'CA PENDULA Lin. Sp Pl. 49, is not remarkable for any medical virtues, but its fruit is pickled and eaten as a condiment.

MELO'THRUM. See BRYONIA ALBA.

MELO'TRIS, (a diminutive of μηλη, *a probe*). See APYROMELE.

MEMBRA'NA, (from *membrana, parchment*, which it resembles). A MEMBRANE; *chiton*. Winslow describes it to be a pliable texture of fibres, disposed or interwoven together in the same plane. Membranes differ in thickness, according to the smallness of their fibres, and the number of their planes, called *laminæ*. For a description of the *cellular membrane*, see CELLULOSA MEMBRANA, and FIBRA.

The mucous membrane is that covering of the surface of any part, generally within the body, which is exposed to injury from extraneous matter, as the internal membrane of the mouth, nose, lungs, œsophagus, stomach, intestines, and urinary passages, from which they are defended by the mucus, which it secretes.

The common membranes, called the common teguments, are the scarf-skin, the true skin, and the cellular membrane; but from this rank the first and last must be excluded, for the scarf-skin is an apparently inorganic exudation, inspissated, or a scaly covering, and the *tela cellulosa* not very different. The membranes which cover particular parts are, the *dura* and *pia mater*, *pleura, peritonæum, pericardium, periosteum, membrana propria musculorum*, a vascular membrane which covers all the vessels of the body, and those which form the tubes, as the stomach, intestines, arteries, veins, gall-bladder, or urinary bladder. Membranes, we have said (see FIBRA, FŒTUS, and GENERATIO), are apparently primordial and nervous, and afford a striking instance where nerves, by a closer and more compact texture, lose their sensibility; for membranes, like tendons, are insensible in a sound state. They show, however, their peculiar nature by the extreme pain and irritation felt when stretched or inflamed.

MEMBRANA HYALOIDEA, the membrane which encloses the vitreous humour of the eye.

MEMBRANA PUPILLARIS, the membrane which covers the pupil of a fœtus before the sixth month.

MEMBRANA RUYSCHIANA the internal lamina of the choroid.

MEMBRANA TYMPANI. The membrane separating the tympanum of the ear from the meatus externus. (See AURIS.) It is said to consist of six laminæ, 1st, a production of the epidermis; 2d, of the skin lining the auditory passage; 3d, a cellular membrane supporting reticulated vessels; 4th, a production of the periosteum of the meatus; 5th, like the 3d; 6th, a production of the periosteum of the internal cavity. Muscular fibres have also been discovered in it.

MEMBRANA'CEI, (from *membrana*). Inflammation of membranous parts.

MEMBRANA'CEUS, (from *membrana*), belonging to the MEMBRANES. In botany it means those leaves which have no parenchyma between the surfaces.

MEMBRANA'CEUS PI'NGUIS. See CÆLIFLOS.

MEMBRA'NÆ. See INVOLUCRA.

MEMBRANOLO'GIA, (from *membrana*, and λογος, *discourse*). MEMBRANOLOGY. It treats of the common integuments, and of particular membranes.

MEMBRANO'SUS MU'SCULUS; from its large membranous expansion. See APONEUROSIS.

MENDO'SA SUTU'RA, (from *mendax, counterfeit*). The squamous suture in the skull; differing from other sutures, as it resembles a scale instead of being indented into the adjoining bone.

MENDO'SÆ COSTÆ, (from the same). See COSTÆ.

MENI'NGES, (from μηνω, *to remain*). See DURA MATER.

MENINGÆ'Æ ARTE'RIÆ, (from μενιγξ, *a membrane*). See DURÆ MATRIS ARTERIÆ.

MENINGOPHYLAX, (from μηνιγξ, a *membrane*, and φυλασσω, *to guard*). An instrument described by Celsus, lib. viii. cap. 3, contrived for guarding the membranes of the brain, whilst the bone is rasped, or cut, after the operation of the trepan.

MENI'NX, (from μηνω, *to remain*). See DURA MATER.

MENORRHA'GIA, (from μηνια, *the menses*, and ῥηγνυμι, *to break out*). EXCESSIVE OR EXTRAORDINARY DISCHARGE of the MENSES, *metrorrhaghia*, *hæmorrhagia uterina*. Dr. Cullen places this disease in the class *pyrexiæ*, and order *hæmorrhagiæ*, which he defines pains of the back, loins, and belly, similar to those of labour, attended with a flow of the menses, or of blood from the vagina, more copious than natural. The species are:

1. MENORRHA'GIA RUBRA. See MENSES.
2. MENORRHA'GIA ABORTUS; *menorrhagia gravidarum*. See Floodings under ABORTUS.
3. MENORRHA'GIA LOCHIALIS. See LOCHIA.
4. MENORRHA'GIA VITIORUM; when the appearances of the menses are from ulcer or other local defect.
5. MENORRHA'GIA ALBA. See FLUOR ALBUS.
6. MENORRHA'GIA NABOTHI; the serous discharge from the vagina during pregnancy.

MENORRHA'GIA DIFFI'CILIS. Difficult or painful menstruation. See MENSES DEFICIENTES.

ME'NSA. The second lobe of the liver in ancient authors. See AURIGA.

ME'NSA JO'VIS. See VERBENA.

ME'NSES, (from *mensis, a month*), *catamenia, menstrua, emmenia, gynæcia*, periodical discharges of blood from the uterus, vagina, or both, from about the age of fourteen to about fifty. In warm climates they appear at about eight or nine years of age; in temperate ones at thirteen to fourteen, and in the arctic regions not till nineteen or twenty. The quantity discharged is from four to ten ounces; but in this there is much variety, and the discharge continues from two to eight or ten days. In some relaxed constitutions there is occasionally not more than a week's interval, and in general the more lax the constitution the larger is the discharge, and the longer its continuance. The indolent, the sanguine, and the luxurious, have generally a large periodical evacuation. Usually, the earlier the period when they first appear, the sooner they disappear. In this country they disappear about the forty-fifth year, though, from accidental circumstances, the cessation may happen in the thirty-sixth or be protracted to the

fiftieth year. We have known instances of their continuing to the fifty-second, when they have *not* appeared at a late period. The tales so frequently detailed of their returning at the ages of sixty, and even of eighty, do not merit any particular attention, though often well founded: for in these cases, the discharge is truly hæmorrhagic, generally temporary, and often critical.

The menses flow chiefly from the uterus, and occasionally from the vagina alone, as happens sometimes during pregnancy. When the natural discharge is stopped, a vicarious bleeding takes place from the nose, the lungs, the nipple, the hæmorrhoidal veins, the stomach, the bowels, and even the gums, without any particular inconvenience.

Before that peculiar state of irritability which disposes to an irregular balance of the circulation, and consequently to topical congestion, had its full weight in our physiological and pathological inquiries, a discharge of blood implied, in the opinion of pathologists, plethora. That a general fulness was the cause of the menstrual discharge was scarcely doubted by the soundest physiologists, for the fancies of the lunar influence and of fermentation were soon rejected. This opinion had undoubtedly many observations to support it. The access of the catamenia was marked by general load and oppression; the breasts swelled; the stomach was often disordered; and their suppression was followed by other sanguine discharges. Yet the acuteness of modern philosophers soon discovered that these views would not explain all the various phenomena. They saw that the catamenia continued to recur notwithstanding the system was exhausted, that the fullest habits had not, invariably, the most copious or frequent discharges; for, on the contrary, these were usually observed in the weak and irritable. They perceived also, that a copious general bleeding would not stop their appearance, and the most copious discharge would not always relieve any internal inflammation If also this view was correct, why did not the catamenia occur at other ages, when the vessels were distended? why not in the intermediate periods, if the arterial system was unusually full? The partial congestions, suggested by the writers of the Stahlian school, came therefore to their aid. The topical load, in a system so irritable and so generally sympathizing as that of the uterus, would produce equal uneasiness; from the peculiar sympathy between the uterus and the breasts, the mammæ would swell; and, when any the most purely topical discharge was suppressed, other irregular determinations were known in other instances to come on. Nothing appeared, therefore, to be inconsistent with topical plethora; and this satisfactorily explained all the difficulties of the former system. The idea had loosely floated in the minds of many physiologists before the time of Dr. Cullen; but to him we are indebted for its expansion into a system at once elegant and correct

In different parts of this work, and particularly in the article on HÆMORRHOIDS, q. v. we have explained the gradual developement of the different parts of the body from the distention of the arterial system, ultimately depending on the progressive changes of the relative degree of resistance in the coats of the arteries and veins. The genital systems of either sex experience this change about the same time, and as the vessels of the uterus easily admit of considerable dilatation, congestion is the consequence, which is relieved by the exhaling arteries yielding to the impulse. No rupture of the veins or arteries takes place, for the discharge is steady, regular, and seldom considerable in a given time. After it has continued for even a short period, every inconvenience is removed, the previous load is no longer felt, and the fulness of the mammæ subsides. The continuance of the discharge is different in different constitutions, but it usually continues from three to five days, when it ceases, sometimes leaving a serous discharge for a day or two, sometimes a mucous one, which, if it continues, constitutes the disease called *leucorrhœa*, or *fluor albus*.

The *recurrence* of the catamenia is with more difficulty explained. Women, from the sedentary life which they lead, and from a looser contexture of vessels, are more subject to plethoric congestions than men, and the uterus is, from its structure, more likely to receive these accumulated fluids. By degrees, these topical congestions become habitual, and recur independently of any real general plethora. This explanation appears to be supported by the irregular returns of the catamenia in the earlier periods, and the irregular continuance of the discharge before the habit is established. Why the accumulation should require a lunar month before it is equal to produce the effect it is impossible to ascertain, as why the period of fourteen days should be most commonly required to produce the crisis of fever, or why the seventh and the fourteenth year should be marked by striking changes in the constitution. Such is the determination of Him "in whom we live, and move, and have our being."

This view of the subject will explain equally the pathology and practice in all their varieties. When the changes, which successively take place in the determinations to the different parts, commence, a great degree of irritability occurs, and sometimes considerable debility. This is particularly the case with the changes in organs so peculiarly irritable as those connected with generation. At this period, in young women, we find a pallid languor, want of appetite, terrors, tremors, and even convulsions. Where the constitution is more robust and plethoric, violent pains, flushings in the face, and even feverish attacks In the first instance, the determination is unequal to the task, in the second, some obstruction occurs in the exhalents; and, like every other impediment to the free circulation, excites a vis a tergo to overcome it Similar symptoms follow obstruction, joined with the inconveniences which arise from the stoppage of an habitual discharge, added to those which result from the altered determination, which is the consequence.

MENSES DEFICIENTES, the amænorrhæa of Dr. Cullen, including also, with less accuracy, the dysmenorrhœa, difficilis menstruatio of authors, constitute a disease divided into the *emansio* and *suppressio mensium*. The difficult menstruation may be a variety of the latter, as the discharge is temporarily suppressed.

The *emansio mensium* consists of a retention of the discharge at the period when it should take place, independent of pregnancy. To constitute a disease it must be attended with pain, uneasiness, or a disturbance of the functions, for, whatever time may

be fixed as the usual one, this period is protracted in some constitutions, without inconvenience. Much depends on the climate, the mode of life, the structure of the body, and the peculiarities of the constitution. Thus in a warm climate the period may be accelerated to the age of ten or eleven, and, in a cold one, retarded to eighteen : a girl, indulged in all the luxuries of modern fashionable life, and the sedentary seamstress, or the laborious peasant, experience equal prematurity, or retarded expansion : a full-bosomed plethoric girl and a thin attenuated one, with small delicate limbs and a torpid circulation, are respectively in the same circumstances. Somewhat depends also upon structure. In the case recorded in the Edinburgh Journal, where the menses never appeared, the ovaria were wanting. In similar circumstances, the form, the manners, and general appearance, resemble that of a man; so that, when we see the masculine manner and growth, it is highly probable that the menses, if they appear at all, will be scanty, and impregnation improbable, as the female structure is in some important respect defective.

When the discharge does not take place, the whole system becomes languid, the complexion pale, the mucous secretions are defective: and, in consequence, the fœculent discharges are impeded, and the nose is dry. The appetite is bad, or fanciful, often requiring substances not alimentary, though not, as has been said, always antacid, nor in such circumstances does acid abound in the stomach. The mind is whimsical and variable, the voluntary muscles convulsed; the sleep disturbed, the urine pale. In fact, the animal functions are almost wholly suspended, and the vital ones feebly carried on, for the pulse is low and quick, the breathing laborious, consumption, or palsy, seems to impend, and the patient appears to sink rapidly to the grave. In the worst stages of these complaints, a little mucous or serous discharge, perhaps somewhat coloured, changes the scene, and gives some appearance of returning health: it recurs at distant and irregular intervals, attended, each time, with some amendment of all the symptoms, till at last, colour, appetite, spirits, &c. return; and the palid, chlorotic girl becomes a blooming, healthy young woman.

While we are ignorant of the first principles by which nature acts, we know not the impediments to her action. We recognise, in the case before us, either a want of energy, or some resistance in the exhalent arteries; each attended by an apparent sinking of the more active powers. If we observe the progress, the change at last appears to take place from the vessels yielding, in consequence of debility, rather than from increased impetus; for the first appearances, the serous or mucous discharges are complaints, which, at future periods, arise from debility only. The change, though imperfectly taking place, is attended with beneficial consequences; and the powers of nature, thus reanimated, gain additional force, to complete the more perfect state. The regular return however is not yet observed, for this is the consequence of habit.

In this weak state young women often continue for many years; but we know not that the complaint has ever been fatal, for, if the discharge does *not* take place, they recover some share of strength and activity. The complaint is often taken for consumption, and many remedies of a secret kind have acquired credit from the efforts of nature alone. Many old womens remedies have, on the same ground, been highly praised; and the numerous female pills, so often advertised, have appeared to succeed, when nature has done the work. We mean not to deny that this often happens in regular practice, but the foundation of the plans, in this disease, we shall proceed to explain.

The most obvious idea in these circumstances is to give strength and activity to the circulating system: another, though a subordinate one, is to relax either a supposed constriction, or to stimulate, topically, the neighbouring vessels.

To give strength and activity to the circulation is attempted generally by tonics and stimulants. Such however of the former as combine astringency, are supposed to be injurious. The simple bitters are therefore often employed, particularly the camomile flowers, and the columbo root. The myrrh is a medicine of a more doubtful nature; and, as a narcotic bitter, may appear to combine a sedative power. It seems, very certainly, to lessen hectic exacerbations. Whether it has a peculiar power in promoting the menstrual discharge we dare not say. We never have observed such power, but have suspected, in hectics, where there is a tendency to hæmorrhage from the lungs, that it has contributed to promote hæmoptysis: it may, therefore, have a similar effect. Astringents have been accused of checking the discharge, and we believe with reason. They have been certainly injurious when employed too freely in critical menstruations, and in puerperal profluvia.

The tonics most generally beneficial are the metallic. Of these the most useful, or rather the most used, are the iron and mercury. We have said, that perhaps, with the exception of lead, all the metallic bodies were tonics, but that the two, just mentioned, seemed to give a more decided activity to the circulation, and that the former even occasioned inflammatory action. Iron, or rather, as it is styled inaccurately, steel, is the foundation of the more common boasted panaceas for this complaint, and is often highly useful. Every form has been in turn extolled, and each has perhaps succeeded. We know not that art has contrived a better preparation than the scales found around the anvil, in a blacksmith's shop, or the green vitriol; and whatever iron can effect will be found to result from these remedies. The chalybeate mineral waters are also frequently used with success. Zinc has been occasionally employed, but we believe no other metal in the later periods, since the cordial and diaphoretic powers of gold and silver have been distrusted. Perhaps arsenic might succeed; but the long time required for the continuance of remedies for this complaint will suggest the most suspicious caution respecting this metal. Cold bathing has been sometimes employed for this purpose, but not so frequently as it might, and probably would have been, were not cold considered among the causes which retard menstruation. We have, however, often found it an useful remedy.

The chalybeate mineral waters have been, as usual, rendered more effectual by exercise, change of scene, cheerful society, and pleasing objects; for all assist greatly in producing the change in the constitution

which facilitates the discharge. Indeed every thing which establishes the general health, and gives vigour to the constitution, contributes to the same salutary object.

The stimulants employed to give energy and activity to the circulation must be those which act steadily and with moderation, so as not to exhaust the excitability they are designed to support. The chief of these is warmth, rather of climate than the artificial warmth of fires, though these are sometimes of use when combined with exercise; and the patients in an hospital, who soonest receive relief, are those employed in the kitchen. In other forms, heat has been employed as in warm bathing, particularly in the waters at Bath; and more partially in the semicupium and pediluvium; but this remedy is, in general, better adapted to cases of suppression. The exciting passions, as joy, particularly from an object attained, exercise of every kind, warm generous food, with the moderate use of wine, frequent friction, particularly of the lower extremities, electricity generally employed by sitting on the stool, and perhaps Galvanic shocks, may be useful. Breathing oxygen air seems not to have been employed; yet, as increasing the activity of the circulation and giving the blood a more florid colour, it promises success.

The internal stimulating remedies are various. Of these the most useful are emetics, on the principles already explained in that article. The ammonia; the animal oil of Dippel; the petroleum; the balsam of Peru; guaiacum, and the more irritating cathartics, are employed.

The cathartics however most advantageous are those which act on the rectum, and *topically stimulate* the organs adjoining the uterus. The chief of these is the aloes; and, as costiveness is among the symptoms, so it is best relieved by this medicine: in fact, aloes has a great share in all the secret remedies. Cantharides, as stimulating the bladder of urine, turpentine, as affecting, in the same way, the kidnies, and perhaps the urinary organs through their whole track, and black hellebore, which strongly irritates the whole of the intestinal canal, are useful remedies of the same kind. Shocks of electricity, passed through the pelvis, are said to have succeeded; and cupping-glasses have been applied to the sides, and the thighs, to invite a larger proportion of the circulating fluids to these parts. The effects of the rubia tinctorum we do not know: it is enough to mention, in any part of this article, that it has been recommended.

We mentioned, among the exciting passions, the attainment of any object; and if this be the object of love, the effects are stronger; and matrimony is generally supposed to be an effectual cure. Yet this disease checks every warmer passion; and, except in peculiar circumstances, the chlorotic girl scarcely looks forward to the wedded state as an object of desire.

In our description of the symptoms, we remarked, that the uterine vessels yielded apparently from debility, and there are many circumstances which concur in proving, that some degree of spasm in the weak chlorotic state prevents the discharge. The subject of spasm, as connected with debility, has been sufficiently considered under the articles CONVULSIONES and FEBRIS, q. v.; and, though the connection be admitted, yet the one is by no means a necessary consequence of the other. There are, however, several medicines recommended in the *emansio mensium*, which must chiefly act in this way; among the rest, sitting over the steams of warm water is considered as highly useful. We shall find this remedy particularly so in suppressions, where spasm is more decidedly obvious. The fetid gums are of this kind, and other fetids, as rue, savine, castor, musk, and ambergris, have been recommended. Camphor, which is highly useful, where spasm is certainly the cause, has been recommended in the chlorotic state, and perhaps the myrrh, with some other narcotic bitters, will be chiefly useful as antispasmodics.

Though these are the usual symptoms of that variety of deficient menses, attended with debility, and usually styled the chlorotic state, yet, in some instances, there is considerable fulness and pain, returning at irregular intervals, with vicarious discharges of blood from other organs. As such cases are, however, more common from suppression, or difficult menstruation, we shall speak of the proper remedies under these heads.

SUPPRESSIO MENSIUM. When the habit is established, and the discharge continued monthly from this cause, it cannot be broken with impunity. The most frequent causes of suppression are exposure to cold, frights, falls, sometimes fever, anxiety of mind, or confinement. Suppression from falls is a peculiarly obstinate disorder, and the discharge is seldom restored; for, as in other shocks, the irritability of the vessels is apparently injured. The attack of fever is often attended with the appearance of the catamenia, and this, if at or near the regular period, is a favourable symptom. If at the intermediate part of the interval it is less favourable, though it affords no dangerous or fatal prognostic, as some practitioners have alleged: suppression in consequence of long fevers is from weakness only, but the return is often protracted. We have thought, that when the menses appear, on the attack of fever, out of their usual period of recurrence, the following suppression has been more obstinate. In general, the return of the discharge, after any violent degree of either cause must not be soon expected. Suppression in weak delicate habits differs little, either in symptoms or remedies, from the species of emansio first described. In plethoric habits the symptoms are very different. If the cause occurs during the discharge, a feverish attack often supervenes, the face is flushed, the eyes red; pains in the head and back come on, with sometimes a bleeding from the nose. If a similar cause, occurring in the intervals, is continued in its effects to the usual period of its appearance, symptoms of the same kind are observable; and they recur at each expected return, gradually however declining, till the chlorotic state comes on. In general, the sudden causes bring on the inflammatory, those more slow in their action the chlorotic, suppression.

It has been usual, in cases of inflammatory suppression, to bleed copiously, and this is sometimes necessary, to prevent a vicarious hæmorrhage either in the brain or lungs; but, if it can be avoided, we shall also avoid the danger of establishing a new and dangerous habit. We gain much, in such complaints, by determining the

fluids to the skin, by the relaxing diaphoretics; and the sedative, or antispasmodic power of camphor renders it a valuable medicine in this complaint With either the antimonials, or with camphor, opium is also highly useful, nor should the practitioner neglect to invite the circulating fluids to the hypogastric region, by interposing active purgatives. About the period of the expected return, a smart emetic will prevent the recurrence of the spasm, especially if followed by the camphor, with opium; and the discharge will appear with its former regularity. It sometimes happens, that at the usual period of the return a fever comes on, which, as none of the causes of suppression had preceded, or at least been observed, is usually considered as a common fever. If, however, it is at the period of menstruation, a circumstance which every prudent physician will keep in view, and the fever is of the inflammatory kind, it is highly probable that it proceeds from some spasmodic obstruction in the uterine vessels, and must be treated according to the directions already detailed.

The DYSMENORRHŒA, or MENSTRUATIO DIFFICILIS, is a similar disorder, and a very important one, as it prevents the completion of the anxious wishes of those "who love their lords." The pain, on the occurrence of the discharge, is peculiarly violent; accompanied often with an obstinate constipation, or a suppression of urine. In fact, until the spasm of the uterine vessels is relieved, neither the kidnies nor the bowels yield, however powerful the medicine; and the violence with which each returning discharge is attended, loosens the hold of any embryo, which, in the interval, may have been attached. No disease is more distressing in its symptoms or its consequences; and the regularly returning confinement is disguised by a variety of ingenious inventions, while the consequences in advanced life are all the diseases of celibacy. The remedies are those of suppression, attended with violent pains, but the dysmenorrhœa does not require bleeding. An active laxative at the expected period of the return, followed by a full dose of camphor and opium, will often succeed; and, if repeated at the next period, seldom fails to induce the discharge without the preceding pains. When these have been once and again conquered they seldom recur. In the inflammatory suppression and dysmenorrhœa, pediluvia, and sitting over the steams of warm water, are highly useful The warm bath, raised to the heat of 94° or 9 °, and continued so long as to produce slight faintness, will be often successful; but the laxatives, joined with the relaxants, are not only conducted with more ease, but more certainly effectual.

In the whole of this consideration it will be obvious, that the great object is to correct the deviations from health. When the healthy state is restored, the discharge will return. Medicines therefore should not be too frequently nor too constantly employed; and, on the other hand, too much should not be trusted to nature. It requires a minute discrimination to determine when art should interfere, and how long artificial means should be continued. If our exertions are too violent, the constitution will sink under the double powers of the disease and the medicine: if we are too remiss, the obstruction gains force, and years are required to restore the tone and the general health.

There is, however, a period when the discharge will naturally cease. It is not that the constitution does not supply the fluids as before, but that the diminished irritability of the vessels, or the diminished resistance of the veins, no longer permits the hæmorrhagic effort. This critical period of the female life, MENSES CESSANTES, must be attended to with care. The future health depends in a great degree on our conduct at this time; and we are required to be peculiarly attentive, as female prejudices lead them to attribute every future complaint to some error at this time. The disappearance of the catamenia is preceded by a temporary suppression, continuing perhaps for two or three months, followed by an increased, and unusually continued, discharge. The discharge will sometimes recur at very short intervals, and in profuse quantities, leaving, when absent, a considerable degree of leucorrhœa. The increased evacuation is not always attended with proportional debility, nor the temporary suppression with the symptoms already described. The blood, in these instances, is apparently poured from ruptured veins, without any hæmorrhagic effort. In this way the change is effected, often without disease, and almost unobserved; but the suppression is sometimes attended with general load, with head-ach and wandering pains; and the excessive discharge with considerable debility. Generally speaking, however, art should seldom interpose. The whole is the work of nature, which, as we cannot imitate, we cannot always assist. Experience, however, in the former variety, goes hand in hand with popular prejudice, and the general fulness is succesfully relieved by laxatives. The domestic remedies are not however usually well chosen. Women, attached to their early experience, prefer the aloes, in their warmest preparations, but the object is to lessen the proportion of fluids in the abdominal vessels, and whatever effects this purpose with the least irritation succeeds best. The salts alone are in general too cold, but they may be warmed with the tinctures of the more active purgatives, as of sena, rhubarb, or jalap. These, with the relaxant diaphoretics at night, particularly camphor and opium, will restore the circulation to its proper balance without inconvenience.

The task is more difficult when the discharge is immoderate; for female prejudice demands our active interference to check it, but this is always injurious. Young practitioners are commonly alert to show their skill; but it is wiser to rest, and to observe with care. In general, we have seldom known a more healthy old age than in those where the menses have disappeared with these profuse evacuations. If the woman has confidence in her medical attendant, she will remain at rest, in free air, lightly clothed, without exciting the circulation by aliment too rich, or drinks too stimulating; keeping with anxious care the bowels free by the most cooling laxatives. This conduct should, we think, be pursued, even when the debility is considerable; nor should even opiates be interposed, except the pain is violent. In such cases, powerful astringents are highly injurious, and we have more than once seen apoplectic attacks from their imprudent use. In a few instances we have found it necessary to *regulate* the discharge, but seldom with advantage, and have had reason to suspect schirrosities of the uterus, ulcers,

and cancers from the imprudent use of styptics. If called on, it is necessary to attempt relief in some way; and we have generally found, that though no hæmorrhagic effort is perceivable, we have done more service by cooling and sedative medicines than by bitters and astringents Bitters may indeed be frequently allowed, and they will please, because an astringency is supposed to accompany every medicine of this kind.

The MÆNORRHAGIA, MENSES IMMODICÆ; or an excessive menstrual discharge, independent of the pregnant or puerperal state, is truly an hæmorrhage, and may be either active or passive. The active mænorrhagia arises from cold, from blows or shocks, and almost exclusively occurs in strong robust habits. The passive mænorrhagia arises from debility of the vessels, too fluid blood, from frequent miscarriages or labours, which occasion local debility. There is however an intermediate kind, viz. the excessive discharges, which occur in the indolent and luxurious females of polished life. In these the vessels yield to excessive fulness, in part from debility, but generally with the assistance of some hæmorrhagic effort. In the first variety bleeding is sometimes necessary, though, as usual, a suspicious and uncertain remedy. It must, however, be often used, to prevent immediate bad consequences; but, in general, rest, in a cool free air, with nitre and camphor, very generally with opium, often in large and repeated doses, interposing cooling saline purgatives, will relieve the complaint. The treatment of the second variety differs in no respect from that of other passive hæmorrhages; but the third often baffles our best endeavours. It is difficult to induce the patient to avoid the principal causes, indolence and luxury; and to constringe distended vessels is the surest means of increasing their debility. If, however, she be obedient, lessening considerably the quantity and quality of her aliment, using, at the same time, free exercise in the open air, she will soon find a degree of languor and debility superior to what she before experienced; and it will be difficult to persuade her to continue a disagreeable plan, when her feelings tell her that increased weakness is the consequence. The fact is, that the diminution of the fluids lessens the tension of the vessels; and, as in the parocentesis, and numerous other cases, the diminution of tension produces faintness, and sometimes even convulsions. It will require, then, no little confidence in the physician, and no common resolution to persevere; yet, with perseverance, relief is certain. To steer between opposing prejudices and the best means of relief is difficult; nor do we know what rules to offer. The disposition of the patient must be consulted, and every address employed to lessen the powers of the aliment; to increase the discharge of the bowels by cooling laxatives; to lessen the activity of the circulation by opiates and refrigerants, while by every artifice bodily exercise is promoted. In the summer, sea-bathing, and in the proper season, Cheltenham, and other saline chalybeate waters, may be advised, as change of scene will lead to more frequent exercise in the open air. The fashionable physician, who is contented with receiving his daily fee, while he humours the fancies of his patient by some useless placebo, has the best chance of gaining credit in these cases; as usual, not by assisting, but by pleasing.

Yet some political advice will not be without its advantage. Women look to the period of the access and departure of the catamenia, as well as the monthly recurrence, as times of peculiar delicacy. They are unwilling to take any medicine unless it be consistent with their present circumstances, and are apt to attribute any disappointment to the medicine that they may have been prevailed on to employ. The discharge is, however, an occurrence which we cannot always produce, and which we can seldom prevent, or supply by any vicarious evacuation. In general it requires no peculiar care; but, while popular prejudices exist against the use of any medicine at this time, a prudent physician will forbear to press it, unless absolutely necessary. If it be so, the inconvenience, whatever it may be, must be met, and every bad effect may be obviated by caution. Even a copious bleeding will often not stop the discharge; purgatives will assist it; and opium, though it may occasionally retard, will be ultimately injurious. When, however, the discharge is fully established, and has continued twenty-four or forty-eight hours, the danger of checking it, even in female apprehension, is inconsiderable.

See Medical Observations and Inquiries, vol. v. p. 160; Hoffman's Medicinæ Rationalis Systema; Haller's Physiology; Cullen's First Lines, vol. iii. p. 9. 32; Hamilton's Midwifery, edit. 4th, p. 134; Edinburgh Medical Commentaries, vol. v. p. 119; Lond. Medical Journal, vol. v. p. 183. The works professedly on this subject are however unsatisfactory and erroneous. The various authors on midwifery, particularly Dr. Hamilton, in his Elements, afford the best assistance.

ME'NSIS PHILOSO'PHICUS. A PHILOSOPHICAL or CHEMICAL MONTH is sometimes confined to three days and nights, at others to ten, thirty, and even forty days.

ME'NSTRUA, (from μὴν, or the Hebrew term *meni, a month*). The menses in women, and the bleeding piles in men. The plural also of MENSTRUUM, q. v.

ME'NSTRUUM, (from the same). A fluid body capable of reducing a given solid to the same state, and thus diffusing the latter through every part of the former; called a *menstruum*, because the chemists first assisted its action by a moderate fire for a philosophical month; synonymous with *solvent*. See SOLUTIO.

MENSURA. The variety of measures employed by different nations renders medical directions often obscure, and occasionally fallacious. The word *mensura* is sometimes employed absolutely to denote a given bulk, and the measure occasionally contains one, sometimes two, quarts, and the quadrans mensuræ is either six or twelve ounces. The great diversity in this respect has induced the London college to order every thing by weight; for a pint of the purest alcohol is very different from even a pint of water, and much more so from a pint of the vitriolic acid. In general, the pint is supposed to be equivalent to a pound; but, in medicinal directions, it is estimated at twelve ounces: the French pint is double, and the Scotch pint equal to two quarts. The cantharus of the Swedes equals five pints.

In smaller quantities, the tea spoonful is estimated as equal to a dram, but few tea-spoons hold more than forty drops. A desert spoon holds somewhat more than two drams, called, in prescriptions, *cochleare medium*, and the table-spoon about half an ounce.

The modern French weights and measures are greatly

changed, and have produced no little confusion in medicine, chymistry, and even in common life. We shall detail the principles of their new system under the article PONDERA, on which that of their measures depends; so that we shall in this place only explain the terms. The fundamental measure, the LITRE, filled with distilled water, is equivalent to the Paris pint, somewhat more than two English pints, and, in weight, is nearly equal to the kilogram, two pounds. The SEMILITRUM (demilitre) is equal to somewhat more than a pint; the DECILITRUM to about three ounces, and a dram, equal in weight to the hectogram: the double and the half of the decilitrum are easily estimated. The litre contains fifty cubic inches, and consequently the centilitrum half a cubic inch; and the double centilitrum one cubic inch, or nearly five drams, about a large table-spoonful.

MENTA'GRA, (from *mentum, the chin,* and *ἄγρα, a disease*); IMPETIGO. An obstinate tetter, which appeared in Italy during the reign of Claudius Cæsar, beginning upon the chin, extending itself over the face, and descending to the neck, breast, and hands. A cautery was applied to some convenient part, so deep as to penetrate to the bone.

We sometimes find a disease of less virulence which seems to merit this appellation. It affects the bulbs of the hair on the chin, resembling, in its nature and treatment, the tinea capitis.

MENTA'LES, (from *mens, the mind*). Alienation of the judgment, in which the functions of the mind are disturbed.

Nosologists have formed a class of diseases under this title, and in an arrangement from symptoms it may probably be admitted. It is, however, necessary to remark, that, though the mind be affected, a læsion of any function, which alone constitutes disease, can only be recognised by the practical physician; and we have found changes, in appearance most purely mental, arise from a material cause. Our idea of the duration of time, for instance, is, as we shall see, produced by opium: a fit of apparent insanity will be relieved by discharging a very moderate quantity of bile. See MANIA.

ME'NTHA, MINT; *hedyosmos,* from its sweet smell; is a perennial herb with squares talks, serrated leaves set in pairs, and spikes of monopetalous flowers, each cut into four sections, and followed by four seeds inclosed in the cup. The species are numerous, but not hitherto described with sufficient accuracy. See Linnæan Transactions, vol. v. for an account of the British species by Dr. Smith.

ME'NTHA AQUA'TICA, Lin. Sp. Pl. 805, *sisymbrium sylvestre, mentha rotundifolia palustris.* RED WATER-MINT. Its leaves are somewhat oily, and set on pedicles; the stamina long, standing out from the flowers.

ME'NTHA CATA'RIA; *nepeta cattaria, mentha felina, herba felis, calamintha palustris, nepetella, nepeta cataria* Lin. Sp. Pl. 796, for cats are so delighted with the smell that they roll on it, and destroy the plant unless defended till it has acquired some strength. It is an hoary plant with square stalks; the leaves heart-shaped, acuminated, serrated, and set in pairs on oblong pedicles; the flowers whitish, labiated, standing on spikes at the top of the branches. The upper lip is divided into two, and the lower into three, sections. It grows wild in hedges and on dry banks, and flowers in June; is moderately aromatic, of a strong smell, resembling a mixture of mint and penny-royal, and participates of their virtues. Water dissolves their active matter; but rectified spirit extracts it more completely. Distilled with water, they yield a yellow essential oil, not quite so agreeable as the herb, though resembling it in smell: the remaining decoction is bitter and subastringent. See Raii Historia Plantarum; Cullen, Lewis, and Tournefort's Materia Medica.

ME'NTHA CORYMBI'FERA MI'NOR. See AGERATUM.

ME'NTHA CRISPA, Lin. Sp. Pl. 805, agrees in its general virtues with the MENTHA SPICATA, q. v.

ME'NTHA HIRSUTA, *var. δ.* Smith, in the Linnæan Transactions, v. 196; probably a variety of the mentha sativa. See FLORA BRITANNICA.

ME'NTHA PALU'STRIS FO'LIO OBLO'NGO, *mentastrum hirsutum, auricularia;* HAIRY WATER-MINT, or EARWORT, has long hairy leaves, without pedicles, and broad spikes of flowers. All the water-mints grow in marshes and on the banks of rivers, and flower towards the end of summer; their smell is less agreeable than that of spear-mint, their taste more bitter and pungent: the second sort resembles the penny-royal. They yield much less essential oil than the spear-mint, and their virtues, though similar, are greatly inferior.

The hairy water-mint is supposed to be *auricularia, planta Zeylanica,* or earwort, celebrated by Marloe for the cure of deafness.

ME'NTHA PIPERI'TIS. PEPPER-MINT. *Mentha piperita* Lin. Sp Pl. 805; hath acuminated leaves on very short pedicles, and the flowers set in short thick spikes or heads: it is a native of this kingdom, and its natural soil is a watery one; but in any other it does not degenerate.

Pepper-mint hath a more penetrating smell, with a stronger and warmer taste than the other mints. In the mouth it feels at first hot, afterwards cold, and somewhat nitrous. From its stomachic, antispasmodic, and carminative qualities, it is of great use in flatulent complaints, hysteric depressions, nausea, and other dyspeptic symptoms; often producing immediate relief by diffusing a glowing warmth through the whole system. Its qualities are with great probability ascribed to the camphor, which the experiments of Gaubius have proved to be largely contained in it, and it is seldom injurious from its stimulus.

It readily and strongly impregnates either water or spirit by infusion: in distillation with water it gives over a large quantity of essential oil, of a pale greenish yellow colour, growing darker-coloured by age, and possessing a great degree of the smell and pungency of the herb. As much of this oil as can be suspended in rectified spirit of wine is sold under the name of the essence of pepper-mint. The decoction which remains after distillation, like that of the other mints, is bitterish and subastringent. For the water, spirit, and oil, see MENTHA SPICATA.

ME'NTHA PULE'GIUM. See PULEGIUM.

ME'NTHA SPICA'TA; *mentha sativa* Lin. Sp. Pl. 805, *mentha vulgaris,* HART-MINT, and COMMON SPEAR-MINT, hath oblong, narrow-pointed leaves, joined close to the stalk, and small purplish flowers,

standing on long spikes on the top. Though a native of warmer climes, it is common in our gardens, and flowers in June and July.

The smell of mint is agreeably aromatic, and the taste bitterish and moderately warm; it is carminative and stomachic, particularly useful in relieving vomitings and weakness of the stomach. An infusion of mint in water is said to prevent the coagulation of milk in stomachs where acidity prevails; and in general this herb nearly resembles the pepper-mint, though perhaps less efficacious as an antispasmodic, and more injurious as a stimulant. In vomitings from inflammation in the stomach it is injurious.

The juice expressed from the leaves retains the bitterness and astringency, but not the aroma of the mint, which, however, is not lost by keeping, drying, or a moderate degree of heat. In five or six hours cold water extracts the more agreeable and active parts of the mint; a longer maceration extracts the grosser and less agreeable portions. Hot water more quickly extracts its virtues, but boiling dissipates the aroma. Infusions and tinctures contain the whole virtue of the mint; the oil and the distilled water only the aroma.

Mint-water should be distilled from the fresh herb, and it is improved by adding some dried mint. In distillation with water an essential oil rises, which is of a pale yellowish colour, changing by age to a reddish hue: about an ounce is procured from ten pounds of mint, which for this purpose should be gathered when the flower is expanding. The oil is not, however, an agreeable preparation.

Dry mint yields to spirit of wine, either with or without heat, all its virtue, without its disagreeable parts. Spirit takes up very little in distillation. An extract made with spirit possesses the concentrated virtues of a large portion of dried leaves. Fifteen grains of the resinous extract obtained from either the common-mint or pepper-mint, by means of spirit of wine, is said to be equivalent to six drams of the dried herb. The spirituous tincture mixes with watery liquors without precipitation; but spirituous liquors impregnated with its pure volatile parts by distillation turn milky on the admixture of water. A conserve made in the usual way is an excellent vehicle for other medicines, in diseases of the stomach.

Tincture of mint is made by adding to a pint of mint water half an ounce of the dried leaves of mint: after standing four hours in a warm place, it must be strained. The distilled water contains as much of the volatile part of the herb as it can retain; but by infusion it takes up as much of the extractive matter as pure water. Thus any of the simple distilled waters may be much improved, and, when required, the waters distilled from one vegetable may be the menstruum for a different one.

The college of physicians order from the mentha sativa and mentha piperitis, a water and a spirit, which are directed to be made as follows. Take of spear-mint or pepper-mint dried, one pound and a half, water sufficient to prevent an empyreuma; and to the same quantity of the herb they order one gallon of spirit, with water sufficient to prevent an empyreuma. In each process they draw off a gallon. The essential oils of each are obtained by distillation. See Oleum.

MENTHASTRUM. See Mentha aquatica.

ME'NTULA, (from the Hebrew term *matah, a staff*). See Penis.

Me'ntula ala'ta. See Penna.

MENTULA'GRA, (from *mentula*, and *αγρα*.) A disorder of the penis, induced by a contraction of the erectores musculi.

ME'NTUM, (*ab eminendo*, from its sticking out). The chin is the anterior protuberance which terminates the lower part of the face; the under part of the chin is termed its basis, distinguished from the throat by a transverse fold, extending from ear to ear; in the middle of the chin a dimple is usually found.

MENYA'NTHES TRIFOLIA'TA, et PALU'STRIS. See Trifolium paludosum.

MEPHI'TIS, (from the Syriac term *mephuhith, a blast*). A poisonous exhalation, or what the miners call a damp. It was formerly applied to any air, not respirable, especially if attended with an offensive smell. Modern chemistry is more accurate; and what was with little discrimination called mephitic is now hydrogen, nitrogen, or carbonic acid gas.

MERCURIA'LIS, (from *mercurius, quicksilver*). Mercurial, or a preparation of mercury. But in obsolete authors, the *atra bilis* is also called the mercurial humour; and the diseases from this source have the same appellation. In botany it is the name for *lapathum unctuosum folio triangulo, blitum, chenopodium, bonus Henricus* Lin. Sp. Pl. 318, all-good, English mercury, a plant with triangular leaves, covered underneath with a whitish unctuous meal: its stalks are striated hollow, partly erect and partly procumbent, bearing on the tops spikes of small imperfect flowers, each of which is followed by a small black seed, inclosed in the cup; perennial, grows in waste grounds, and flowers in August. The leaves are mucilaginous, a little subsaline, and used as emollients in clysters and fomentations. The young shoots are eaten in spring as a gentle laxative and diuretic. See Raii Historia.

Mercuria'lis a'qua. See Beya.

Mercuria'lis fru'cticosa inca'na testicula'ta; *marisicum, thelygonon, mercurialis tomentosa* Lin. Sp. Pl. 1465. Children's mercury, is a garden plant, and used in Barbary against some female diseases.

Mercuria'lis mas, *mercurialis testiculata, spicata,* and *fœmina* French mercury. It is the *mercurialis annua* Lin. Sp. Pl. 1465, var. *α* and *β*, hath smooth glossy leaves, and branched stalks. Each variety is annual, and grows wild in shady uncultivated grounds. The leaves have no remarkable smell, and very little taste; they are slightly mucilaginous, but seldom used.

Mercuria'lis mucila'go. See Argentum vivum.

Mercuria'lis; *cynocrambe, canina brassica, persicaria siliquosa, mercurialis montana,* wild mercury, dog's mercury, *mercurialis perennis* Lin. Sp. Pl. 1465, is one of the poisonous plants found in Great-Britain. The root is creeping, light coloured, and fibrous; the stalk erect, green, juicy, and unbranched. The leaves are oval, serrated, pointed at the extremity, placed in pairs opposite each other. The flowers grow at the tops of the stalks in thin slender spikes from the alæ of the leaves, of a light green colour, and are male and female. The furrows of the germen receive a barren

filament, terminated with a gland, marked with two dark-coloured spots. It flowers early in the spring; is found in woods, shady places, and the banks of ditches; distinguished from the French mercury by being perennial, larger, with rough leaves, and the stalks not branched.

In early spring it may be eaten with safety, dressed like spinach; but its acrimony is soon evolved, and it produces nausea, vomiting, and afterwards comatose symptoms. These ill effects are removed like those of poisonous mushrooms. See AMANITA and VENENUM.

Wilmer's Observations on Poisonous Vegetables.

MERCU'RIUS. QUICK OR LIVING SILVER; from its great fluidity. See ARGENTUM VIVUM.

MERCU'RIUS ALCALISA'TUS. ALCALISATED MERCURY; *hydrargyrus cum creta;* QUICKSILVER with CHALK; *Æthiopus albus.* ℞. Hydrargyri puri ℥iij. cretæ pp. ℥v., rub them together until the globules disappear. Ph. Lond. 1788.

MERCU'RIUS CALCINA'TUS; *mercurius præcipitatus per se.* CALCINED QUICKSILVER, *hydrargyrus calcinatus.* This preparation is directed to be prepared by exposing a pound of quicksilver in a flat-bottomed glass cucurbit to a heat of about 600 degrees, in a sand-bath, till it becomes a red powder. By agitation, or by triture, similar effects are produced on the mercury, and in much less time. This has lately been a fashionable preparation, but is scarcely, if at all, superior to calomel, though the prejudices of the moment have occasionally given it the preference with ourselves and others.

MERCU'RIUS CINNABARI'NUS. See CINNABAR FACTITIA.

MERCU'RIUS CORROSIVUS SUBLIMATUS. See MERCURIUS CORROSIVUS ALBUS.

MERCU'RIUS CORALLI'NUS, *arcanum corallinum.* This was designed to render the mercurius nitratus ruber a more mild internal medicine; but as no considerable advantage was obtained by the process, it has been rejected.

MERCU'RIUS CORROSI'VUS A'LBUS. The WHITE CORROSIVE MERCURY; *mercurius corrosivus sublimatus, gas siccum sublimatum, albi, aquila alba, sublimatum, hydrargyrus muriatus,* MURIATED QUICKSILVER. The modes of preparing this medicine are various; but the college of London direct quicksilver and vitriolic acid two pounds of each, dried sea-salt three pounds and a half: the quicksilver is to be mixed with the acid in a glass vessel, and boiled in a sand heat till the matter is dried; which is added, when cold, to the sea-sält, in a glass vessel. The whole is sublimed in a glass cucurbit, with a heat gradually raised, and the sublimed matter separated from the scoriæ. Pharm. Lond. 1788.

The greatest part of this preparation used in England is brought from Holland and Venice; and as has been suspected, adulterated with arsenic. Dr. Lewis gives the following method of detecting the fraud: "Take any quantity of the suspected white corrosive mercury, powder it in a glass mortar, and mix it well with twice its weight of black flux (see CALCINATIO), and a little filings of iron; put the mixture into a crucible capable of holding four or five times as much; give a gradual fire until the ebullition ceases, then hastily increase it to a white heat: if no fumes of a garlic smell be perceived during the process, and if the particles of iron retain their form, without any of them being melted, we may be sure that the mixture contains no arsenic." Neumann denies the possibility of this preparation being adulterated with arsenic, and observes, that instead of their subliming together, the arsenic will attract the marine acid to itself, and the mercury will be revived, instead of sublimed in the form of this preparation.

Sublimated mercury is peculiarly adapted to those cases in which the slow continued action of the metal is required, particularly in eruptions, in glandular indurations, and some similar complaints. In lues it often fails, after having first appeared to succeed. It was given by Van Swieten in lues, dissolved in corn spirit; and in this form it sits most easily on the stomach; but the watery solution is not inconvenient in this respect. A small proportion of crude sal ammoniac in the solution prevents the precipitation. It may be given also in pills mixed with the crumb of bread, and the dose, at first, should not exceed one-fourth of a grain. See ARGENTUM VIVUM.

MERCU'RIUS DU'LCIS SUBLIMA'TUS; DULCIFIED MERCURY SUBLIMATE, *calomelas;* and when the sublimation hath been ten or twelve times repeated, *panacea mercurii.*

It is the *mercurius corrosivus albus,* dulcified by the addition of crude mercury. The London college directs the proportion of nine ounces of purified quicksilver to twelve ounces of the muriated quicksilver: rub them, it is added, together till the globules disappear, and sublime; in the same manner repeat the sublimation four times; afterwards rub the matter into the finest powder, and wash it by pouring on boiling distilled water. Ph. London, 1788. In the Augustan Dispensatory one sublimation only is required. See ARGENTUM VIVUM.

The marks of sufficient dulcification are, its being perfectly insipid to the taste, and indissoluble by long boiling in water. If the water hath taken up any part of the mercury, it may be discovered by dropping into the liquor an alkaline solution, which will precipitate the mercury it may contain. If the dulcified mercury turns black on being mixed with lime-water, or volatile alkali, it is duly prepared.

We have already mentioned Mr. Scheele's preparation of calomel in the humid way, and explained its principles. We shall now add the process at length, translated from the Stockholm Transactions.

"Half a pound of quicksilver and the same quantity of nitrous acid are to be put into a small vessel with a long neck, the mouth of which is to be covered with paper. The vessel is then to be placed in a warm sand-bath; and, after a few hours, when the acid affords no signs of its acting any longer on the quicksilver, the fire is to be increased to such a degree that the solution may nearly boil. This heat is to be continued for three or four hours, taking care to move the vessel from time to time, and at last the solution is to be suffered to boil gently for about a quarter of an hour. In the mean while we are to dissolve four ounces and a half of fine common salt in six or eight pints of water. This solution is to be poured boiling into a glass vessel, in which the above mentioned solution of quicksilver is to be mixed with it, gradually,

and in a boiling state also, taking care to keep the mixture in constant motion. When the precipitate is settled, the clear liquor is to be drained from it, after which it is to be repeatedly washed with hot water till it ceases to impart any taste to the water. The precipitate obtained by this method is to be filtered, and afterwards dried by a gentle heat. This is the hydrargyrus muriatus mitis of the London Pharmacopœia, only that they order four ounces of sea-salt, instead of four ounces and a half.

"It might be supposed, that when the nitrous acid ceases to effervesce with the mercury, it is saturated with it; but this is far from being the case: the acid, when the heat is increased, being still able to dissolve a quantity of it; with this difference, however, that the quicksilver at the beginning of the process is calcined by the acid, but afterwards is dissolved by it in a metallic form. In proof of this we may observe, that not only more elastic vapour arises, but also, that by adding either fixed or volatile caustic alkali we obtain a black precipitate; whereas, when the solution contains only calcined quicksilver, the precipitate becomes yellow by such an addition. If this black precipitate is gently distilled, it rises in the form of quicksilver, leaving a yellow powder, which is in fact that part of the mercury which in the beginning of the operation was calcined by the nitrous acid.

"The boiling of the solution for about a quarter of an hour is necessary, in order to keep the hydrargyrus nitratus in a dissolved state, it being much disposed to crystalise. In general some of the mercury remains undissolved; but it is always better to take too much than too little of it, because the more metallic substance the solution contains, the more hydrargyrus muriatus mitis will be obtained.

"It is necessary to pour the mercurial solution into the solution of salt by little at a time, and cautiously, so that no part of the undissolved quicksilver may pass along with it. Two ounces of common salt are sufficient to precipitate all the mercury; but then it may easily happen that some superfluous mercurius corrosivus attaches itself to this precipitate, which the water alone is incapable of separating completely. This is undoubtedly the reason why mercurius precipitatus albus is always corrosive. I have found that common salt possesses the same quantity as sal ammoniac, viz. that of dissolving a greater quantity of mercurius corrosivus. I therefore employ four ounces and a half of common salt, in order to get the mercurius corrosivus entirely separated."

Of all the preparations of mercury, calomel is the most frequently used; and all the virtues attributed to mercury this preparation apparently possesses. The dose is from gr. i. to ℈i. according to the intention; but five or eight grains are rarely exceeded.

We have said, that probably calomel might supply every other preparation; but that accident, or the routine of practice, easily becoming a habit, sometimes fixed a preference for other forms, without their possessing any real superiority. In glandular complaints calomel seems to be preferred; but small doses of the muriated mercury are often equally efficacious. In cutaneous complaints, it is often used in combination with the antimony, though from the preparation employed, the sulphur auratum, its virtues, as a mercurial, are greatly diminished. In the early preparation of Dr. James's powder (see JAMES), calomel formed a portion; and it has been lately fashionable to add it to the antimonial, in the early periods of fevers, to secure a discharge from the bowels as soon as possible. The exhibition of calomel with camphor and opium, in the early stages of pleurisy, as recommended by Dr. Lysons, we think a more doubtful practice; and on this account we are unable to speak of its effects from experience. If, however, it is found to supersede the necessity of frequent bleeding, as has been asserted, it will undoubtedly be useful; but we do not find that the plan has been sufficiently followed to enable us to decide on its efficacy or eligibility. In the confluent small-pox calomel has been given to assist or bring on the salutary salivation; but in this disease it has been dangerous from its inflammatory stimulus, nor is there sufficient time to produce the necessary evacuation. Rubbed upon the inside of the lips, it has produced similar effects to those which are occasioned by taking it internally, particularly in the lues venerea: in cases of chancres also, used by itself, or in the following form, it is highly advantageous.

℞. Cerati lapid. calamin. ℥ss. calomelanos pp. ʒi. m.

MERCU'RIUS DUPLICA'TUS PHILOSO'PHICUS. See REBIS.

MERCU'RIUS EME'TICUS FLA'VUS. *Hydrargyrus vitriolatus, turpethum minerale;* VITRIOLATED MERCURY, and TURBETH MINERAL.

Take of purified quicksilver, vitriolic acid, of each a pound; mix in a glass vessel, and heat them by degrees, until they unite into a white mass, which is to be perfectly dried with a strong fire. This matter, on the affusion of a large quantity of hot distilled water, immediately becomes a yellow powder. Rub the powder carefully with this water in a glass mortar; after it has subsided, pour off the water; and, adding more distilled water several times, wash the matter till it becomes insipid. Pharm. Lond. 1788.

To edulcorate it more quickly and effectually, the water intended to be used in its ablution is impregnated with a determined proportion of fixed alkaline salt; and by this means the quantity of the preparation will be increased, and its strength more equal.

The yellow emetic mercury is a powerful vomit; and, like other mercurials, will excite salivation: in robust habits it hath been used in cutaneous disorders and glandular obstructions. As an emetic, it hath been given to eight or ten grains; but in this dose it operates violently, and is only employed when the shock of vomiting is required to be considerable. It is thus sometimes useful in palsies, and more certainly in amaurosis. Half a grain, or a grain, given every night, is said to have produced the best effects in the most inveterate cases of the venereal disease, in obstinate rheumatisms, and ulcers that were difficult of cure. It is a powerful medicine, but yet does not appear to excel the other less violent mercurials, except in particular instances, where considerable and rapid effects are necessary, and where the constitution is robust. It is a favourable medicine with some active practitioners, particularly Dr. Maryatt, in dropsies. See Maryatt's Art of Healing.

MERCU'RIUS PRÆCIPITA'TUS RUBER. *Hydrargyrus nitratus ruber.* Pharm. Lond. 1788. RED PRECIPITATE. The London college directs us to take

of purified quicksilver and nitrous acid each a pound; muriatic acid, one dram by weight; to mix in a glass vessel, and dissolve the quicksilver in a sand-bath; then to raise the fire till the matter is formed into red crystals. Pharm. Lond. 1788. As soon as it hath acquired the sparkling red colour it should be immediately removed from the fire, or it will soon lose it again.

This preparation is sometimes mixed with minium and vermilion, but then the peculiar brilliancy is destroyed. If only minium is added, it may be detected by giving a sweetish taste to vinegar. If laid also on a very hot iron, the mercury will evaporate, leaving the lead behind.

The red nitrated quicksilver is only used externally as an escharotic; and if finely powdered and mixed with the unguentum resinæ flavæ, in the proportion of one or two scruples to an ounce, it is an excellent digestive for foul ill-conditioned ulcers, bringing on a proper purulent discharge, instead of a thin sanies.

UNGUENTUM HYDRARGYRI NITRATI. See TRACHOMA.

CERA'TUM HYDA'RGYRI NITRA'TI. CERATE OF NITRATED QUICKSILVER. ℞. Unguenti hydrarg. nitrati; cerati spermatis ceti āā ℥ij m It is sometimes applied to scrophulous and phagedenic ulcers.

MERCU'RIUS PRÆCIPITATUS A'LBUS. *Calx hydrargyri alba.* WHITE CALX OF QUICKSILVER. The London college directs the following process: take of muriated quicksilver, sal ammoniac, water of kali, each half a pound; dissolve first the sal ammoniac, afterwards the muriated quicksilver in distilled water, and add the water of kali; wash the precipitated powder until it becomes insipid. Ph Lond 1788.

Great care is required lest more of the fixed alkali be added than is necessary, for the precipitate will then be yellow. This preparation is almost constantly confined to external uses. Half a dram or two scruples of it, added to an ounce of pomatum, is used as an elegant cure for the itch; the same quantity may be dissolved in two ounces of a thick decoction of linseed, as a liniment for curing chancres when situated on the glans penis, or on the inside of the prepuce; a rag being dipped in it, is applied to the glans, and the prepuce may be drawn over it.

This precipitate is adulterated with starch, and with white lead. The first is discovered by its becoming glutinous on being dissolved in a small quantity of water; the second by adding one-third of its weight of alkaline salt; heating the mixture in a crucible till no fumes arise. If the residuum does not melt in water, it is adulterated.

MERCU'RIUS PRÆCIPITA'TUS DU'LCIS. Ph. Lond. 1721. See HYDRARGYRUS MURIATUS MITIS.

MERCU'RIUS PRECIPITA'TUS PER SE. MERCU'RIUS CALCINATUS.

MERCU'RIUS SACCHARA'TUS. SUGARED MERCURY. A preparation designed to give the mercury in a liquid form. Equal quantities of brown sugar-candy and mercury are triturated till the globules disappear, adding a few drops of the oil of juniper.

MERCU'RIUS VI'TÆ, *angelicus, Algarothi pulvis.* THE MERCURY OF LIFE; the precipitate formed by diluting butter of antimony with water.

This powder when edulcorated is a calx of antimony, always nearly of the same strength, and therefore sometimes preferred to the glass in preparing tartarised antimony.

ME'RGEN, (from the Arabic term *morgan*). See CORALLIUM.

MERLU'CIUS, (quasi *maris lucius*, the sea-pike). See ASELLUS MARINUS.

MERYOPHY'LLON. See MILLEFOLIUM.

MEROCE'LE, (from μερος, *the thigh*, and κηλη, *a rupture*). See HERNIA FEMORALIS.

ME'ROS, (from μειρω, *to divide*). See FEMUR.

ME'SANG DE VA'CCA. See BEZOAR BOVINUS.

MESARÆ'ON, μεσαραιον, (from μεσος, *medius*, and αραια, *belly*). MESENTERIUM, q. v.

MESARAI'CA, vel MESARAI'CA MA'JOR VE'NA, (from μεσαραιον, *the mesentery*). The MESARAIC or MESENTERIC VEIN, is the continuation of the vena portæ ventralis. (See PORTÆ VENA.) It bends towards the superior mesenteric artery, and accompanies it in those portions of the mesentery and mesocolon which belong to the small intestines, the cæcum and right portion of the colon; as it runs down it forms an arch obliquely, like that of the artery, which is also ramified on the convex and concave sides. It very closely accompanies the mesenteric artery, and is branched out in nearly the same manner.

MESARAI'CA MI'NOR VE'NA. See HÆMORRHOIDALIS INTERNA VENA.

MESENTE'RICÆ ARTE'RIÆ, (from *mesenterium*, *the mesentery*). The upper mesenteric artery, called *colica*, seu *mesenterica superior*, rises somewhat below the cœliac. The aorta a little above its division gives off the inferior, viz. the colica sinistra seu mesenterica inferior, to the left side upon the mesocolon, the lowest branch of which goes to the extremity of the anus, and forms the hæmorrhoidal artery. The upper branches anastomose with the superior mesenteric, and are azygous. The upper mesenteric branch forms a large arch in its course from the right side to the left of the mesentery; and from its convex side many branches pass to the intestines, where they communicate by reciprocal arches. A few branches go from the concave sides, spreading themselves in the mesocolon, colon, &c.

MESENTE'RICÆ GLA'NDULÆ. The MESENTERIC GLANDS. The lymphatic glands in the mesentery are larger in young than in old subjects; and, if not the proper seat of scrophula, they are always affected in that disease.

MESENTE'RIUM, (from μεσος, *the middle*, and εντερον, *intestine*); *epichordis*; *mesaræon*; the MESENTERY, thus named from its being in the middle of the intestines, is a duplicature of the peritonæum, nearly of a circular figure fixed in the middle of the abdomen, connected by a cellular membrane, expanding and receiving the intestines. It begins loosely upon the loins, extending to all the intestines, except the duodenum; but that part of it which belongs to the large intestines is called *mesocolon*, and is a production of the true mesentery. The diameter of this circular membrane is somewhat more than four inches, and the circumference when its plaits are unfolded are about three ells in length: the intestines plaited on this circumference are nearly three times that length. The inner membrane is most strictly its own; and in it the vessels and the glands are found. The two exterior

ones are from the peritonæum, and between these the arteries and veins lie, whose branches are dispersed on the intestines. It confines the intestines, and sustains the arteries, veins, lymphæducts, and nerves, in their passage to and from them.

Many disorders are described by different authors as arising from the mesentery; but Dr. Hunter thinks it is rarely the seat of disease; and that even its glands, sometimes disordered in children, are not affected so frequently as is suspected. Riverius, in the chapter on obstructions in the mesenteric glands, observes that the causes and cure are the same as in similar disorders of the liver. See Praxis Medica, lib. xiii.

MESENTERI'TIS, (from *mesenterium*). Dr. Cullen considers it as a species of PERITONITIS, q. v. calling it *peritonitis mesenterica*. See INFLAMMATIO MESENTERII.

MESI'RE. A disorder of the liver, mentioned by Avicenna, accompanied with a sense of heaviness, tumour, inflammation, pungent pain, and blackness of the tongue.

MESOCO'LON, (from μεσος, *the middle*, and κωλον, *the colon*). When the mesentery has reached the extremity of the ilium, it contracts and becomes the mesocolon. One lamina, turned to the right side, is called the right ligament of the colon. The mesocolon then rising to the right kidney, seems to be lost by the adhesion of the colon to the kidney and the first curvature of the duodenum; a circumstance which explains the utility of purgatives in nephritic cases. When it again appears, its breadth increases, and it passes under the stomach, liver, and spleen, downwards to the left kidney. The circumference, at this part, is very little plaited, and the colon is affixed to it, so as to hide the ligamentary band at its smaller curvature. By its smaller circumference it incloses the duodenum in the triangular sheath, already described, and, by its larger, the colon, forming in its passage a slight adhesion to the greater curvature of the stomach.

It contracts below the left kidney, forming the ligamentum coli sinistrum, and then expands again, fixed to the convolutions of the colon as in the superior portions. See MESENTERIUM.

MESOGA'STRION, (from μεσος, and γαστηρ, *the stomach*); the connecting membrane, or the concave part of the stomach, which attaches it to the adjacent parts. See OMENTUM.

MESOGLO'SSI, (from μεσος, and γλωσσα, *the tongue*). See GENIOGLOSSI.

MESOME'RIA, (from μεσος, and μηρος, *the thigh*); that part of the body which lies betwixt the thighs. Rufus Ephesius.

MESOMPA'LION, (from μεσος, and ομφαλος, *navel*). The middle of the navel.

MESOPHY'RON, (from μεσος, and οφρυα, *the eye*); that part of the face which lies betwixt the eyebrows. Rufus Ephesius.

MESOPLEU'RIOI, (from μεσος, and πλευροι, *the ribs*). See INTERCOSTALES.

MESO-RE'CTUM, (from μεσος, and *rectum*, *the straight gut*). It is a production of the peritonæum, which invests the intestinum rectum. About the middle of the fore side of this intestine it forms a semicircular fold, which appears when the intestine is empty, but is lost when full.

MESOTHE'NAR, (from μεσος, and θεναρ, *the palm of the hand*), is a flat and nearly a triangular muscle, lying between the first phalanx of the thumb and the bottom of the palm of the hand, inserted into the ligament which connects the os magnum of the carpus to that which supports the thumb, as well as into that bone of the metacarpus which supports the middle finger, and to that which answers to the index: from thence, the fibres contracting to an angle form a tendon, which is inserted into the head of the first phalanx of the thumb. Winslow.

ME'SPILUS, (from ὅτι εν τῳ μεσῳ πιλος; because it has a cap or crown in the middle). The MEDLAR. *Mespilus germanica* Lin. Sp. Pl. 684. The common medlar is about the size of an apple-tree; leaves strong and sharp-pointed; flowers in May, and the fruit ripens in September. In Germany these trees are wild; with us cultivated. The fruit hath an austere astringent taste, which is lost when kept so long as to appear rotten; and it is then cooling and slightly astringent.

ME'SPILUS A'pii fólio. See SPINA ALBA.

METACA'RPIUS, (from *metacarpus*). A small fleshy muscle, situated obliquely between the large internal angular or transverse ligament of the carpus and the whole inside of the fourth metacarpal bone; fixed by a tendon to the os orbiculare, and to the neighbouring part of the large ligament of the carpus: at its other end to the outer edge of the fourth metacarpal bone.

METACA'RPION, METACA'RPUS, (from μετα, *after*, and καρπος, *the wrist*), that part of the hand situated between the wrist and the fingers. The ancients called the carpus *brachiale*, and the metacarpus *post-brachiale*. It forms on the inside the palm, and on its outside the back of the hand, but the first phalanx of the thumb is not a part of the metacarpus. The metacarpal bones support the fingers. Each bone of the metacarpus is long and flatted at the ends. The anterior surface of each body is concave, with a sharp ridge in the middle to separate the interosseous muscles. The ends next the arm have a hollow, for the articulations of the carpus; and those next the fingers are distinguished by protuberances for fixing the ligaments that unite these bones. A rough ring is observable round their heads, where the capsular ligaments that unite them to the fingers are fixed. These bones are united to the carpus and to each other by surfaces almost plain, as little motion is required; and, in those of the fœtus, each end is usually cartilaginous. The hollow of the hand is formed by the concavity of the fore part of these bones, and, from the minute motion of which they are susceptible, they form a secure basis for the action of the fingers.

METACINE'MA, (from μετα, and κινεω, *to remove*). A removal of the pupil of the eye from its proper situation.

METACO'NDYLI, (from μετα, and κονδυλος, *a knuckle*). The last joints of the fingers next the nails.

META'LLA, (from the Hebrew term *metil*, *a hard substance*). METALS, or METALLIC SUBSTANCES, are distinguished by their splendor, their opacity, their fusibility, specific gravity, conducting power, hardness, elasticity, malleability, ductility, tenacity, and combustibility. From their hardness and elasticity, they are

adapted for the construction of different instruments employed by surgeons; and these properties fit them for discovering solid bodies by the vibrations they convey to the hand, as a stone in the bladder, or a bullet under the muscles. Their splendor is connected with their opacity, for all metals are impervious to light; and the green rays, which seem to pass through the thinnest gold leaf, are seemingly owing to light transmitted through an accidental fracture.

All metals are fusible; and mercury even retains its fluidity in our greatest colds. The specific gravity of the lightest metal, arsenic, is more than five times greater than water, and much more considerable than the densest stone, which is not suspected to be metallic. The metals are the best conductors of electricity, and it has been supposed that the electrical fluid is conveyed through our system more readily by the small proportion of iron which the blood contains. This is however improbable, as the electrical shock follows more closely the course of the nerves, than of the arteries.

Metallic substances are also called perfect, or imperfect. The first are not permanently altered by the greatest heat of our furnaces; while the second, when exposed to a strong heat, with the access of free air, are changed by a process similar to burning, and in some instances with an actual flame, into an earthy substance called *calx*, which is heavier than the metal from which it was produced, though its specific gravity is less. This arises from the union of vital air, which converts some metals into acids. If the calx of a metal be exposed to a strong heat in a closed vessel, with some inflammable matter, styled a flux, it recovers its metallic state. This is called reduction, or reviving of the metal.

All metals are imperfect, except gold, silver, and platina. The imperfect metals are, mercury, lead, copper, iron, tin; and the semimetals, bismuth, nickel, arsenic, cobalt, zinc, antimony, manganese, molybdæna, tellurium, titanium, chronium, columbium, osmium, iridium, and uranite, with some others whose nature is not yet accurately ascertained. As the appellations arsenic, antimony, manganese, wolfram, and molybdæna, are given to the ores, the term of regulus is often employed to distinguish the metal, though modern chemists often use the terms indiscriminately.

The heaviest metal is gold, then follow platina, mercury, lead, silver, copper, iron, and tin. The most malleable also is gold, followed by silver, copper, tin, iron, lead, platina, zinc, bismuth, antimony. The force of cohesion is greatest in gold, next in iron, silver, brass, and copper, successively: tin is far below copper, and lead still less cohesive. The order of fusibility is the following, tin, bismuth, lead, zinc, antimony, silver, copper, cobalt, nickel, gold, iron, manganese, and platina. Different proportions of tin and lead are still more fusible, and if bismuth be added, this property is increased. Five parts of tin, three of bismuth, and two of lead, become soft in boiling water. This last property renders such metallic mixtures highly useful as injections for anatomical preparations.

All the metals dissolve in acids. See Affinity; and in these solutions the metal is in a state of calx. —Neumann, Chaptal, Fourcroy, and Thompson's Chemistry.

METALLU'RGIA, (from μεταλλον, *a metal*, and εργον, *work*). Metallurgy; the chemical doctrines of metals, particularly respecting their separation, depuration, and preparation.

METAPE'DIUM, (from μετα, and πες, *the foot*). See Metatarsus.

METAPHRE'NON, (from μετα, and φρενες, *the diaphragm*). See Dorsum.

META'STASIS, (from μετατιθημι, *to transfer*); *diadexis*, *diadoche*, a translation of a disease from one part to another. The term is limited to a change of determination, for when matter or water pass through the cellular membrane, it is not called a metastasis.

METASYNCRISIS, (from μετα, and συγκρινω, *to mix together*). The word generally implies a change in any given part. Asclepiades. See Medicina (*History*).

METATA'RSIUS, (from μετα, and ταρσος, *the tarsus of the foot*). A fleshy mass lying under the sole of the foot, fixed by one end to the fore part of the great tuberosity of the os calcis, and terminating in a short tendon, inserted in the tuberosity and posterior part of the lower side of the fifth bone of the metatarsus. It moves the last bone of the metatarsus, and draws the fourth bone along with it, contracting the sole of the foot.

METATA'RSUS, (from μετα, and ταρσος, *the tarsus*), *planta*, *planum*, *vestigium*, *metapedium*, is composed of five bones, similar to those of the metacarpus, but, in general, thicker and stronger; their round ends not so broad, and less in proportion to their bases. Their bodies are also sharper above, and flatter on the sides, with the inferior ridge inclined more to the outside, and larger tubercles at the lower part of the round head.

METELLA NUX. See Nux vomica.

METEORI'SMUS, (from μετεωρος, *a vapour*). See Tympanites.

METEO'ROS, (from μετα, and αιρω, *to elevate*). Elevated, suspended, erect, sublime, tumid; pains affecting the peritonæum, or the superficial parts of the body, opposed to more deep-seated ones. Galen.

METHEMERI'NOS, (from μετα, and ἡμερα, *a day*). See Quotidiana febris.

METO'PIUM, an oil, or an ointment described by Dioscorides, named from the plant which produces galbanum: sometimes it means the oil of bitter almonds. See Amygdalæ.

METO'PON or METO'PUM, (from μετα, and ωψ, *oculus*). See Frontis os.

METO'SIS. An amaurosis, from an excess of short-sightedness.

ME'TRA, (from μητηρ, *a mother*). See Uterus.

METRE'NCHYTA, (from μητρα, *the uterus*, and εγχυω, *to pour into*). Injections for the uterus.

METRE'NCHYTES, (from the same). A womb syringe.

METRI'TIS, (from μητρα, *the womb*). Inflammatio uteri, q. v.

METROCE'LIDES, (from μητηρ, *a mother*, and χηλις, *a mole*). See Nævus.

METROPROPTO'SIS, (from μητρα, *the womb*, and προπιπτω, *to fall down*). See Procidentia uteri.

METRORRHA'GIA, (from μητρα, *the womb*, and ῥηγνυμι, *to break out*). See Menorrhagia.

ME'U, ME'UM, (from μειον, *less*), on account of its diminutive size. Spignel, baud, or vauld-

MONEY. *Athamanta meum*, Lin. Sp. Pl. 353. *Fœniculum Alpinum*, is a perennial plant, whose leaves are much smaller, and seeds broader, than those of fennel. The root resembles that of fennel, but is of a more agreeable though fetid smell, and a more pungent taste.

ME'UM ALPHI'NUM GERMA'NICUM. GERMAN or MOUNTAIN SPIGNEL, *mutellina*, *phellandrium mutellina*, Lin. Sp. Pl. 366. It possesses only the virtues of the common sort.

ME'UM LATIFO'LIUM ADULTERI'NUM, *seseli perenne folio glauco breviori*, *fœniculum sylvestre*, *ferula folio breviori*, *saxifraga montana minor*, BASTARD SPIGNEL, *seseli montanum* Lin. Sp. Pl. 372, grows on dry hills, and flowers in June. The root is drying and pungent.

MEXICA'NUM BALS'AMUM, (from *Mexico*, of which it is a production). See PERUVIANUM BALSAMUM.

MEXICANA'VA. See BOTRYS MEXICANA.

MEZE'REUM, an indigenous appellation. See LAUREOLA FŒMINA.

MIA'SMA, (from μιαίνω, *to pollute*). MIASMATA have lately claimed the attention of Pathologists, as they are the causes of some of the most fatal fevers to which mankind are subject. In the more strict pathological investigations of modern authors they are distinguished from contagion, which is confined to the effluvia from the human body, when subject to disease; yet this contagion, when it does not proceed immediately from the body, but has been for some time confined in clothes, is sometimes styled *miasma*. Another kind of miasma as already noticed, (see CONTAGION,) is putrid vegetable matter, and indeed every thing of this kind which appears in the form of air. Miasma, then, strictly speaking, is an aërial fluid, combined with atmospheric air, and not dangerous, except the air be loaded with it; for diffusion, as we have seen, renders it harmless. It is not always discoverable by the smell, and scarcely ever by the nicest eudiometrical tests: it is not therefore hydrogen or azote, though there is great reason to suppose that it is a modification of these; for, from marshes hydrogen generally arises, and, from the human body, the chief injurious exhalation is azote. Hydrogen and azote also destroy irritability, or induce sudden debility, effects generally found from the miasmata which produce fever. As we know not the nature of miasmata therefore, we cannot discover their corrector. Diffusion however renders them harmless, and it is sufficient for us that free air will prevent their deleterious effects.

What the variety of miasmata may be we cannot say. Each infectious disease has its own, diffused round the person which it has attacked, and liable to convey the disease at different distances, according to the nature of the complaint, or to the predisposition of the object exposed to it. This part of the inquiry rather belongs to contagion, and to the particular disease. A patient in the small-pox seems to diffuse an infectious atmosphere to the distance of from ten to fourteen feet: measles and scarlatina are less active in this respect, and even the plague seems not to be infectious, except from fomites, but from actual contact.

The miasmata of marshes, those only whose effects we can more distinctly perceive, produce intermittents, and remittents of the worst kind. They produce also dysentery and the epidemic catarrh, of which the infection is usually conveyed by the air. The bilious fever of America we have supposed to be the natural autumnal remittent, and therefore may be referrible to the same source; nor can we avoid concluding that every endemic disease must have its origin in the peculiar exhalations of the country.

The putrid vegetable matter which has been accused as the cause of many fevers may be truly such, for we know that many parts of vegetables produce azote. Yet their effects in this respect have not been traced with accuracy. Continued fevers are chiefly referrible to contagion: but the causes of intermittents in some constitutions seem to produce fevers of the more continued form, and the miasmata of marshes, when they have excited their peculiar fever, may certainly, through the medium of the human body, produce continued fevers. Human effluvia confined, independent of a morbid state, becomes undoubtedly the cause of fevers the most continued in their form, and are then truly miasmata.

MI'CA, (from μικρος, *small*). A morsel, a crumb, a grain; also a foliated semi-transparent stone, formerly, and at present in the Russian navy, used as glass. It is of the magnesian genus, but not used in medicine. See Haüy, iii. 2?8. Thomson's Chemistry, iii. 4?2.

MI'CA THU'RIS. See OLIBANUM.

MI'CA PA'NIS; the soft part of bread; employed in preparing mild cataplasms, by soaking slices of new bread in water until they become perfectly soft, and then pressing out the superfluous water, beating the bread up with a spoon, and stirring into it a small quantity of linseed meal. It is used also in its dry state, as a convenient mass for pills.

MI'CRO-LEU'CO-NYMPHÆ'A, (from μικρος, *small*, λευκὸς, *white*, and νυμφαια, *the water-lily*); *nymphæa*, *morsus ranæ*, FROG-BIT, *hydrocharis morsus ranæ* Lin. Sp. Pl. 1466, grows in muddy waters, and flowers in July. It is said to resemble in virtues the leuconymphæa.

MI'CRO-NYMPHÆ'A, (μικρος, and νυμφαια). A variety β of, and in every respect resembling, the above. It is less than the nymphæa; grows in ditches, and is said to possess the same virtues.

MI'CROS. See DIGITUS.

MID'WIFERY. See OBSTETRICATIO.

MIGRA'NA. A corruption of HEMICRANIA. See CEPHALALGIA.

MILIA'RES GLA'NDULÆ, (from their resemblance to millet-seeds). See SEBACEÆ GLANDULÆ.

MILIA'RIA, MILIA'RIS FE'BRIS, (from the pustules resembling millet-seed). The MILIARY FEVER, by the Germans *Friesel*, placed by Dr. Cullen in the class *Pyrexiæ*; and order *Exanthemata*; defined "a synochus attended with restlessness, frequent sighing, a fetid sweat, and prickling of the skin; red, small, distinct spots, on an uncertain day of the disease, break out copiously over the whole skin, except the face, whose tops discover, after a day or two, very small white pustules, continuing but a short time." This fever is now generally supposed to be symptomatic only, because it never appears contagious or epidemic. It sometimes attends febrile affections, as well those of an inflammatory as of a putrid nature, but it seldom occurs in any, unless a hot regimen and sweat pre-

cedes. The French and German authors, however, still consider it as an idiopathic disease, and we have twice seen it when the regimen could not be accused as the cause, though it must be allowed to have been often the creature of art, since, after the disuse of the hot regimen, its appearance has been rare. When the pustules are white it is called *purpura alba*, when red, *purpura rubra*. It is almost exclusively confined to child-bed women, though it sometimes appears during the sweating regimen in rheumatism.

This disorder is denominated simple when none but *miliary* pustules accompany the red ones, which, when appearing alone, are called a *rash*. If we speak of it as an idiopathic disease, we must employ the language of those who have described it as such. They say that it is peculiar to some constitutions, who experience the disease repeatedly in their lives, and peculiarly affects the tender, the weak, and the irritable; preceded by sighing, great lowness, oppression on the præcordia, and ushered in by shivering, followed by heat and a pricking sensation of the skin; nor does the anxiety and lowness cease till the eruption is completed. Unlike other exanthemata, the eruption does not conclude the disease, for successive crops often appear, preceded and attended with the same symptoms. According to circumstances, the fever sometimes rises to phrenitis, and sometimes sinks into a typhus. The pustules, first apparently filled with serum, afterwards with a whitish fluid, at last dry, and scale off in branny crusts.

It is not, we have observed, contagious or epidemic; the eruptions have no regular periods of appearance or duration; and though the origin and source of the disease are said to be at no distant period and country, yet traces of it are discoverable even in Hippocrates. All these circumstances strongly militate against its being an idiopathic disease, and the only connection which has been discovered, if it be really a discovery, between the different states of constitution subject to miliary fever is, that it more often attends those subject to considerable hæmorrhages. Such discharges certainly occasion great irritability; and the disease is not connected with mere debility, since it is not peculiarly attendant on typhus. On the other hand, the appearance of the urine is peculiarly pale, and the smell of the perspiration is acid; but the former is an almost constant attendant on fevers in their commencement, and the latter is peculiar to the perspiration of child-bed women.

The accidental symptoms of miliaria are remission and exacerbation of the fever, but at no regular periods. The sleep is disturbed, often interrupted; tremor, subsultus, and even convulsions, come on. Occasionally, the pulse sinks, the eruptions assume a purple hue, clammy sweats and death follow. The directions for the cure of this fever have been strangely and without reason embarrassed. If it is symptomatic of a too hot regimen, we shall find little other regulation than with caution to lessen it. If idiopathic, similar plans should be followed, and according to the principles laid down in the articles DIAPHORETICA and MORBI CUTANEI, we should conduct the perspiration steadily and slowly. Cool instead of cold drinks should be employed, the cooling neutrals freely given, and the bowels kept free by the mildest laxatives. The nervous symptoms are best relieved by camphor, which the stomach usually bears with ease, and should the strength sink, a little wine may be cautiously allowed, or ether added to the camphorated draughts. In general, however, cool free air is the greatest cordial. Even Fischer, after the experience of sixty years, advises us not to be too anxious to force on the discharge from the skin; and we have seen that cool air is the most effectual diapnoic. See DIAPHORETICA.

When the pustules assume a purple hue, which in this country is an occurrence peculiarly rare, the bark and port-wine, in quantities proportioned to the violence of the symptoms, are necessary, and when the debility is considerable, bark, independent of putrescency, has been given. This may be requisite, but we have never found it so, and there is always danger that bark may occasion a stricture on the skin and check the salutary diapnoe. When inflammatory, phrenitic, or pneumonic symptoms come on, they must be treated according to the rules laid down under the proper heads, urging, however, the general evacuations with caution, and trusting rather to the topical ones. Blisters are never useful, except in such cases of topical congestions.

See Hoffman and Sir David Hamilton's Treatise on the *Miliary* Fever. Sydenham Miliaris nova Febris, Schedula monitoria; Fischer et Febre Miliari; Allioni de Miliaria. De Haen Ratio Medendi; Colin de Miliaria. Cullen's First Lines, edit. 4, vol. ii.

MILIA'RIS NAU'TICA, and PURPURA'TA, species of Typhus: the former is called by Huxham *febris nautica pestilentialis*.

MILIA'RIUM, (μιλιαριον). See ALEMBICUS.

MILIO'LUM. A small tumour in the eye-lids, of the size of a millet-seed.

MILITA'RIS AIZOI'DES. See ALOIDES.

MILITA'RIS HE'RBA, (from *miles, a soldier*), from its efficacy in curing fresh wounds. See MILLEFOLIUM.

MI'LIUM, (from *mille, a thousand*, because of its numerous seeds). MILLET, *conchros, panicum Italicum* and *miliaceum*, Lin. Sp. Pl. 83 and 8 , hath large, broad, grass like, somewhat hairy leaves, encompassing the stalk of three or four feet in height, bearing on the top a large pendent panicle, composed of many slender stalks, with many small glumes, including small, white, hard, shining grains. It grows plentifully in Poland; is sown in April, reaped in August or September, and is used as food. See ALIMENT.

MI'LIUM I'NDICUM, *sorgo, sorghum, melica, Holcus, Holcus sorghum* Lin. Sp. Pl. 1484. INDIAN MILLET is sown in Spain, Italy, and other warm countries. In Turkey they feed their hogs and poultry with it; but in the human body it induces constipation.

MI'LIUM ARUNDINA'CEUM, *Coix lachryma Jobi*, Lin. Sp. Pl. 1378; the *lithospermum*.

MILLEFO'LIUM, (from *mille, a thousand*, and *folium, a leaf*). *Lentibularia; supercilium* and *lumbus Veneris, myriophyllon, chiliophyllon*, COMMON YARROW, MILL-FOIL, *Achillea millefolium* Lin. Sp. Pl. 1267, is a plant with rough stiff leaves, divided into small segments, set in pairs, along a middle rib, like feathers; the little flowers stand thick together in the form of an umbel on the top of the stiff stalk, and consist each of several whitish or purpleish petala, set round a loose disk of the same colour, followed by small crooked seeds.

It is perennial, grows plentifully on sandy commons, and flowers almost all the summer.

The leaves and flowers are considered to be mild corroborants, and antispasmodics; their sensible qualities promise some activity, for they have a weak but agreeable aromatic smell, a slightly bitter, rough, and pungent taste: the leaves are most bitter, the flowers have most smell, and the young roots a glowing warm taste like that of contrayerva, but the smell is greatly diminished by drying. By the Greek physicians this plant was esteemed a vulnerary and styptic, generally employed internally as an astringent in all hæmorrhages. Stahl and Hoffman used it in bleeding from the lungs and nose, too copious flow of the menses, and bleeding piles. Stahl considered it not only as an astringent, but a powerful tonic, antispasmodic, and sedative; it is now neglected, and the leaves and flowers only are appropriated to medical purposes, if it should be employed.

Both water and spirit extract the virtue of the leaves and flowers; but water the astringency, and spirit the aroma, in the greatest degree. If the flowers are distilled with water they yield an essential oil; and if the plant is gathered from a rich soil, the oil will appear of a blue colour; if otherwise it will be green. A strong decoction of the root and leaves is said to have cured a dysentery. See Raii Historia; Lewis's Materia Medica.

MILLEFO'LIUM AQUA'TICUM. See MYRIOPHYLLON.

MILLEGRA'NA MAJOR, (from *mille* and *granum*, *grain*). See HERNIARIA.

MILLEMO'RBIA, (from *mille*, and *morbus*, *a disease*). See SCROPHULARIA MAJOR.

MILLE'PEDES, (from *mille*, and *pedes*, *feet*). See ASELLI.

MILPHO'SIS, (μιλφωσις). A Greek primitive. A BALDNESS of the EYE-BROWS: sometimes an increase of the flesh in the corner of the eyes.

MILZADE'LLA, (from *milza*, Span. *the spleen*, from its virtues in diseases of the spleen). See LAMIUM MACULATUM.

MIMO'SA NILO'TICA, seu ÆGYPTIACA. See ACACIA.

MIMO'SA JAPO'NICA CA'TECHU. See TERRA JAPONICA.

MINÆ'A. See ANIME.

MINERA'LIA, (from *mina*, *a mine of metals*). MINERALS. The mineral kingdom furnishes numerous and very valuable remedies, first introduced by the chemical physicians, and, for a long time disregarded by the Boerhaavian school. They were supposed by the latter to be unalterable in the stomach by the digestive powers, and consequently incapable of producing any change in the circulating fluids, the source, in their opinion, of all diseases. Dr. Cullen first clearly pointed out, that many medicines, particularly opium and arsenic, produced considerable changes, though thrown up with an apparently undiminished bulk, and that therefore they acted on the stomach as a nervous organ, sympathetically connected with the rest of the system. Since that time, the opinions of the chemical sect have been revived with more distinct and more rational views, and copper, arsenic, barytes, with some other medicines of considerable power, introduced into the materia medica. In the views of the natural historian the study of mineralogy has been attended with greater difficulty. In the system of Linnæus, who was very imperfectly acquainted with minerals, the form alone was considered as the basis of the classification; and forms, at that time little known, or described with no very discriminated minuteness, led rather to confusion, than distinction. Cronstedt first conducted his arrangement with scientific accuracy, but his system was chemical, and the general rules, as well as the conduct of the historians of the other kingdoms of nature, rested their discriminations on external forms. Daubenton, the friend and coadjutor of Buffon, suggested an union of these two plans, but the revolution was completed by Werner and Haüy within a very few years.

It is unnecessary to mention a great variety of systematic arrangements. That of Cronstedt was comprised in four great divisions; earths, salts, inflammables, and metals, to which he has added, in an appendix, compound and conglomerated stones, petrifactions, and volcanic productions. He has been followed, with no change in the great outlines, by Mr. Kirwan. While the chemical mineralogists were thus meliorating their system at their furnaces or their lamps, a considerable revolution was preparing in Germany and France. In the school of Freyberg, where the subject, from the neighbouring mines, forced itself on the attention of naturalists, Werner laboured at rendering the descriptive language more copious, more expressive, and more accurate. To every appearance of shade, colour, hardness, taste, smell, &c. he gave appropriate appellations, often with a disgusting harshness which obscured what he attempted to explain, but with the most minute and accurate discrimination. Haüy, in France, was at the same time observing with minuteness the form of the crystals, and investigating by the most patient research, aided by the most accurate geometrical constructions, the original molecule on which the future more compound crystal is moulded. In this inquiry he had an assistant in Romé de l'Isle, but his last most valuable work is wholly his own. That of Romé de l'Isle was published near twenty years since. Haüy, however, though he rests greatly on the form of the crystals, neither neglects the chemical analysis, nor the strict language of Werner; and the general merit of his work has led us to prefer it as the most convenient book of reference, to ascertain the species intended, especially as his copious list of synonyms lead us equally to the best authors of the chemical and the Wernerian schools.

Haüy's first class contains the COMPOUNDED ACIDS, viz. those substances in which the acid is united to an earth, an alkali, and occasionally to both. The second comprises the PURE EARTHS, except where they may be united with an alkali. The third contains the COMBUSTIBLES, and the fourth the METALS. The appendix is filled with those bodies whose nature is unknown, compound, and volcanic substances.

Werner, though he has so carefully improved the language of mineralogy, yet rests on chemical analysis as his chief support. The principle divisions of former authors it is impossible to overlook or neglect, for they are strongly pointed out by nature; and EARTHS, SALTS, COMBUSTIBLES, and METALS, are also his classes. He has added the classification of rocks, which he divides into primitive, transitive, alluvial, and volcanic. His object in this arrangement will be sufficiently obvious from the

titles. Of Werner's system we have no very satisfactory account in our own language. His work on the "External character of Fossils" has been translated, but the language is disgusting and rugged. M. Brochant's two volumes of mineralogy, in French, give a much more favourable view of his doctrines, and this work is more valuable, as it goes hand in hand with that of Haüy, a circumstance which enhances the value of each. Mr. Jamieson's description of the minerals of Scotland, and a few others from the school of Freyberg, are calculated rather to disgust than allure the student.

Werner has improved the science in one respect, viz. in preserving the natural families, which, like the natural orders in botany, connect kindred substances. Haüy has been equally successful in connecting these kindred tribes from the form of their crystals; and so just is his method, that the arrangement which these first suggested afterwards received their best support from chemical analysis. Another improvement of Werner is the arrangement of subjects, not from the predominance of their component parts, but from the character. Many reputed argillaceous earths have often the largest proportion of silex, but they are arranged with propriety as clays. This, though sometimes attended to, was not before the æra of the Freyberg professor strictly kept in view, and it has greatly improved his system as a natural one;—the first and great object in every department of natural history.

The chief difficulty, in mineralogy is the means of ascertaining species; and, when we proceed to other subjects which have been supposed less susceptible of the advantages of arrangement, we shall find the difficulty less considerable. Every author depends on the chemical nature of the object for the establishment of species; and Werner expressly observes, that bodies, which differ essentially in their chemical nature, differ also as species. The error lies in not affixing an accurate idea to the word "*essentially*," for Werner often depends on differences purely accidental; and the establishment of sub-species in almost every modern system shows the uncertainty of the foundation of specific differences. Haüy has formed his species on the chemical nature of substances, but he has added essential external characters, very striking and discriminated. Brochant has done the same, but not always with equal success.

It is a singular remark of prince Gallitzin in his "Alphabetical Collection of Mineralogical Names," that the possible combinations of the nine principal earths, excluding the saline and metallic *mixtures*, exceed forty thousand, of which we have yet discovered scarcely more than fifty. How inexhaustible are Nature's stores, and what resources may not medicine and the arts have still in reserve? The siliceous earths form nearly one half of the known combinations, the calcareous only furnish five, and the alluminous seven.

We have perhaps been led too far from our medical department; but this subject has not sufficiently shared the attention of the English naturalists or physicians. We shall now return to our proper path, and endeavour to point out the comparative advantages of each class, in a medical view.

EARTHS. The first of these in the modern systems is the *barytes*, and we employ only the muriated salt, though a solution of the pure or aerated barytes has been recommended vaguely, as an anthelmintic, and, externally, as a destroyer of the life of a part. The purer or carbonated *lime-stones* are absorbents, and, by this quality, they appear to act as astringents. From a loose analogy, they have been supposed useful in other excessive evacuations, where their power will not extend. The more incapable they are of absorbing acid, the less effectual they appear, unless when joined with some acids they act according to common opinion as astringents in the intestinal canal. Their lithontriptic power has been sufficiently explained.

MAGNESIA is highly useful as an absorbent, and, when joined with acids, as a laxative: the *clays* we have found demulcent, and, from this effect, apparently astringent. The *flints*, including the gems, though formerly celebrated, are now deservedly forgotten; nor, excepting the portion suspected by Dr. Gibbes in the Bath waters, is there any known form in which siliceous earth is swallowed, or in which it can be useful.

The STRONTIA has been recommended as a diuretic, and an astringent, but we cannot ascertain the authority. It is probably an absorbent.

The SALTS are more frequently advantageous, and, in their different forms, are useful laxatives, refrigerants, absorbents, and tonics. The two former objects are obtained by the neutrals; the two latter by the alkalis and acids. The volatile alkali is conspicuous as a stimulant, the vegetable acid as a refrigerant. Alum seems the chief objection to the general remark, though it appears to act occasionally as a laxative.

The INFLAMMABLES offer very few medicines, and with the exception of sulphur, and perhaps the petroleum, none of importance. The ambergris, and the asphaltum, are now deservedly neglected. The succinum used only for its salt and oil.

The METALS furnish the most numerous and the most valuable medicines, which we need not enumerate, as with the exception of lead only they are chiefly tonics; and, when we particularly examine its properties, we shall find them in some views according with those of the other metallic bodies. The metallic salts are often externally corrosive.

If then we find, in the inexhaustible variety of possible combinations, that we have yet discovered few, so in those which we *have* discovered, a very small proportion are useful as medicines; and, when from the whole of the mineral kingdom, with all the various preparations, we have selected twenty important ones, we need scarcely regret the loss of the rest. It must be recollected that the fifty known combinations from the forty thousand, are combinations of earths only; and that the combinations of the metals only with the acids would furnish as many more, of which a very small proportion has been actually discovered.

Kirwan's Mineralogy; Haüy Traité de Mineralogie; Mineralogie de Brochant; Wallerii Systema Mineralogicum.

MI'NIUM, (from *samminia*, a Chaldee word). See PLUMBUM.

MI'NIUM GRÆCO'RUM and PU'RUM. See CINNABARIS.

MINU'TA, (from *minuo, to diminish*). An epithet for a violent fever, with such great debility as to be fatal in four days.

MIRA'BILIS, (from *miror, to wonder*), a term

applied to various compositions, expressive of their admirable virtues.

MIRA'BILIS A'QUA. See PIPER JAMAICENSE.

MIRA'BILIS PERUVIA'NA. See JALAPA.

MI'RI. See CEBIPIRA BRASILIENSIBUS.

MISERE'RE ME'I, a name applied to the iliac passion, from the severity of the pain. See ILIACA PASSIO.

MISTU'RA, (from *misceo, to mix*). A MIXTURE, in the strictness of pharmaceutical language, differs from juleps in not being transparent, in consequence of some powder or extract dissolved or mixed with it. See JULAPIUM.

MI'SY. We should not have retained this obsolete word, had we not seen it styled a sulphat of *iron*. It is synonymous with the calcantha or calcanthum of the ancients, q. v. and in reality a sulphat of *copper*. Haüy, iii. 586.

MITE'LLA, (quasi *mitrula*, dim. of *mitra, a band*). A scarf for suspending the arm. In BOTANY it is the name of some plants from America and the north of Asia, comprehended by Linnæus under the genera *mitella* and *tiarella*.

MITHRIDA'TUM, (from *Mithridates*). See CONFECTIO DAMOCRATIS, and MEDICINA (*history*).

MITRA'LIS VA'LVULA, (from *mitra, a mitre*, from their resemblance). See COR.

MI'VA CYDONI'ORUM, (from the Hebrew term *migma*). MARMELADE of QUINCES. See CYDONIA.

MI'XTIO, (from *misceo, to mix*). MIXTION. Stahl used this expression to signify the union of the first principles in the most simple compounds. Those principles of bodies are now emphatically called *a mixt*, which are so intimately united to each other as to be scarcely discovered, though without changing the nature of either, and without any union by chemical affinity. A mixt is thus distinguished from aggregates, where the texture is loose, and the parts more easily separated. In chemical mixtures the nature of the ingredients is altered, and a new body formed.

MO'CHLIA, (from *μοχλος, a lever*). A reduction of the bones from an unnatural to a natural situation.

MO'CHLICA, (from *μοχλευω, to move*). Violent purges.

MODE'RNI, (quasi *hodierni, of to-day*). The æra of modern learning, according to the best chronologists, is that of the capture of Constantinople by the Turks, when the Greeks fled to Italy, carrying with them their literary treasures. This was on the 27th of May 1453. This æra will not however be accurate in the history of medicine, for in tracing the progress of our science we have seen it gradually progressive from east to west, and sometimes even in a contrary direction; and were we to fix the limits with respect to medicine, we should place them at the decline of the Grecian physic, in the court of Byzantium, and the last of the ancients would be Actuarius. The comparative knowledge and skill of the ancients and moderns have occasioned great controversy. It is pleasantly, though not with great impartiality, treated by Swift in his Battle of the Books. Dutens' work "on the Discourses of the Ancients attributed to the Moderns," contains many curious and important facts on this subject; but this author, like some others, catches too anxiously at casual hints, and expressions, seeming to mistake a lucky but a loose conjecture for a discovery. Pancirollus in his work De Rebus perditis et inventis, and Bæckmann in his History of Inventions, offer many curious facts respecting the science of the ancients, and often respecting medical opinions and the use of remedies. Two volumes have been added by the latter author to those already translated, which would be a valuable acquisition to the English reader.

MODI'OLUS, (from *modus, a measure*); since it is contrived to enter only to a certain depth. The crown or saw of the trepan; or a circular trepan resembling in shape the nave of a wheel, which is its true signification. See TREPHINE.

MODIO'LUS, (femin. of *modus*) the axis of the cochlea of the ear.

MODI'RA. See COLUBRINUM.

MOFFA'T WATERS. A mineral spring near Moffat in Scotland, resembling the Harrowgate waters; equally sulphureous and saline, but not equally bitter. They have been chiefly used in scrophulous and cutaneous disorders, and more lately applied to irritable ill-conditioned ulcers. Their contents are chiefly sea-salt and hepatic air; but the former is in so small a dose as scarcely to act as a laxative. In indigestion from weakness, in calculous cases, and in biliary obstructions, they have been employed, but are not sufficiently powerful in their action on the bowels for the latter complaint. They chiefly act as diuretics.

MOGILA'LIA, (from *μογις, difficulty*, and *λαλεω, to speak*). A difficulty of speech; *psellismus acheilos* of Dr. Cullen. See ANCYLOGLOSSUM.

MO'KEL. See BDELLIUM.

MO'LA, (a Hebrew term). A name for the *patella*, KNEE-PAN, for the *molares dentes*, or grinders; for the *maxillæ;* and a FALSE CONCEPTION, or a shapeless mass in the uterus, without a placenta, called *epicyema, myle*, and by Avicenna, *naducem*. Should part of the placenta remain in the uterus after the birth of the child, this may resemble a mole; and it is then called *pseudo-mola*, a FALSE MOLE. If the symptoms of a miscarriage happen in the first, or beginning of the second month, the fœtus being then very tender, and lying in the os internum two or three days, will dissolve, it is said, into a kind of jelly, which coming away, is called a *false conception;* and if, during the time of child-bearing, a flooding occurs, a large coagulum of blood, with a fibrous appearance, is discharged some time after its cessation: this also is called a *mole*. It differs from the placenta in being only fibrous on the outside.

We cannot indeed deny that the tender fœtus may melt into a jelly, or that coagula may become fibrous, but the appearances of molæ seem to be owing to a more recondite origin. It is ridiculous to talk at this time of a plastic power, or a tendency to organization; yet either imperfect rudiments of a fœtus pre-exist in ovaria, or by some unknown process there is an approach to organization. We have numerous records of the remains of hair and teeth in ovaria of women of character, and in circumstances where there can be no deception. We have similar appearances in the brute creation. We find too that when married women have been in a bad state of health, which has prevented conception, an organized mass is often discharged on their recovery before a living fœtus is produced. We have much reason to suspect then that in every instance

moles are imperfectly organized productions, and that they may be both formed and discharged in some instances without any blemish on the female character, whatever theory may be adopted respecting their origin. In many instances what is styled a *mole* is merely a coagulum of blood.

The signs of a mole are, in general, the same as pregnancy. It is said, indeed, that in the former case the belly increases more rapidly than in pregnancy, and after the third month it generally produces floodings. Women of experience, however, always feel some variety in their symptoms and sensations, and generally suppose they are not with child.

A mole is also distinguished from pregnancy by its exciting no motions in the womb like those of a living child, and by changing its situation in the belly according to the posture of the mother. The general health is commonly worse, after the fourth month while in pregnancy it improves.

Should the existence of a mole be ascertained, assistance is necessary, the finger may be gradually introduced into the uterus, and its action excited by a slight irritation. As there is no placenta, so if after the discharge of the mole the flooding ceases, the whole is at an end, except another may remain, a circumstance peculiarly rare, which however will soon follow. See La Motte, Smellie, and Hamilton.

MOLA'GO CO'DI. See PIPER NIGRUM.

MOLA'RES DE'NTES, (from *mola, a mill,* and *dens, a tooth*). GRINDERS, *genuini; gomphioi; molæ; momisci;* the large broad teeth beyond the canini.

The two first are smaller than the rest, terminating in two points, and therefore styled by J. Hunter *bicuspides*. They have short fangs, which are double at their extremities. The other three on each side have four points at the basis of their bodies, two anteriorly, and two posteriorly; these have generally two fangs in the lower jaw, and three in the upper. Mr. John Hunter observes, that the first and second of the grinders are nearly alike: they stand next behind the canini or eye teeth; and the first is frequently the smallest, with rather the longest fang, sometimes with its point bent. In the upper-jaw, the bicuspides are rather thicker than in the lower; and both, especially the second in both jaws, are oftener wanting than any others, except the dentes sapientiæ. The bicuspides and the molares alter very little in shape on their grinding surfaces, by use; their points only wear and become obtuse. The two first grinders differ from the bicuspides in being much longer, and in having more points and more fangs. The body forms almost a square, with rounded angles. The grinding surface has commonly five protuberances, two of which are on the inner, and three on the outer edge or part of the tooth, with generally some smaller points at the roots of these longer protuberances. The body towards its neck divides into two flat fangs, one forward, the other backward, which are often bifurcated. The first grinder is somewhat larger and stronger than the second; and both have shorter fangs than the bicuspides. In the upper jaw they have three fangs; and the first and second in the upper jaw are placed directly under the maxillary sinus. The third grinder is the *dens sapientiæ*. See DENS. J. Hunter's Natural History of the Human Teeth.

MOLA'RES GLA'NDULÆ, are two glands, nearly of the same kind with the sublingual glands, each of them situated between the masseter and buccinator muscle, resembling, in some subjects, two small lumps of fat. They send out small ducts, which perforating the buccinator, open into the cavity of the mouth, almost opposite to the last dentes molares; from which circumstance, Heister gave them their name.

MOLDA'VICA. MELISSA. TURKEY BAUM. See MELISSA TURCICA.

MOLE. See TALPA.

MOLL. See LENTISCUS.

MOLLI'TIES O'SSIUM (from *mollis, soft*). A SOFTNESS of the BONES, *malacosteon.* The principal cause is a defect of boney matter, and often occasioned by a general weakness, scorbutic, venereal, or other taint in the blood. Cleanliness, a change of air, frictions, a good diet, cold bathing, exercise, and chalybeate medicines, are the proper remedies, though when the cause is known, it should be previously corrected. See MORBI SOLIDI SIMPLICIS. DISTORTIO SPINÆ. GUMMA.

MOLLIFICA'TIO, (from *mollis, soft,* and *fio, to make*). A barbarous term for a partial palsy of the muscles.

MOLLU'GO, (from its softness). See RUBIA SYLVATICA LÆVIS, and ALYSSUM.

MOLU'CCA MELI'SSA. MOLUCCA BAUM. Its qualities agree with those of melissa.

MOLUS'CUM, the appellation given by Dr. Willan to a cutaneous disease, consisting in small soft wens, which may be extirpated, but not easily resolved.

MOLLU'SCA, (from *mollis, soft*). Natural history has, within these few years, greatly extended its boundaries by new discoveries. Philosophers wanted new worlds as a supply for their ambition, new territories for their conquest, and they have discovered them by improving their instruments, by their more extensive and more acute observation. New planets, new metals, and new animals are daily attracting our attention, and, in the present department of science, they have neglected the gaudy shell, the former object of inquiry, and the subject of classification, to ascertain the nature of the animal which inhabits it. This part of the inquiry has been chiefly cultivated by the French naturalists, and the reader will obtain the most satisfactory information from these and the Linnæan Transactions. We must add, however, with regret, that the volumes which relate to the mollusca by the successor of Denys-Montfort, are inferior to many of the others, and the plan of that naturalist is not completed. In this place, we can only skim over the surface, in order to apply it to medicine. We have already noticed the great outline drawn by La Marck and Cuvier, who divide animals into those which have articulated vertebræ, and those which want them. We say *articulated* vertebræ, because some of the animals before us have a bony support, particularly the cuttle fish. When vertebræ are no longer found, the blood is no longer red. All these animals were divided into insects and worms, or, as they are now called, molluscæ; but later authors have added and detracted a little from the classes of their predecessors. Bruguiere added the echinodermes, viz. the star-fish and the urchins. La Marck reduced the six classes of Bruguiere to four, molluscæ, worms, radiarii (echinodermes) and the polypi, including the infusory animals. Denys-Montfort,

whose work, as the chief systematic one, we must follow, divides the molluscæ into ten classes, the M. *coriaceæ* (cuttle-fish); *tentaculatæ* (snails); *ejaculatores* (many of the bivalves); *annulatæ* (worms); *gelatinosæ* (medusas or blubbers); *loricatæ* (asterias); *hydræ* (multivalves); *polypi* (madrepores); *corneæ* (lithophytes); *infusoriæ* (microscopic animals). In this arrangement, the insects, the crustaceæ, and arachnoides, are excluded; for the molluscæ undergo no metamorphosis, do not change their skins, and have no really articulated limbs.

The coriaceæ once furnished their shells as absorbent medicines. They sunk into dentrifices, and are now disregarded. One species, the sepia octopus, the octopus vulgaris of La Marck is said by Ætius, and many of the other Greek physicians, as well as the poets, to be aphrodisiac. The sepia moschata (octopus moschatus of La Marck) was esteemed for the same qualities, also as an emenagogue, and as highly nutrient. All the polypi are occasionally eaten. They are a hard indigestible food, employed only from necessity, and rendered as palatable as possible by the arts of cookery. The tongue is said to be delicious, and is greedily devoured raw. The animal styled the *argonaut* is of this genus; and the nautili which agree in structure with it, though not like the former, are solitary animals, also eaten by the common people.

With these animals the work of Deuys-Montfort concludes, and his successor is peculiarly short, imperfect and unsatisfactory. The tentaculatæ furnish animals highly nutritive, and employed on this account in hectics. The gluten of the large black snail is said to be useful as a discutient. The only other divisions which offer medicinal substances is the seventh, which contains the sponge, and the ninth, the lithophytes, which furnish the coralline.

Histoire Naturelle de Buffon Ed Sonnini. Molusca. Memoires & l Histoire de la Societe d'Histoire Naturelle, a Paris, Annales du Musæum National. Linnæan Transactions.

MO'LVA, (from *mollis, soft*). See ASELLUS MAJOR.

MO'LY, (from μωλος, *battle*; supposed to have sprung from blood spilt in battle). *Allium latifolium liliflorum* MOLY of THEOPHRASTUS, or HOMER. Various plants have had this appellation, and each is a kind of garlic, though it has been styled, with less reason, a species of rue.

MO'LY ALPI'NUM. See OPHIOSCHORDON.

MOLYBDÆ'NA, (from μολυβδος, *lead*; *elersna, galena*). *Molybdène sulphurè*, Haüy, iv. 28), a metallic ore, often confounded, from its resemblance, with plumbago, but differing essentially from it. It is one of those metals which when calcined are acid. Its texture is lamellated, the marks it leaves of a greenish colour, and its specific gravity nearly 6, while the carbure of iron is compact, leaving black marks on paper, and in gravity exceeding 6. See also CHYMISTRY.

MOLY'BDAS. MOLYBDAT. Salt formed by the union of the molybdic acid and different bases.

MOLY'BDOS, (from μολυβδος: ὁτι μολει εις βαθος, from its gravity). See PLUMBUM.

MOLY'ZA, (a dim. of μωλυ, *moly*). See ALLIUM.

MO'MIN. See MAMEI.

MOMI'SCUS, (from μωμος, *a blemish*). The part of the dentes molares next the gums, usually covered with a tartareous matter. The molares themselves have the same appellation.

MOMO'RDICA, (*mordeo, to bite*; from its sharp taste, *balsamina mas, pomum Hierusolymitanum, pomum mirabile, balla, muccapira, cucumis, momordica balsamina* Lin. Sp. Pl. 1433; the MALE BALSAM-APPLE, is cultivated in gardens, but not used in medicine, though the fruit is cooling.

MOMO'RDICA ELATE'RIUM. See CUCUMIS AGRESTIS.

MONADE'LPHIA, (from μονος, *unicus*, and αδελφος, *frater*). The sixteenth class of the Linnæan system, comprehending those plants which produce hermaphrodite flowers, with one collection of united stamina. It is a natural association.

MONA'NDRIA, (from μονος, *unicus*, and ανηρ, *maritus*). The first of Linnæus's classes, comprehending plants which produce hermaphrodite flowers with a single stamen.

MONA'NGIA, (from μονος, and αγγος, *a vessel*). Plants which have their seeds in a single cell.

MONA'RDA PURPU'REA; *m. fistulosa* Lin. Sp. Pl. 32. The smell is fragrant; the taste aromatic and bitterish. It has been styled a deobstruent and a stomachic; but has been chiefly employed in intermittents.

MONE'RES, (from μονος, *alone*), properly a boat with a single oar; but figuratively applied to a melancholly person fond of solitude.

MONO'CEROS, (from μονος, *unicus*, and κερας, *cornu, horn*). See UNICORNU.

MONO'COLON. See CŒCUM INTESTINUM.

MONO'CULUS, or MONOPHTHA'LMUS, (from μονος, or οφθαλμος, *an eye*). A roller of ten or twelve feet in length, and two or three fingers in breadth, to retain the dressings on the eyes. It is fixed on the occiput, letting about a foot hang down, and from thence carried obliquely round the head, across the wound, to its commencement: having carried it thrice round, the remainder goes circularly about the temples, occiput, and forehead; the end hanging behind is then to be brought over the vertex to the forehead, and the whole secured. A napkin, or a handkerchief, is equally useful. It also signifies, as the name implies, a person with only one eye, or with one eye less than the other. See MONOPIA.

MONŒ'CIA, (from μονος, and οικος, *domus*). The name of the twenty-first class in the Linnæan system, comprehending the androgynous plants, or such as produce male and female flowers on the same individual without hermaphrodites.

MONOGA'MIA, (from μονος, and γαμος, *marriage*). Plants whose flowers are single.

MONOGY'NIA, (from μονος, and γυνη, *mulier*). The name of the first order in the first thirteen classes of the Linnæan system, comprehending such plants as have one pistil or one stigma.

MONO'MACHON. See CŒCUM INTESTINUM.

MONOPE'GIA, (from μονος, and πηγνυμι, *to compress*). A pain in the head affecting only one point.

MONOPE'TALI, (from μονος, and πεταλον, *a petal*). Containing but one petal.

MONOPHY'LLON, (from μονος, and φυλλον, *a leaf*), *smilax unifolia humillima, unifolium, lilium con-*

vallium minus, ophrys monophyllos Lin. Sp. Pl. 1442, ONE BLADE, grows in woods and thickets, and flowers in May and June. The flowers are styled alexipharmac and vulnerary. See Raii Historia.

MONO'PHIA, and MONO'POS, (from *μονος, solus,* and *ωψ, an eye*); *Monoculi* and *arimaspes,* a term of the same signification in the Scythian language, from their custom in shooting, to shut one eye. In consequence of this habit the other was rarely seen, and they were said to have but one; but the same term is applied to those who have one eye less than the other. When this deformity is observed in infancy, such exercises as require the use of only one eye, as looking through microscopes, telescopes, &c. should be avoided.

MONO'RCHIS, from *μονος,* and *ορχις, a testicle.*

MONOSPE'RMUS, from *μονος, single,* and *σπερμα, seed.*

MONS VE'NERIS. The HILL or MOUNT of VENUS, lies before and on the upper part of the symphysis of the ossa pubis, formed by fat in the subjacent cellular membrane, and in adults generally covered with hair.

MO'NSTRUM, and MONSTRO'SITAS, (from *monstro, to show*). MONSTER, or a monstrous, i. e. a preternatural, production.

A monster is very judiciously defined by Dr. Hamilton, in his valuable and comprehensive Outlines, to consist in " any considerable deviation in the structure of the fœtus from the common order of nature, whether such deviation be consistent with life or not:"

Monsters, according to the same author, are, 1st, those which are double, or have supernumerary parts; 2dly, those who have a deficiency of some organ; 3dly, those who have any remarkable deviation either in the situation of the viscera, the distribution of the vessels, nerves, or secretory organs, though not externally visible, or materially affecting the different functions; 4thly, the productions of animals of different species.

Monsters double, or with supernumerary organs, have been often described. The Bohemian sisters, united by the glutæi muscles, with a more intimate connection in the abdominal viscera, are well known to physiologists. The monster, mentioned in the Philosophical Transactions (No. 2), consisted of two bodies equally distinct, and in various other parts of this collection there are cases where the union is more or less complete. This double form gradually sinks to the child growing from the side of another, recorded in the Asiatic Transactions, down to the double head of the Hindoo child, in Mr. Hunter's collection. Supernumerary organs are very frequent, and this peculiarity is at times confined to particular families. It is remarkable that the peculiarity will disappear for one, and sometimes two, generations, reviving again in the third. The internal organs are occasionally double or supernumerary. The most singular case of this kind is where two hearts were discovered.

Deficiencies are also numerous. A head, an eye, an arm, a leg, a hand, foot, or finger are sometimes wanting; but the chief deficiency, which calls for our attention is that of the head. This has occasioned many speculations; but in every instance there is a point at which all the nerves converge, or from which they proceed, and this contains very generally a cortical, or a nucleus of cineritious, matter. We may, however, remark as a fact of future application, that the acephalous children are often plump, and of no diminutive size; yet the instance has escaped us, if any has occurred, where such children are not in other respects monstrous. The vital organs must be always, to a certain degree, perfect: at least neither the heart nor the large vessels can be wanting in a child which has arrived at its full time.

The third instance of monstrosity is rare, or at least rarely ascertained. We have instances on record of the viscera being on the sides opposite to those in which they are usually placed, and the pulmonary vessels are occasionally defective, or useless, from the fœtal passages continuing open. From the last cause chiefly arises the cærulean complexion of some children. Various are the changes which may occasionally take place in the distribution of the vessels, the situation of the glands, or the direction of the nerves within the limits of health; and numerous must necessarily be the instances in which these irregularities have not been observed. The imperfection of natural passages is scarcely sufficient to arrange such persons under the rank of monsters. It is a disease of structure, which merits no such appellation, and we have anxiously excluded them by our definition.

The productions of animals of different species are rare; and these very seldom, if ever, fertile. Providence has thus wisely preserved every species distinct, and the world is not peopled with monsters. Yet, among animals of the larger size, which usually produce only a single offspring, twins are rarely, both, perfect. This, however, is not the case in man, or in the lower orders of animals. We only see it distinctly in the cow.

In the vegetable kingdom, we find monsters produced by excess of nourishment, or by the opposite extreme of confinement and deficient nutriment. To the former we attribute the double unfertile flowers; to the latter the variegated leaves of plants. We are not without similar instances in the human species. The full plethoric female is seldom a mother of many children, and the Laplander, the Esquimaux, and the Cretin are deformed in their bodies, and imperfect in their intellectual faculties. They have not, however, been distinguished by the appellation of monsters.

To what are these deviations from the common structure owing? We have endeavoured to render the pre-existence of the germ in the female constitution probable; and the monstrosities observable in succeeding generations are owing probably to the imperfect germ. Where, however, parts are double, or the deviations from the common structure are considerable, we cannot admit this source. M. Lemery long since contended that monsters were rendered such by accidents in the uterus. Winslow supported the idea of Duverney, who supposed the germ to have been monstrous, and first started this opinion. Each opinion has been supported with great obstinacy by their respective authors, in the Memoires de l'Academie des Sciences, An. 1728, 1740, 1742, and 1743.

The double children are certainly such as from contiguity have accreted in their tenderest state. We can have no doubt of this in the instances recorded in the Philosophical Transactions, where they ate and slept at different hours; where their excretions and tempers were distinct and discriminated. If it be the case in these instances, may we not suppose that, by a stricter

approximation, some of the abdominal viscera may be so closely pressed as to destroy the parietes on the weaker side, and the canals to be consequently common? This was the case with the Bohemian sisters. Again, may not a more partial and a stronger pressure obliterate even the lower extremities of the weaker child, and the trunk inosculate with that of the stronger, as in the case recorded by Dr. Bland in the Philosophical Transactions? and may not a similar cause, in twins greatly disproportioned in strength, account for all the varieties of a child growing out of the side, down to the double head of the Hindoo, or even the double heart? It was not from accident that we said disproportioned strength; for the doubled portion is usually small and imperfect.

It is not possible to follow all the varieties. While we have admitted, at one extreme, the monstrous germ, we have endeavoured to support, at the opposite, the effects of pressure. We can go no farther. Where the limits of either cause may be, is uncertain; nor is it necessary to follow doubtful and unsteady lights in a track which leads to no useful purpose. One thing we may add, that in no instance is it probable that deficient or redundant monsters are owing to the fright of the mother, or disgusting objects presented to her.

The absurdities that crowd the pages of Schenkius, Bartholine, Ælian, De Reies, Vanderwiel, Paulini, &c. down to our own rabbit woman, and Roederer's relation of a female that brought forth a fish, must not detain us. It is enough to have stated the several facts, and to have made some approaches towards an explanation.

Philosophical Transactions, No. 2, 99, 226, 228, 234, 251, 308, 320, 453, 456, 487, &c; Medical and Physical Journal, Passim; Memoirs de l'Academie des Sciences, An. 1724, 1738–43; Mauriceau, Smellie, and De la Motte's Midwifery; Journal de Physique, An. 1774, and 1776. See ACEPHALOS and PRÆSENTATIO.

MO'NTA PA'NNA. See PALMA JAPONICA.

MO'RBI ORGA'NICI. Parts affecting the organisation, sometimes synonymous with the locales. See LOCALES.

MORBI'LLI, (a dim. of *morbus*, *disease*). The MEASLES. *Variola cholerica* of Avicenna; *blacciæ* of Rhazes; *bothor*; *boxilla*; *fersæ* of the Arabians. Dr. Cullen places this disease under the title *rubeola*, in the class *pyrexiæ*, and order *exanthemata*, defining it a contagious fever of the inflammatory kind, attended with sneezing, watery eye, and a dry hoarse cough; on the fourth day, or a little later, small spots, crowded together, scarcely prominent, break out, converted after three days into small furfuraceous scales. He distinguishes two species. 1. *Rubeola vulgaris*, with eruptions very small, confluent, and corymbose, hardly rising above the skin. Of this there are two varieties; in one the symptoms are more severe, and the course of the disease not so regular—the anomalous measles of Sydenham: in the other they are accompanied with a sore throat. 2. *Rubeola variolaris*, where the eruptions are distinct and elevated. Dr. Cullen, however, doubts whether this disease be truly measles; for the eruptions differ, and the catarrhal symptoms are absent: in Scotland this disease is called the *nirles*. The measles appeared in Europe nearly with the small-pox: both came from the east, both are infectious, and attack only once; both appear at a definite period after the attack of the fever.

The measles is an acute disorder, of the peripneumonic kind, sometimes only an eruptive catarrhal fever. Dr. Morton calls the scarlet fever the confluent measles; and Dr. Watson observes, that in the small-pox the eruption is critical, but that in the measles it is merely symptomatic, for the cough and peripneumony are not relieved by it. It was formerly a common opinion that the measles are a good preparative for the small-pox; but in general the former leaves an inflammatory tendency, which greatly exasperates the symptoms of the latter. All ages are subject to this disease, but it chiefly attacks children.

The measles usually announce their approach by a small, frequent, and dry cough, which often continues many days, without any other sensible complaint, though more frequently the cough is attended with a general uneasiness, successions of shivering and heat, and a severe headach in grown persons; great depression of the strength, a heaviness of the head in children, giddiness, hoarseness, pain across the forehead, an inflammation, with a considerable heat in the eyes, a swelling in the eyelids, a defluxion of sharp tears, and such increased sensibility that the eyes cannot bear the light, very frequent sneezing, and a discharge of acrid serum from the nose. Fever and a cough soon come on, with frequent vomiting, pain in the loins, a soreness or roughness in the throat, and sometimes a looseness, which relieves the vomiting. The tongue is furred, the urine high-coloured, and the pulse very quick, often irregular. These symptoms usually increase from the third to the fifth day, at which time little red spots, like flea-bites, begin to appear in the forehead, and other parts of the face, which, increasing in number and diameter, run together, forming large red spots of irregular figures, scarcely, if at all, rising above the surface of the skin. These eruptions are afterwards extended to the rest of the body; but sometimes red effusions are seen on the breast, before any appear on the face. The eruption is not followed by so sensible an abatement of the symptoms as in the small-pox; the vomiting usually abates, but the cough, fever, and headach, grow more violent: the difficulty of breathing, the weakness of, and defluxion on, the eyes, the swelling of the face, drowsiness, and loss of appetite, continue, though the vomiting abates. A bilious vomiting a day or two after the eruption is often useful, and occasionally the patient is relieved by a copious discharge of blood from the nose. On the third or fourth day after the eruptions first appear the redness diminishes, the spots fall off in branny scales, while in other parts of the body they appear very large and red; but in a day or two they all disappear in the same branny scales, leaving a little discoloration on the skin, with considerable itching. On the ninth day from the beginning, when the progress has been speedy, and on the eleventh, when it hath been slow, no trace of redness remains. As the spots disappear, the defluxion on the eyes, the fever, and difficulty of breathing, sometimes increase, the cough becomes more troublesome; and these symptoms are increased by a hot regimen. These peripneumonic symptoms are often followed by a looseness, which immediately succeeds the disease, and often continues with obstinacy after all other symp-

toms are removed. After a hot regimen the eruptions sometimes turn black; but this chiefly occurs in grown persons, and is often fatal. If, during the course of the disease, or immediately after it, some considerable evacuation, such as the vomiting of a bilious matter, a bilious diarrhœa, a considerable discharge of urine, or plentiful sweating come on, the patient recovers soon after the spots disappear from the skin.

The measles are sometimes followed by boils resembling anthraces, livid, often deep, suppurating with difficulty and pain; sometimes attended by soft pustules containing a viscid straw-coloured fluid, which appear highly salutary, by watery vesicles, and occasionally by aphthæ. Swellings of the lymphatic glands often follow, occasionally suppurating, and leaving, as usual, troublesome sores, which heal with difficulty.

Measles is generally a disease of little importance; but it becomes dangerous when the peripneumonic symptoms are violent, and when the eruption recedes. The most favourable symptoms, as in other fevers, are the moistness of the skin, and the bowels moderately relaxed. If the cough is inconsiderable, the eyes not much swollen, the breathing moderately free, there is little danger; but the period of difficulty is often when the eruptions begin naturally to recede. The peripneumonic symptoms are then usually violent; and if at any time the eruptions should suddenly disappear, delirium, anxiety, great debility, with cold extremities and livid spots, come on, terminating soon in death. If the lungs are affected with tubercles, they are often excited to action by this disease, and the foundation of a phthisis is laid.

The treatment of measles has, we think, been mistaken and misrepresented. It has been considered as a peripneumonic disease, and the most liberal bleedings have been ordered: but the peripneumony only comes on by accident, or by mismanagement; for the disease is purely catarrhal. The common measles rarely require *bleeding*; and, in general, the treatment is the combined management of a catarrhal and an eruptive disease. An emetic is undoubtedly at first required, and the mild relaxing diaphoretics, with neutral salts, continued through the whole course, will carry the disease safely to a conclusion. The only remedies necessary, independent of these, are *laxatives*; which, if steadily persisted in from the beginning, will very certainly prevent the occurrence of those violent peripneumonic symptoms, which sometimes come on about the eighth or ninth day. In general it is sufficient to procure two or three stools daily; but the author of this article, when his son, whose tenderness, joined with apprehension of weak lungs, rendered the measles a dangerous disease, was affected, carried the evacuations farther. He watched him hourly, and found him always relieved by stools, so that about the disappearance of the spots, six or eight motions were procured daily. He thought that the recovery was peculiarly quick: the boy was soon brought into the air, and in three days from that period not a cough was heard. No other medicine was administered, except once a slight opiate when the cough was peculiarly troublesome. He mentions the single fact, but without advising an imitation, except where the attendance can be equally unremitted.

The usual remedies of saline diuretics, with antimonials, and occasionally opiates, spermaceti, &c. must also be given, if the practitioner would not be thought ignorant or inattentive; but the laxatives should never be omitted. Should, notwithstanding the evacuations, the peripneumonic symptoms come on, bleeding will be necessary, in very young children by means of leeches; but after the age of five or six, by the lancet, with blisters, and the other remedies of pneumonia. No such instance has, however, occurred to us in an extensive practice; nor to those from whom we learned it, whose practice, equally long, had been more extensive. We have mentioned a diarrhœa as a favourable symptom, and we may now add, that it should not be checked, but regulated according to the strength. The catarrhal inflammation may rise to suffocation; and in that case the emetics must be repeated, and blisters applied to the neck or the upper part of the sternum. A blister to the pit of the stomach is generally an useless application.

When the cold regimen was introduced for the small-pox, some rash innovators transferred the analogy to measles, often inducing the violent peripneumony they intended to avoid. Yet a very warm regimen is injurious; for we have shown that it is inconsistent with the diapnoe, which in every febrile disease is so peculiarly salutary. The room should be large and airy, the child kept in an erect or a slightly reclining posture, according as either can be borne from the load of the head. The drinks should not be hot, but warm only, and the food light, diluent, and in a liquid form. If the cough is troublesome, breathing the steams of warm water will be useful, but these steams should not be drawn hot from an inhaler. The warm water should be put in a bason, and the head covered with a flannel large enough to hang over its edges. The eyes will in this way be also relieved by the relaxing vapour.

Should, from debility or cold, the spots recede, convulsions, pneumonia, and sometimes phrenitis, will come on. In such cases, blisters, with warm cordials, and the warm bath, will be necessary; but this occurrence is peculiarly rare.

The continuance of diarrhœa, after the disease, is sometimes troublesome; and the sagacity of Sydenham has been highly extolled, who recommended bleeding "because the halitus of the inflamed blood was carried to the intestines." We have never found the purging troublesome when the bowels have been kept free during the disease; and when it has occurred, bleeding seems to have exhausted the little strength that remained, often without relieving the diarrhœa. In this case a generous, but not a highly stimulating, diet, bathing the feet, and giving small doses of Dover's powder, have succeeded, interposing occasionally gentle laxatives.

The *rubeola sine catarrho*, in Dr. Willan's opinion, is not true measles, nor does this disease emancipate the patient from being afterwards affected with the real complaint. Indeed the very vague distinctions of rashes will not enable us always to discriminate from the eruption alone, and to this, with the catarrh, we would add some affection of the eyes before we pronounced a child safe. The morbillous fever without the eruption is only a violent catarrh, and equally liable to deceive. The NIRLES, as we have said, is equally a distinct disorder from rubeola.

Dark livid spots are sometimes intermixed with the true eruptions, and in this case an alarm has been spread of putrid measles; but these little petechiæ are usually attended with no danger, and a light infusion of bark, with the vitriolic acid, soon restores the colour. Real putrid measles have been described, but Dr. Willan has shown very clearly that in each instance the disease has really been scarlatina. We cannot deny the existence of putrid measles, since we have frequently seen putrid peripneumony. The plan of treatment, however, should it occur, will be nearly the same; but we cannot enlarge on a disease which no one seems to have seen, and which may never occur.

It has been proposed to inoculate measles like small-pox, and the blood, the acrid serum from the eyes, and the matter from miliary vesicles, sometimes interspersed between the true morbillous eruption, have been employed. Each has succeeded, but more often failed; nor does the disease when produced appear more mild. The attempt therefore has not been frequently made, and to avoid a complaint usually so mild such precautions are not necessary.

See Hoffman and Sydenham, on the *Measles;* Home's Medical Facts; Tissot's Advice to the People; London Medical Observations and Inquiries, vol. iv. p. 132—135, and p. 247—260; Medical Musæum, vol. ii. p. 40—43; Cullen's First Lines, edit. 4. vol. ii. p. 173; Edinburgh Medical Essays, vol. iv. art 2; London Medical Observations, vol. iv. art. 11; Willan on Cutaneous Diseases, part 1. order III.

MORBILLOSA, belonging to the measles.

MOR'BUS (from μορος, *death*). A DISEASE; *malum, nosos.* A disease we have already defined to be "that condition of the human body in which the actions of life and health are not performed, or performed imperfectly." (See CAUSÆ.) The various imperfections in the functions therefore consitute it, a circumstance which the accurate distinction of diseases, according to nosologists, renders indispensable.

Diseases may therefore be as different as the functions injured, but this would render them too numerous, and it has consequently been usual in the morbi universales to combine a certain number of the injured functions to constitute one disease. In the local diseases, one injured function has been supposed alone to constitute a genus. Diseases however differ, either as many persons are usually affected at the same time, and they are then styled EPIDEMIC; or, as peculiar to one country, and called ENDEMIC: when they occur accidentally, they are styled SPORADIC. They differ also as the mind or body is affected; as any particular organ suffers; or from the cause which has produced them: but such varieties are now disregarded; and those who pursue distinctions for the sake of diagnosis, at this time, arrange diseases from their symptoms. See NOSOLOGIA.

While we omit many useless disquisitions respecting disease in its abstract, we have referred to this article for the more general pathological inquiries, and shall proceed to consider the MORBI FLUIDORUM; SOLIDI SIMPLICIS; SOLIDI VITALIS; and MORBI SOLIDORUM CONTINENTIUM, in their order.

MORBI FLUIDORUM. We begin with diseases of the fluids, as in this form our nutriment is taken in, and, if these are defective, the whole system will suffer; though we shall soon endeavour to establish this axiom, that the state of the fluids, in the body, depends on that of the solids, particularly the vital solid. We have already had occasion to observe, that every deviation from the sound state is not disease, but that there are different degrees of such deviations within the limits of health, though probably each may be supposed to form a predisposition to disease.

Diseased fluids are said to differ from those in the natural state, from a difference in their cohesion, or from any acrimony, formed either by the animal process, or introduced with the air or aliment. The cohesion of the fluids may be too great, constituting tenacity and lentor; or too little, when they are said to be in a dissolved state. The blood, to which these diseases are chiefly confined, we have found consisting of different parts in a state of mixture only, and the lentor can be owing only to a diminution of the proportion of water, or a less proportion of neutral salts, by which some of the gluten is kept in solution. It may be doubted whether the excess of the fibrin or gluten may not produce a similar effect, but this we shall soon consider.

The causes of lentor, which result from a diminution of the watery portion of the blood, are said to be a deficiency of drink, an increase of the fluid secretions, a stagnation and absorption of the watery parts separated from the crassamentum. Each of these causes however is imaginary, so far as regards this change, for the secretions are so nicely balanced, that an increase of one is followed by a diminution of the other; and when fluids are not thrown in, they are, in a great degree, checked. Thus, a nurse who has not drank any thing for a long time is not greatly loaded with milk, but immediately, on drinking, it flows freely. The circulation also keeps up the union between the discordant portions of which the blood consists; and while the secretions are supported, no stagnation of watery fluid can take place.

The idea of Gaubius, that a glutinous matter, arising from foods of this kind which absorb water, from a weaker digestion, a more languid circulation, or insufficient exercise, is certainly imaginary; for the glutinous foods produce no such effect, and the other causes of this supposed gluten rather contribute to lessen the tenacity of the fluids. The earthy substances and their various sources, supposed to have the same effect, rest on a foundation equally insecure. The opinion has not a single fact for its support. We know indeed but one cause of lentor, high health, with a consequent increase in the proportion of the gluten and fibrin of the blood; but this is connected with increased tone, and more powerful action of the arterial system, which prevents any bad effects, but which itself constitutes predisposition to disease, under the appellation of *diathesis phlogistica.* See INFLAMMATIO.

Increased tenacity in the secreted fluids is more common; but we chiefly perceive it in the bile and the mucous follicles. It never appears to arise from any defect in the blood, but from stagnation in consequence of debility, sometimes in consequence of a want of irritability in the excretory ducts. We certainly see, in the urinary organs, that the state of the fluids, from which the urine is secreted, influences the nature of this discharge, and a suspicion may arise that a similar effect may produce morbid bile, but in neither case is

the morbid fluid referable to lentor; and the idea of earth joined with acid, so as to form a "pitchy acrimony," is neither supported by observation nor chemical experiment.

Too great *fluidity* is in part owing to an excess of watery fluids, and such a change undoubtedly takes place; but the causes usually assigned are often imaginary. Too large a proportion of watery fluids is corrected by the increase of the watery secretions, and increased evacuations from some glands are generally compensated by the retention of other secretions. In this view an indolent life and a humid atmosphere produce certainly some effect; but the principal diseases which they previously induce are general debility and impaired digestive powers: from hence proceeds the deficiency of the gluten and fibrin; and, of course, the greater tenuity of the serosity.

A more certain cause of preternatural tenuity is acrimony. It may certainly be of various kinds, but we can only perceive with clearness the saline acrimony. Yet we have little doubt of this effect being produced by many other substances. In putrid diseases Deyeux and Parmentier did not discover an increased proportion of ammonia; but the union of the albumen with the serum was affected, and the crassamentum (see BLOOD) was weak. Symptoms also of a preternatural tenuity of the blood come on often suddenly, without any evident cause. We dare not then carry the axiom before mentioned to its utmost extent, for causes not yet within the reach of our knowledge often produce unexpected changes.

A peculiar tenuity of the secreted fluids often occurs, and it may arise from tenuity of the blood, increased, and sometimes inflammatory action of the secreting vessels. Thus the increased flow of urine arises not only from an abundant proportion of water in the blood, but from the increased action of the vessels, as in hysteria, and sometimes from fright. Increased discharge of bile arises chiefly from increased action, which sometimes is occasioned by mental affections, as a violent fit of anger. In hot weather it appears owing to the increase of that portion of the circulating fluid, whatever it may be, which contributes to its secretion. The tenuity of the semen arises also from increased action, owing to the indulgence of lascivious thoughts, or improper indulgencies; of tears and saliva from the same cause, owing often to association. When the increased tenuity is owing to *inflammatory action*, the secreted fluid is usually acrid, as the tears in measles, the mucus of the nostrils and bronchial glands in coryza and catarrh, the bile in cholera, the urine in nephritis, though in the last instance the increased discharge covers the acrimony.

Morbid acrimony of the fluids has been accused as the cause of many diseases; but in the circulating system there are few marks of its existence. When separated by the powers of nature, and carried to the excretories, we perceive only its effects.

Philosophy has divided acrids into mechanical and chemical. Pathology followed, and the mechanical pathologists and therapeutists spoke with much feeling of the wounds which the tender nervous fibrils sustained by cruel angles of salts, or the salutary momentum with which mercury removed obstructions. Even the later disciples of the Boerhavian school have disused this language, and speak of acrids as chemical only.

Nature has, however, anxiously guarded against the admission of morbid acrimony. The taste discovers, the stomach and the bowels reject, what is highly injurious. What may be less so is often altered by digestion, and the mixture of the fluids which it meets with in that process. If, however, it prevails to any considerable degree, we have reason to think that the lacteals refuse their office. When conveyed to the thoracic duct, it is slowly added to the mass, and largely diluted by the considerable proportion of the circulating fluids, and probably sheathed by the albuminous portion of the blood. But even when admitted, either by its chemical affinity or its specific stimulus (see SECRETION), it is carried to its appropriate gland, and by that outlet safely, often silently, carried away.

The source of morbid acrimony may be therefore air, meat, drink, condiments, medicines, or poisons; and the air may convey either miasmata or contagion. When we mention condiments, however, as a source of acrimony, we must except common salt. This seems a necessary stimulus to the process of digestion, and probably accompanies, in a small proportion, the chyle, since its acid is found in the ammoniacal salts of the blood, while its alkali appears to have undergone some change by the animal process, and to have become ammonia. We find miasmata and contagion conveyed by the air, in cases of remittents and intermittents; but a more decided acrimony is evident in the causes and consequences of epidemic catarrh and dysentery; of many of the exanthemata, and of some of the phlegmasiæ. In diseases of the skin there is also evidently an acrimonious substance eliminated, for the reasons assigned under that article. See CUTANEI MORBI. In syphilis, in hydrophobia, and many others, it is equally conspicuous.

The animal process, that is, the changes which take place in the system by the exercise of the animal functions, produces an acrimony which is usually covered by the bland nutriment, constantly supplied till carried off by the fluids, styled, for this reason, *excrementitious*. If, however, these are retained, or the supply of nourishment withheld, an acrimonious state of the fluids follows. What this acrimony is we do not clearly perceive. It is partly saline, partly perhaps the dissipation of, or change in, the albuminous portion of the blood, and very probably some admixture of putrid fluids. When this animal process goes on more rapidly, as in fevers, these changes are more conspicuous. The most evident consequences are, all the symptoms of putrefaction, with gangrene, putrid evacuations, fetid breath, &c.: convulsions and spasms, attributed to this acrimony, appear to come on in consequence of the debility which every degree of putrefaction induces.

The various foods which have been accused as producing acrimony in the *primæ viæ*, and afterwards in the fluids, have probably, for the reasons assigned, little influence in this respect. The acid in the stomach produced by the continued use of acids and acescents certainly injures the digestion, and produces in consequence debility; but there is no trace of acid in the blood, none in the secreted fluids, if we except the ureal and arthritic concretions; and of these the latter only can be very obscurely traced to acescent aliment. An alkalescent diet is uncommon. Putrid meat, or rather meat advancing to putrefaction, does not appear

injurious, if it neither excite sickness nor uneasiness in the bowels; and though dyspeptic symptoms have been observed after a continued course of alkaline medicines in cases of calculus, no injury seems to have been felt in any other organ. The tetradynamiæ have been styled *alkalescent plants*; and these have been blamed for introducing saline acrimony, but, on the contrary, they are the best remedies for a disease in which this acrimony very evidently exists, the sea scurvy.

The scurvy is admitted to arise from salt provisions, but in these the milder animal fluids are separated and in part decomposed; the texture of the animal fibre is also destroyed, and in reality the disease arises from a want of the supply of that bland aliment which corrects the acrimony formed by the animal process. We have evidence of the same cause producing a similar state, where unalimentary food has been for a long time taken, though without salt. It has occurred, however, only in damp, confined situations, and each cause seems to have concurred in producing debility and destroying irritability. It may be said that if this were true, bland mild nourishment should be its most effectual cure: but nourishment of this kind is not sufficiently stimulant to excite the torpid fibres; and while the state of the fluids requires acids and acescents, perhaps oxygen, the stomach is best excited by the warmer vegetables. See Scorbutus. Other acrimonies have not been distinctly pointed out. Effects similar to those of scurvy were found by Dr. Stark to arise from a diet on sugar; but he had before tried so many experiments, that his constitution was exhausted. A saccharine acrimony, if it may be called so, is conspicuous in the diabetes mellitus. We have seen a sweet secretion of a similar nature in the mouth, and have reason to suspect that the discharge in lientery is of the same kind. See Lienteria.

One other source of acrimony remains, viz. the *aromatics*. They are much insisted on by pathologists, but we have found little foundation for accusing them. We have suspected their noxious influence in those diseases of the bladder which in old age are connected with a tenderness at its neck, or some affection of the prostate gland; but it is a suspicion which rests on a slender basis. Since however in such cases they are not necessary as medicines, they may perhaps be more safely avoided.

The subtilty of modern investigators has, however, added to this subject a source of humoral diseases, not suspected in the schools of the mechanical physicians, and which has not yet received a public share of the pathologist's attention; we mean those changes which depend on the composition of the animal fluids. We may repeat shortly, that the carbone and the oxygen of vegetable bodies are converted by the animal process into nitrogen and hydrogen; but they still, in a certain degree, exist, and the change of the oxygen gradually going on has been supposed the cause of animal heat. It is at least certain that a large proportion of oxygen is connected with a fresh florid colour of the blood, with increased vigour and activity of the circulating system, probably with an increased firmness of the simple solid. When therefore in excess, it constitutes a morbid state: such is the extreme of vigour, which, when the balance of the circulation is destroyed, favours topical congestions.

On the contrary, oxygen is too copiously expended in different circumstances, so that its defect is equally morbid. It is too copiously separated in the active exertions of body and mind; but the former, if in the open air, greedily attracts the necessary supply both from the atmosphere and the food for which, by exercise, a craving desire is excited. In low damp situations, and in a confined air, it is not supplied. If the food is unalimentary, the expenditure will exceed the supply; if the bodily exertions are slight, and the mental ones considerable, the excess of expenditure will be more obvious in the symptoms. These are, languid circulation, a pale cadaverous look, diminished irritability, and impaired vigour. In such circumstances the oxygen does not always appear deficient in quantity, but is not evolved in the due proportion, since it probably produces its effects in the period of its separation. Thus oxygenated remedies are not useful in the proportion of their quantity of oxygen, but in that of its loose adherence. The oxygenated muriats are by this means more beneficial than the mineral acids; and of these the nitrous is, from the same cause, superior to the muriatic, and the latter to the vitriolic. acid. An argument we think equally decisive may be drawn from the effects of light. This principle certainly separates oxygen from those bodies which contain it; but dark apartments show in their inhabitants a deficiency of this principle. In fact it is apparently present, but too closely united to show its peculiar effects.

With the excess and deficiency of oxygen are connected the opposite proportions of azote, or nitrogen. They seem in the human body antagonising principles; but though they form air by an union not perhaps properly chemical, we cannot trace the effects of such an union, for the halitus of the insensible perspiration, if not azote, is carbonic acid gas. With hydrogen, however, the oxygen forms water; and when the oxygen disappears we sometimes see, or suspect we see, watery effusions.

We can scarcely ever discover the consequences of an excess of hydrogen or carbone. The singular stories of the spontaneous combustion of the whole body may appear to be of this kind, and to support the delusion, we are told that the victims have been persons accustomed to excesses of drinking spirits; but from such casual facts no general conclusion can be drawn. We may, with equal truth, attribute the pimples of the drunkard's face to the brandy which he has swallowed, producing an halitus of hydrogen, instead of carbonic acid gas, or azote, while they probably arise only from continued and excessive stimulus.

We have found in the blood traces of sulphur, though we are unable to discover its source. We see its excess or its separation in cancerous sores, and some malignant ulcers, which, we are told by Dr. Crawford, discharge an hepatised ammonia. The source of this sulphur, and its deposition, seem subjects equally intricate. Is this (according to modern chemists) the most truly elementary body, really a composition? Is azote a component part? or what are the consequences of an union of azote and hydrogen? "Doceat Dies!"

An *excess* or *defect* in the *quantity of the fluids* is scarcely an object of this part of our work, yet to consider the doctrine of plethora in this place may facilitate some future enquiries. These sources of disease are the πολυχυμια and ολιγοχυμια of pathologists, and are, on

the whole, the distinguishing marks of youth and old age. Each, as may be supposed, is relative to different temperaments, and even idiosyncracies; each may be apparently in excess, and each may predispose to disease, though still within the limits of health. The consequences of the excess of either of the component parts of the blood may be easily understood from the former observations on lentor or tenuity. We now mean to speak only of the excess of the whole mass, which is styled *plethora*. This is divided into the *plethora ad molem*; *plethora ad spatium*; *plethora ad volumen*, and *plethora ad vires*; nor is the distinction frivolous: it were better that it had been more attended to by modern authors.

The *plethora ad molem, ad vasa*, or *ad venas*, for they are synonymous in ancient authors, is the exuberance of the absolute quantity of blood, and, in more delicate habits, is seen by the fulness and redness of the minute vessels. In scrophulous habits, however, this redness does not always denote plethora; nor do they easily bear large evacuations, much less astringents, which are often ignorantly prescribed on account of a fancied weakness. In more robust habits this kind of plethora is chiefly discovered by a full, oppressed, or rather a laboured pulse, and sometimes by a fulness of the veins. In general it occurs in strong robust constitutions, where the digestive powers are vigorous, and the waste from exercise disproportioned to the supply.

The *plethora ad spatium* is produced when the quantity of circulating fluids remaining the same, the capacity of the vessels is contracted. This happens in cold weather, and in the cold fits of fevers, when in weak habits hæmorrhages are not uncommon. It happens also more frequently than is suspected, by the rash imprudent use of astringents, particularly in full mobile habits, in persons of a languid circulation, or in cases of hæmoptoe.

Plethora ad volumen usually implies an increased bulk of the blood from external heat, from violent inflammatory fevers, from friction, from violent passions, spirituous liquors, &c. The blood however is not capable of any very considerable expansion, and these appearances of plethora arise from relaxation in consequence of external warmth, or a determination to the surface, from a more accelerated circulation.

The *plethora ad vires*, though it exist, is still less an object of our present consideration, as it means only a greater quantity of blood than the strength will bear. This, of course, must be relative to the constitution of the patient; but we may add, that it is a more frequent source of disease than is suspected, and peculiarly difficult to relieve, as we have often had occasion to remark, since the slightest diminution of the circulating fluids produces faintness.

It will be obvious that these different plethoras are not inconsistent with each other, and that all may be occasionally combined. The disease such an union may produce will be of course more dangerous, and sudden death has often been the consequence.

The deficiency o blood tl e ὀλιγοχυμια, is supposed to arise from copious evacuations, or from famine. Faintness, however, arises in the former instance before a considerable portion can be lost, and in the latter the contraction of the vessels accommodates them to the quantity. In the infant, however, who dies from not tying the umbilical cord, we have remarked (see MEDICINA FORENSIS) that the vessels are unusually empty, and Lieutaud, as well as Morgagni, has recorded instances of the vessels being peculiarly empty, though without connecting this appearance with the previous symptoms; an omission too common in each. It is sufficient therefore to point out the existence of such a state, since from want of such information we cannot enlarge on its source or its consequences.

MORBI SOLIDI SIMPLICIS. This subject fills a large space in the foreign systems of pathology, and were it not from respect to the talents of men like Boerhaave, Gaubius, De Haen, and Ludwig, we should pass it over very slightly. It will not, however, detain us long, though we shall add in part to their views.

The diseases which can affect the simple solid are those which relate to its cohesion or its chemical nature. The state of cohesion, the only objects of the Boerhaavian school, must be relative in different organs, in different ages, sexes, temperaments, and constitutions. In general the cohesion of the various organs must be in the natural proportion of each. If too slight to bear the requisite motions, it constitutes disease; or indeed if it require very peculiar caution to avoid injury from such motions, it is equally a disease, though in a less degree.

Weakness, or diminished cohesion in a solid when not ruptured, is divided into, 1st, the *lax* and *flaccid* in soft parts which admit of distension by a moderate force; 2dly, the *inert*, or *inelastic*, in parts naturally elastic; 3dly, the *flexible*, as in bones which admit of being bent, after being previously softened.

When rupture has taken place in the tender fibres of soft parts, it is styled *tenerum gracile*; when accompanied with general softness, as from putrefaction, *tabidum*. It is called *fissile* when parts, naturally soft, are dry and chapped; and *fragile* when hard parts are broken in consequence of their weakness.

Rigidity, an opposite disease, consists in increased cohesion, and is styled *tenax* when in soft parts, as the muscles of old animals; *durum*, when in the harder parts, as cartilages proceeding to ossification; and *fragile vitreum* when in the bones.

In all these cases the vital solid is often the chief and the principal cause. The want of elasticity arises from water being poured into the cellular membrane instead of the usual halitus; the flaccidity and flexibility from previous debility. It is extremely doubtful whether the tender fibres of soft parts can be even broken, independent of previous disease, except in consequence of extreme violence, which is not our object; and the *fragile vitreum* attributed to cold has certainly no foundation, for the heat in the internal parts is uniform, and cold could not produce the effect without the previous destruction of life from its sedative power. If softness exist independent of these previous diseases, it must be attributed to the larger proportion of water, or a change in the chemical combination. A similar chemical change must take place in cases of rigidity, but with a diminished proportion of water. We shall therefore consider softness and rigidity as diseases independent of the distinctions just noticed.

When softness becomes a disease, the increased proportion of water, as we have said, arises often from de-

bility, a disease of the vital solid. With respect to the chemical change, the chief substance which attracts our attention in the composition of the soft parts is the GELATIN, q. v. We must add, however, to the remarks contained in this article, some later discoveries. The gelatine then differs from vegetable jellies, in consequence of the union with lymph, an animalised fluid, containing or consisting of nitrogen. This lymph is more copious in advanced life, and in the same proportion the animal gelatine is less soluble in water. In the earlier periods of existence this gelatine admits of the union with water, but not of the later; so that softness is the disease of the young, and rigidity of the old. But we find from Parmentier and Deyeux, that diseases chiefly affect the gelatinous parts of the blood; so that this gelatine, in early life, from its affinity with water, and in the later period if not supplied in due proportion, or with the requisite qualities, produces the diseases of the simple solid referable to diminished cohesion. In each view, therefore, these diseases arise from an excess of water, or rather from debility; and from opposite states, rigidity, the disease of old age must be understood. In the latter state, also, many of the smaller vessels are obliterated; the coats of the larger, which remain, are more dense and less irritable; the exhalations fewer: changes which contribute to increased rigidity.

The fleshy parts of animals experience the progressive changes chiefly from the gradual addition of lymph in a large proportion, of which the fibres seem to consist, as they are not very soluble in water, and appear to yield nitrogen copiously; for though Thouvenel obtained what he styled extractive matter from flesh, muscles probably differ from harder parts, chiefly in consequence of their containing the blood. This animalised lymph is apparently that portion of the blood which separates in the fibrin. The cartilages are chiefly gelatinous.

Bones are only subject to softness and friability, which must in this case be distinguished from fragility, as it chiefly arises from an absorption of the bony matter. Bones are originally gelatinous; and in this jelly a calcareous phosphat gradually crystalises in different forms, according to the shape of the bone. (See BONES.) The gelatinous part assumes the form of membranes by the pressure of the bony fibres, and may be seen when the earthy salt is separated by solution in acids. The bones of the fœtus are naturally soft and flexible. They continue so in a certain degree till their shape is gradually formed by the action of the muscles. The degree of softness unsuitable to the age, is what constitutes disease. It arises from weakness, as in rickets, and from diseased fluids, as in scurvy, and occasionally in syphilis; and immediately depends, in a great measure, on a defective supply of the earthy salt. In rickets, debility of the digestive organs precedes the softness of the bones, and in scurvy the whole system is weakened. In syphilis the bones are perhaps eroded, and become friable rather than softened. They are, however, sometimes softened in cases of general debility, without any peculiar affection of the digestive organs, frequently from a sedentary life, and from confinement by a long chronic disease. This softness, which generally produces deformity, and in one instance rendered the pelvis so deformed as to require embryulcia, or the Cæsarian section in a woman who had before borne children of the usual size, does not produce the peculiar appearance of rickets, because it happens when the shape of the bones has been more perfectly established, as we shall see in that article.

Since, however, our attention has been more particularly turned to the changes in the lymph, we may be allowed to doubt whether the softness of young bones, or the friability of old ones, is wholly owing to the change in the bony matter. Each may be affected by a change in the state of the lymph, as already explained, and in part to the greater or less extent of the vascular system: to these views we may return under RACHITIS, q. v.

MORBI SOLIDI VIVI. The solidum vivum, in the language of Gaubius, is the living portion of our bodies, or, in other words, the nervous system, in which we include, with Dr. Cullen, the brain, the spinal marrow, and the nerves either as sentient or moving organs. The distinction of every part of the nervous system is excitement by stimuli, not acrids only, but every thing generally understood as necessary to life, as food, drink, air, heat, and even volition. As the functions of the nervous system are those of sense and motion, their exercise may be affected by the state of either organ, the state of the brain, or of the nerves in their progress.

The diseases of sensation are in part influenced by the state of the media through which they are conveyed, as those of the skin, the humours of the eye, &c. These will, therefore, give the appearance of different degrees of sensibility, without any disease of the nerves. Different parts of the body differ also in sensibility. The experiments of Haller place the heart in the first rank, and, in succession, the stomach, the intestines, the diaphragm, and the muscles. These have, however, been disputed; but the controversy need not detain us. In the sound state he is not probably in error, but, when inflamed, membranes, and particularly nervous expansions, are by far more sensible than the heart or the muscles. Sensibility also differs in various ages, sexes, temperaments, and idiosyncracies; in pregnancy and child-bed, as well as from habit. The state of mind has also a considerable effect on the sensibility; and sympathy, as well as association, often greatly increases it. Dr. Cullen has supposed that the state of the nervous fibril, or the fluid in the nerves, greatly influences the sensibility, and the opinion gains force from the peculiar irritable state of some constitutions, chiefly known by the name of hysterical habits, where the sensibility is considerable. The state of the fibre, as affected by the blood vessels, interspersed, has a similar effect. We have just mentioned the increased sensibility from inflammation, and the professor supposes that the fulness of these vessels gives a greater tension, with which he connects, with great probability, increased sensibility.

Heat increases sensibility, and cold diminishes it. The sensibility is also less in torpid constitutions, in weak states where the circulation is not carried on to the extremities, from the application of narcotics, from habit and the attention strongly directed to some interesting object. Will not a fixed resolution have a similar effect?

Depravity of sense is also an affection of the vital solid, and consists in either a false estimate of the

force of external impressions, or in referring to the external what is owing to the internal ones. This is, however, as we have had occasion to observe, a disease of the brain itself, and owing to an inequality of excitement, or some impediment to the free communication between its different parts. See MANIA.

The diseases of the moving organs are nearly the same in principle, though not in name. These are irritability and torpor, corresponding in their causes, perhaps their nature, to increased and diminished sensibility, and generally connected with the same constitutions. The former is the distinguishing mark of the sanguine, the latter of the melancholic, temperament. There is, however, another state consistent with the highest health, which consequently may become disease, and is always a predisposition to disease, viz. the vigour of the muscular fibres, the attendant of the diathesis phlogistica, and in which it indeed consists. But to be more particular.

Irritability is generally connected with the more delicate texture of the solid parts, an increased elasticity of the fibres, peculiar quickness of the senses, a more fluid blood, a tender constitution, a more rapid action of the heart and arteries: it is consequently often hereditary, more frequent in females, in warm climates, those who live luxuriously without exercise, an attendant on inflammatory fevers, and considerable evacuations, the pregnant and puerperal state. The effects of this increased irritability are spasms, convulsions, irregular secretions, an unequal temper, faintings, excessive menstruation, abortions, &c.

The torpor of the living solid is marked by a firmer, ruder texture of the simple solid, sometimes by inflexibility, as in the melancholic, occasionally by a want of elasticity, as in the phlegmatic temperament; by a slower action of the arterial system, by yielding less readily to stimuli, and by a dulness of the intellectual functions. It is the constitution of the inhabitants of higher latitudes, and has been sufficiently considered under the article COLD, q. v. The effects of this torpor are a diminution of the excretions, with accumulations in the liver and the head, which induce many chronic diseases.

The diseases arising from the state of the brain chiefly depend on its mobility or torpor, as a portion of the nervous system; but more particularly on the free communication between its different parts. The diseases depending on the state of the nerves in their progress depend also on their degree of excitement, or the communication through them being more or less free.

We had intended in this place to have engaged at some length in the inquiry started in the article ASTRINGENTIA, how far the state of the vital depended on that of the simple solid. We could, however, add little, except to repeat the facts recorded in the pathology of the vital solid; and these seem strongly to support the opinion, that firm cohesion and vigour, a more tender texture and mobility, the first with diminished, the second with increased, sensibility, are at least very closely connected. Are they ever separated, or do they depend on the same state of the solid? Future inquiries may enable us to decide.

MORBI SOLIDORUM CONTINENTIUM. The containing solids, or the parietes of cavities, are muscular or membranous; and their size may be, in different ways, increased. When merely dilated beyond what their elasticity or their muscular power can restore, it is styled *dilatatio*; when cavities, as arteries or excretory ducts, are so enlarged as to suffer the contents to pass out, *anastomosis*; when the fibres of cavities are separated so as to suffer fluids to escape through them, *diapedesis*; when ruptured, *diæresis*; if ruptured by distension, ῥῆξις, if by erosion, διαβρῶσις. The effects of these changes will be sufficiently obvious; and, indeed, we should not have introduced the subject but to explain the terms.

The diseases from contraction are *obstructio*, when from anastomosis a denser fluid than the vessel is destined to carry passes into it, when its contents are inspissated, or when a solid substance impacts it; *obstipatio*, when the thickened parietes, or any tumour, obstructs the vessels; *compressio*, when cavities are diminished or obliterated by pressure; *collapsus*, when the sides fall in from diminished contents; *contractio*, when diminished from great elasticity or spasm; and *coalitus*, when the sides unite and are conglutinated.

The morbi solidorum intrumentarii are the local diseases of nosologists, and not a part of this subject.

Haller and De Haen Commentarii in Boerhaavii Institutiones; Ludwig and Gaubii Institutiones Pathologiæ Medicinalis.

MO'RBUS ATTO'NITUS, CA'DUCUS, COMMITI'ALIS, HERCU'LEUS, INFANTI'LIS, PUERI'LIS, INTERLU'NIUS, MA'GNUS, SA'CER. See EPILE'PSIA.

MO'RBUS COXARIUS. This is properly the arthropyosis, but various circumstances prevented our enlarging sufficiently on it at that time, and we prefer inserting our account of it under this title, as the disease is better discriminated by it from psoas abscess, and from sciatica. De Haen, who first considered it distinctly, also employs this term.

It generally comes on almost imperceptibly. The first sensation is a dull pain, often attributed to fatigue, to a strain, or, in more advanced life, to gout. When the pain becomes so violent as to attract attention, it is described as deeply seated, but on strong pressure it is greatly increased; the glutæi and the vastus internus are flabby; and the glutæus, losing its elasticity, obliterates the line which apparently divided it from the biceps and semitendinosus. The thigh itself is less, though the nates on the side affected are sometimes extended in breadth. In many cases the tubercle of the ischium is lower, and the leg, on the side affected, longer. In general, on walking, the toe drags a little on the ground; and the limb is raised, or extended sideways, with difficulty, though moved circularly with some ease. The pain is not considerable, except in the advanced states of the disease, but it is not confined to the joint. It sometimes extends to the knee, and is felt there with so much violence, as to lead to a suspicion that this joint is the seat of the disease. From the knee it extends to the ancle, but is felt there less acutely. The pain is sometimes on the upper part of the pectinæus, near the place where psoas abscess first appears, and then it descends on the inside of the thigh, nearly in the direction of the adductores of the triceps and vastus externus, almost in a straight line from the knee to the ancle.

For some time the general health remains uninter-

rupted; but, when the disease advances so as to be acutely sensible to the touch, with an acute or throbbing pain, and a redness of the skin, hectic exacerbations come on; the patient starts in his sleep; the face is of a leaden paleness, except when flushed with hectic heat; the skin is clammy; the body wastes, and the strength gradually sinks.

The shortening of the limbs has been esteemed a mark of suppuration coming on; but this is not correct. The limb is sometimes shorter from the beginning, as well as in the advanced stages; nor is any certain consequence to be drawn from this circumstance, unless it suddenly becomes so, when it may give some suspicion of matter having formed.

On dissection, the head, sometimes the neck of the thigh bone, is carious; nor is the change confined to this bone, for the acetabulum equally suffers, and the matter has been found to escape through it into the cavity of the pelvis. Matter in proportional quantities is occasionally found in the cotyloid cavity.

In this disease there is evidently relaxation of the ligament, with a slight inflammation. It probably begins with inflammation of the head of the bone, like that which occurs in the vertebræ, in cases of distorted spine, and gradually presses it downward, upward, or to either side, according to the portion of the head affected; and this will account for all the variety of lengthening or shortening of the limb; for the difficulty of moving the legs sideways and outwards, or, for what sometimes happens, of keeping them together.

It is often confounded with rheumatism, and with psoas abscess; but from each may be distinguished by the elongation or the abbreviation of the limb, by the increased breadth of the nates, and the laxity of the glutæi muscles. In the earlier periods also of psoas cases, the difficulty of bending the body, or of putting either leg forward, will sufficiently point out the part affected, while the pain on pressure, dragging the toe, and the relaxation of the glutæi muscles, will sufficiently distinguish it at a subsequent period. In rheumatism also the pain is more extended, the earlier fever more considerable, with often external soreness. At every period of the complaint the prognostic must be unfavourable; but if the constitution is sound, without any scrophulous taint, the disease incipient, and the patient willing to pursue the necessary plans, we sometimes suceed. Even when suppuration has come on the patient may escape, but it must be by the efforts of nature alone. In such cases the abscess occasionally bursts, though this sometimes does not occur, and the matter is absorbed. In each circumstance the most absolute rest, free country air, a milk diet, keeping the bowels free, with the occasional use of the bark, are chiefly useful. If any thing is more essentially necessary than the others, it is absolute rest, with free country air. If any thing is less so, it is medicine. A stiffness of the joint is, however, the inevitable consequence.

The causes appear to be most generally cold, from damp beds, and lying in damp sheets. Blows and strains also induce it; but in children it often comes on without the known influence of either, and seems to be of a scrophulous nature, as it chiefly affects those whose appearance shows the seminium of that disease.

The cure of the disease, in the earlier or middle stages, requires peculiar attention in the practitioner, and no little resolution in the patient. Inflammation, we have said, is the first symptom, and bleeding with leeches, a moderately low diet, occasional doses of neutral salts, together with the continued discharge of a blister, will succeed. If the season permit, sea-bathing or cold pumping will complete the cure. In this state also, a light infusion of the bark, or any other bitter, seems to have been of service. Should, after a trial of this plan, the disease continue, or seem to increase, an issue should be made just behind the great trochanter. The application of a caustic will, on the separation of the escar, form a deep sore, which should be so large as to require, both in breadth and depth, a horse-bean for its continuance. Tenderness is in this case cruelty: it should be done effectually, or wholly omitted. If the pain and fever have not been violent, or have been mitigated by the usual remedies, sea-bathing may be continued with this issue, as it can be easily covered by leather spread round its margin with sticking-plaster. Some surgeons have recommended a seton; but the cord does not penetrate so deep, and cannot be so conveniently covered to admit of sea-bathing, which is a most essential remedy.

Instead of leeches, cupping-glasses have been recommended; and instead of blisters, the lime poultice, made of one part of quicklime slaked in the air, with two parts of oatmeal, made into a poultice with hogs-lard. These are less effectual remedies, though sometimes useful in irritable habits, where the terror excited by the more acute remedies might be injurious. They should be trusted, however, only in the slightest cases. Opiates, particularly in the form of Dover's powder, may, at any period of the disease, be allowed with safety; and often when the pain is violent with advantage.

Though we have chiefly trusted sea-bathing and cold pumping, yet the annals of the Bath hospital speak with confidence of the utility of warm pumping; and Dr. Falconer has lately given a very satisfactory view of its utility. The Bath waters can only be admitted when fever has not come on, or when it has been checked by the appropriate remedies. If the patient be tolerably strong, and the symptoms moderate, the bath of 105° is used two or three times a week, and the patient continues in it from fifteen to twenty-five minutes. After bathing a few times, on the intermediate days, the part is pumped on for about five minutes, when the patient receives 500 strokes. From this remedy the stiffness and pain are relieved, the soreness and swelling diminish, the strength and plumpness of the limb gradually return, and the leg, whatever was the change, resumes its natural length and direction.

A similar application of hot water has been attempted at a distance from Bath; but whether it arises from the heat employed being too low, or that the Bath waters derive, in part, their virtues from the mineral impregnation, is uncertain; the effects, however, have not answered the expectations of the practitioner. The warm sea-water bath promises to be very useful, and to this a pump may be readily adapted.

If the suppuration proceeds, notwithstanding every

effort, we have already remarked that nature must effect a cure, if the patient ever attains it; and the plan has been sufficiently detailed.

Hippocrates de Morbus Internis, cap. 54—58; Cælius Aurelianus de Morbis Chronicis, lib. v. cap. 1; De Haen de Morbo Coxario; Falconer's Memoirs of the Medical Society of London, vol. vi.

MO'RBUS GA'LLICUS I'NDICUS. See LUES VENEREA.

MO'RBUS HUNGA'RICUS. See AMPHEMERINA HUNGARICA.

MO'RBUS STRANGULA'TORIUS, TRUCULE'NTUS INFANTUM. See SUFFOCATIO STRIDIA.

MO'RBUS NI'GER. The BLACK DISEASE, *melæna* of Sauvages, *melaina nosos* of Hippocrates, of which he describes two kinds. In the first the patient vomits black bile, sometimes bloody and sour; a thin saliva, or green bile. The acrimony of the fluid occasionally inflames the mouth, and its acidity affects the teeth in the usual way. Vomiting relieves, but flatulence affects the patient when empty, and a great load is felt after eating. A slow fever, head-ach, dim sight, heaviness in the legs, and blackness in the skin, are common symptoms. Frequent cathartics, with whey, milk, and other diluent drinks, are only necessary. The second kind consists of a discharge of concrete blood of a blackish red colour, mixed with a large quantity of insipid, acid, or viscid phlegm, thrown up by vomit. This evacuation is generally preceded by a pungent tensive pain in both hypochondria, and the appearance of the disease is attended with anxiety, a compressive pain in the præcordia, and fainting, which last is more frequent, and more violent, when the blood evacuated is fetid and corrupt.

In modern authors, every dark-coloured discharge has this appellation, and little care is taken to distinguish its source. A black discharge may be either bile or blood. Each is distinguished by the colour when diluted, for bile is of a dark yellow, and blood is red. But in worn-out constitutions the bile will not always assume on dilution the yellow hue; and in this case the black matter consists of dark flakes, or sometimes a dark pitchy matter is discharged. The latter appearance is not indeed a diagnostic mark, for it is the colour of the meconium in young children, and is the substance often discharged after long continued constipation.

When these distinctions are kept in view, the practice is easy. The discharge of blood is either an active or a passive hæmorrhage, generally passive, and in neither case highly dangerous. Indeed we have seen very considerable discharges of blood by stool, from strains in the young and active, yield to nitre, to opiates with occasional mild laxatives. The passive hæmorrhages require astringents, with the vitriolic acid. The blood in these cases flows from different arteries, and its source requires no variation of practice.

When the bile is dark, a previous suppression has usually occurred, and the discharge, which is essentially necessary, must be regulated by the strength of the patient. The pitch-like bile, or perhaps the grumous blood, requires also to be evacuated; and the best medicine for each purpose, if the strength of the patient will admit, is calomel. This medicine, were we to revive the term, we should style the true cholagogue. But the pitchy and the flaky bile, in worn-out constitutions, must be gradually discharged, and the strength supported by wine, by nourishing diet, by aromatics, and by any thing but astringents.

Pains are uncommon; and if they occur, must be obviated by fomentations, and by opiates. They are truly spasmodic, for inflammatory pains only attend inflammation of the membranes of the liver.

The discharge from piles sometimes resembles the melæna; but the pain, at the lower part of the rectum, the fulness and tension, sufficiently distinguish them.

See Hippocrates, lib. ii. De Morbis, sect. v.; Hoffman, Rationalis Medicina Systema; Edinburgh Medical Commentaries, vol. iv.; London Medical Journal, vol. i. p. 10.

MORDE'HI. A disease to which the East Indians are subject. It is a fever seemingly from bile in the stomach. See F. Hoffman, De Morb Epidemicis.

MORDE'XYN. A disorder very common at Goa, which seizes the patient suddenly, attended with a continual nausea and vomiting, and often proves fatal. F. Hoffman, De Morbis Epidemicis.

MORHU'A. See ASELLUS MAJOR.

MORI'LLE. See AMANITA.

MORI'NA. A plant, named in honour of Dr. Morin of Paris. *Morina persica* Lin. Sp. Pl. 39, said to be cordial and perspirative.

MORI'NGA. *Guillandina moringa* Lin. Sp. Pl. 546. A large tree in Malabar and Ceylon, whose fruit is a foot long, angular, as thick as a carrot, and delicious to the taste. The leaves, root, bark, and fruit, are said to be antispasmodic and sudorific. See Raii Historia.

MO'RO, (from *morus, a mulberry*). An abscess in the flesh, resembling a mulberry.

MOROCTHUS. See OMOROCTHUS.

MORO'SIS, (from μωρος, *foolish.*) STUPIDITY, IDIOTISM. This may be styled a mental disease, sometimes owing to a more slow expansion of the mental faculties, which often, however, attain their powers suddenly, and in perfection, as suppressed irritability is followed by excess of excitement. When the mental powers are developed slowly, we often find a defective conformation of the cranium, and particularly an elongation of the upper part, while the sides are unusually depressed. Pinel, who scarcely admitted any organic defect to produce mania, admits it as a cause of idiotism. When in a less degree it is not connected with any defective organisation which the knife can discover.

Dr. Cullen considers this disease as synonymous with AMENTIA. Sauvages makes it a species of AMENTIA, and defines it a slowness or inability in the faculty of imagining or conceiving; consequently a debility in judgment without delirium. Stupidity differs from folly, as stupid or idiotic persons want both conception and memory. See AMENTIA.

MOROSITA'TES, (from *morosus, peevish*), are diseases wherein the desires and aversions are unnatural and depraved, and in which it is difficult to please or satisfy. A morose man, speaking of him in a state of disease, constantly requires what is injurious, and is averse to what would be beneficial. In Dr. Cullen's system these diseases are synonymous with dysorexiæ, appetites erroneous and defective. In the last editions they are included under the class *locales*, because almost all the species of dysorexy are affections of a par-

ticular part rather than of the whole body. The nostalgia alone, if it can be called a disease, cannot be esteemed a local one; but he thought he could not well separate an uncertain disease from the rest of dysorexies. See Nosologiæ Methodicæ Synopsis, vol. ii.

MORPHÆ'A, (μοϱφαια, from μοϱφη, *forma externa*). MORPHEW, SCURF, a species of the leprosy seated in the skin. The brown itching morphew is named *hepatizon*.

MORPIO'NES. CRAB-LICE, so called from their resembling crabs; *pediculi pubis* Lin. *plactulæ, petolæ, pessolatæ*. They are flattish, more round than the common lice, with a shorter thorax, and the four hinder feet, very strong, perforate the cuticle, and stick so close that they can be with difficulty dislodged. They do not only affect the pubes, but the axillæ, eyebrows, and eye-lids, and are often found on the breast, abdomen, thighs, and legs, in persons who have those parts covered with strong hair; but they seldom fix upon the hairy scalp. They occasion considerable itching, which may be cured by destroying them with black soap, or a solution of sublimate in rose-water, in the proportion of ℥ ss. to ℔ i. of the water: strong mercurial ointment is an effectual remedy. See PEDICULUS.

MORS. See DEATH.

MORSE'LLUS, or MORSU'LUS, (a dim. of *morsus, a bite*). See TROCHISCI.

MORSU'RA, (from *mordeo, to bite*; A BITE, generally applied to the bite of a mad dog, a viper, or any venomous animal.

MORSUS, (from the same). A BITE, or PAIN resembling that from a bite of an insect.

MO'RSUS DIABO'LI. See TUBÆ FALLOPIANÆ, or DEVIL'S BIT, and SUCISA.

MO'RSUS GALLI'NÆ. See ALSINE.

MO'RSUS RA'NÆ. See MICROLEUCONYMPHÆA.

MORT DE CHIEN. A spasmodic disease of peculiar violence and obstinacy, not generally understood. The name is assigned by the seamen, who probably consider this disgraceful termination of their lives as the *death of a dog*. The disease is mentioned by Bontius, and by Mr. Girdlestone; but considered more distinctly and accurately by Mr. Curtis in his account of the Coast Diseases of the East Indies. It is a violent spasm affecting not only the extremities, but the bowels, drawing the intestines into a hard knot, attended with great coldness and debility, and within a very short period fatal. It has been attributed to acrimonious bile; but previous evacuations do not prevent it, nor emetics, with purgatives, relieve it. External warmth, with the most active stimulants, and opium, in very large doses, appear to have been the most useful remedies. See Curtis's Account of the Coast Diseases of the East Indies.

MO'RTA. Synonymous with PEMPHIGUS.

MORTARIO'LUM, (dim. of *mortarium, a mortar*). In chemistry, a mould on which cupels are formed; in anatomy, the sockets of the teeth. See ALVEOLI.

MORTIFICA'TIO, (from *mors, death*, and *fio, to produce*). A MORTIFICATION. *Sphacelus, ignis frigidus*. Hippocrates uses sphacelus in different senses, sometimes confining it to a corruption of the bone, which, in the language of Celsus, is called *vitiari;* but these words are used in general to express the corruption of the flesh as well as bones. A mortification of the soft parts only Hippocrates styles *sapron, mydosen*, and *sepomenon*. The word *sphacelus* was used by the ancients to express violent pains and inflammations terminating in mortification, as well as the withering of any part. Galen confines the term sphacelus to an incipient gangrene.

Boerhaave considers gangrene as a beginning mortification. Mr. Pott calls it gangrene in the cellular membrane and the skin, but when attacking the muscles, sphacelus. A mortification in the bone is called a *caries*. Dr. Cullen considers the mortification not as a genus of disease, but as a termination of inflammation; and he divides it into gangræna and sphacelus. In the first, after an inflammation, the part becomes livid, soft, has little sensibility, and is often covered with ichorous vesicles; in the second, after a gangrene, the part becomes black, flaccid, easily lacerating, without sensation or heat, and attended with the fœtor of putrid flesh; the malady quickly spreading: the latter is therefore an higher degree of the former.

A mortification is, the death and consequent putrefaction of one part of the body while the rest is alive. Celsus describes its progress in the following terms. The flesh is black or livid, dry or parched, and the external skin generally full of blackish pustules: then that which is next to it is pale or livid, almost æruginous, and without sensation. It is still worse in an inflammation, since all the symptoms spread at once, the ulcer into the pustulous place, the pustules into that which is pale and livid, the pale or livid into that which is inflamed, and that which is inflamed into that which is sound.

It is singular that this subject has so long remained in a state of so much confusion, not only with respect to its nomenclature, but to its causes and treatment. We have found in no author a connected and systematic view of the subject, and we must therefore, on this as on several other occasions, endeavour to unite the scattered limbs and supply the deficient links. In this inquiry we shall employ the term mortification as a generic one.

The simple idea of mortification is, as we have already said, the death of a portion of the body while the rest continues alive, often in a sound state. This partial death may arise from general or local causes. The general causes are fever, or great debility; each occasionally attended with a dissolved state of the fluids. Fevers attended with mortification are the violent inflammatory ones, with local inflammation, or the jail and hospital fevers. Diseases of debility are those of old age, anasarca, scurvy, bruises, and causes which check the circulation of the blood, or impede the nervous influence. In these cases, the life of the part is destroyed by the violent excitement, or the tone of the constitution gradually diminished, by advancing age, a sedentary life, or an unalimentary diet. In internal inflammations we cannot see the progress, but it is probably the same as in the external parts. In the latter the pain ceases, the purulent matter becomes acrid and sanious; air-bubbles are set at liberty, collecting in small vesications, under the skin, or distending the whole organ by an emphysematous swelling. A slight delirium comes on, with either dejection of spirits, or with a calm serenity of mind; but, in each case, attended with a peculiarly wild expression of countenance; though sometimes with a very peculiar expression of serenity, with a blackness under the eyes. The pulse is usually quick,

low, and often intermitting. In the earlier stages, deep incisions are attended with a discharge of blood still florid; but the skin, the muscles, and the cellular membrane, soon melt down into a brownish offensive mass. See INFLAMMATIO.

In the jail and hospital fevers, depositions sometimes take place, resembling, at first, in appearance, critical abscesses, but rather of the nature of the anthrax or carbuncle, running rapidly into mortification; and, when these do not appear, discolourations, apparently slight, will be observed on the skin which often run deep, and the mischief is concealed till no longer within the reach of art.

Mortifications, from debility, are frequent in old age, and these are sometimes chiefly local. When attended with great pain, they are highly distressing; but they sometimes occur without being perceived. Mr. Pott first pointed out the painful kind, as the subjects of treatment different from that which had been usually recommended: the other kinds are the *dry*, and what has been styled the *white* gangrene. In the *dry gangrene* the parts shrivel, the fluids are absorbed, but no putrefactive fermentation can take place without moisture. The part remains attached, for a time, like an extraneous one, and may be amputated above the mark, which separates the dead from the living portion; but nature at last often makes the separation, as in other gangrenes. The *white gangrene*, sometimes mentioned, seems rather to be a paralytic insensibility than truly gangrenous.

In general, the topical gangrenes of advanced life are owing to ossifications of the arteries, and we suspect the pains attending those described by Mr. Pott are owing to the effort of the arteries above, endeavouring to conquer the obstruction. We have instances of similar pains in paralytic limbs, when sensation is recovering, and in anasarcous ones, when the water is removed. What adds to the probability of the cause is, that the pains occur some time previous to the darkness appearing on the skin, which is usually first observed between the toes.

Water, collected for a long time, in the lower extremities, presses on the nerves and arteries, destroying both sensibility and irritability. In such cases, a slight wound often becomes gangrenous, and the vesicles, raised by the water, and by which it is occasionally discharged, sometimes cover a deep mortification. Such consequences are not however common, and when mortification, in such instances, does follow, it is superficial, and often easily removed. See ANASARCA.

In scorbutic habits, particularly in sailors after long voyages, in soldiers from an unhealthy encampment, or after a siege, and in prisoners after confinement, ulcers break out chiefly in the lower extremities, which discharge a thin ichor, and sometimes terminate in mortification. Instances are also recorded of mortifications rapidly coming on without any evident cause.

Other causes are ligatures, wounds, fractures, where the soft parts are greatly bruised or lacerated; aneurisms, or ruptured arteries, with whatever impedes the influence of the nervous power, or the flow of blood from the heart. From these causes, mortification often occurs in palsied limbs, or is the effect of severe long-continued COLD, q. v. Compression of the spinal marrow in cases of distorted vertebræ, or of other tumours in the course of the larger nerves, equally produce it, by first inducing palsy.

The event of mortification is always doubtful; and when the cause is irrecoverable debility, obstructions which art cannot remove, or ossifications of the arteries, we can scarcely expect a cure. Internal mortifications are usually beyond the reach of medicine; yet we see in cases where the operation is performed for strangulated hernia a beginning blackness, not followed in some cases by any fatal event; and find that even a portion of intestine may be thrown off, after intussusceptio, in which internal mortification must have preceded. We should not therefore relax in our efforts, when appearances of internal mortification have come on; and, in fact, we find in enteritis the most threatening symptoms of this kind apparently relieved.

The most important symptom to guide us in cases of mortification, is the appearance of separation. When the general principle of the disease, in the constitution, is checked, a red line, sometimes considerably above the mortified part, appears. At this line the dead part drops from the living; and, when it is discovered, amputation above that line will greatly save the strength of the patient: were the natural separation suffered to go on, amputation would be afterwards necessary, if the stump is expected to be ever useful. In cases, however, where, from the violence of the bruise, mortification appears inevitable, amputation, previous to its coming on, will succeed, at no great distance from the wounded part, if above the place where it is bruised, or to which inflammation has extended.

When mortification appears to have taken place after internal inflammation, we have said our endeavours must not be relaxed, but we must check all evacuations, and support the strength with more generous nourishment, give wine so far as the original disease will permit, occasionally bark, and more certainly opium.

In external mortifications, from inflammation, it has been common immediately to give bark. But this is not always necessary, and sometimes injurious. If the increased action of the vessels still continues, it must be moderated by a stimulus, a little below that which supports the inflammation; and it is in this state that the application of a solution of muriated ammonia with vinegar is peculiarly useful. At this period also, opiates will be advantageous. When the disease has proceeded farther, and the part is wholly dead, the warmer applications, soon to be mentioned will be necessary. It has been usual to direct, in such cases, incisions or scarifications down to the living portion of the limb. It has been practised, and opposed, without sufficient foundation. It is often useful to admit of the access of the stimuli to the living part, to assist the separation; and there is no danger from the absorption of the putrid matter, as has been supposed. Yet, on the whole, the advantages of this plan, in practice, do not appear to be considerable.

In those mortifications which attend jail and hospital fevers, the bark, with cordials, each in the fullest doses, are absolutely necessary; nor are there any limits to the exhibition, but what arise from the situation of the patient. In such cases, all abscesses must be opened very early. We cannot wait for a proper purulent matter, which nature is most frequently unable to form; for the discharge is most often fetid and sanious.

The topical mortifications are most frequent; and, in these, Mr. Pott has taught us the superior advantages of opium. In general, this medicine is indicated when great pain has preceded; and it is probable that, as excess of contraction lessens the irritability of muscular fibres, so excess of excitement will impair the nervous energy. Opium, therefore, as diminishing the cause, will contribute to lessen the effect. Whether opium will add to the efficacy of other medicines, or will, alone relieve diseases of this kind, has not yet been ascertained. We have reason to think it will prove a useful addition in the greater number of cases.

If opium fails in the painful gangrenes, proceeding from ossifications, we know not what can be substituted. Bark, wine, and other cordials will have little effect; nor will any thing succeed but amputation. Where however must we amputate, or where does ossification end? and in an old, worn-out, debilitated frame is the operation advisable? To add a few weeks to a decaying constitution will not justify what Dr. Aitken calls an *Herculean experiment*.

The rest of the practice is empyrical. Bark, wine, ardent spirits, and opium, must be given in doses equal to the emergency, and often accumulated with great rapidity. It might perhaps render the practice less empyrical, if surgeons were to distinguish more accurately when stimulants and when antiseptics were necessary. The list of stimulants is unusually long; but the order indirecta, including wine, alcohol, &c. is of equivocal use, as followed by loss of tone, unless the application is continued. As powerful antiseptics also they have been preferred, and we should also remember, that in general, when the disease is first checked, nature exerts all her powers to continue the salutary process. We add to the antiseptic power of these stimulants by camphor, which may be properly combined with them, and sometimes by the warmer essential oils, which may perhaps be more often used with advantage; and the effects of all are increased, by their being heated to a degree so high as the patient can bear. In local mortifications from debility, the antiseptics are often only necessary; and of these the myrrh is frequently very useful, and in cases of a high degree of fætor, the carrot poultice, the charcoal, the effervescing poultices, particularly with the oak bark, and the cummin-seed, are highly advantageous. In every situation of this kind, however, the constitution must be supported, by a generous diet; by wine frequently by bark.

In many instances, the bark is inadmissible, either from fulness, asthma, or other constitutional complaints. In these circumstances, wine, probably opium, ammonia, with stimulant applications of the greatest efficacy, must be employed. We have not found that the other bitters will supply the place of the bark; but the chamomile flowers have been recommended, though modern practice appears to rank them among the more inert remedies.

Antiseptic poultices are of different kinds. The astringents of which the chief is the oak bark, are highly useful; and this, joined with fermenting substances, is often highly useful. The addition of charcoal is said to correct the fœtor, and it may add also to the antiseptic power. Since however it was introduced by the recommendation of the first Monro, the bark has been implicitly trusted.

We might add a hint, that amputation has been often employed too early, and that ecchymosis has been mistaken for mortification. Yet, as we can lay down no general rules for the conduct in cases of emergency, we would not insinuate doubts which might be prejudicial to the character of the surgeon, without reason or foundation.

The tendency to mortification from scorbutic affections must be obviated by fresh vegetables, and the native vegetable acids. Those from tumours of the spine or other parts, from palsies, &c. must be relieved by remedies adapted to the original affection.

Boerhaavii Aphorismi. Hildanus de Gangræna et Sphacelo. Heister's Surgery. Kirkland on Pott's Remarks on Fractures. Pott's Works. Bell on Ulcers, edit. 3. p. 93—122. Kirkland's Medical Surgery, vol. ii. p. 291—433. London Medical Transactions, vol. iii. p. 47. Pearson's Principles of Surgery, vol. i. p. 105. White's Surgery, p. 8.

MO'RTUA TE'RRA. See CAPUT MORTUUM.

MO'RUM, (from *morus, a mulberry*). An excrescence on the surface of the skin in many parts of the body, resembling a mulberry. When on the eyelids, the Arabians call it *alchute*.

MO'RUS, (from the Hebrew term *mora, black*). The MULBERRY-TREE, *morus nigra* Lin. Sp. Pl. 1398. Its fruit hath the common quality of all subacid fruits, quenching thirst by their coolness, and by exciting an excretion of mucus in the mouth; a similar effect is also produced in the stomach, where they also correct putrescency, which occasions an uneasy clammy sensation in the fauces. A syrup is prepared from this fruit, though but little used. See Raii Historia. The bark of the root of the mulberry-tree has an acrid bitter taste, is said to be a cathartic, and has been used with success as a vermifuge, particularly in cases of the tape-worm, given in powder, in the dose of half a dram.

MO'RXI. A pestilential distemper, very common in Malabar and other parts of the East Indies.

MO'SA. A liniment used in Germany, made of wheat-flower and milk, nearly of the consistence of thin paste.

MOSCH. The roriferous vessels, which Bilsius thought that he had discovered, but never demonstrated. Castellus.

MOSCHATELLI'NA, *adoxa moschatelina* Lin. Sp. Pl. 527, *ranunculus nemorosus, aristolochia rotunda, concava, denticulata*; a diminutive from *moschus*; called so in consequence of its smell. The root is supposed to be resolvent and detergent. See Raii Historia.

MO'SCHUS, (from the Arabic term *musch*). MUSK, *amisa*, is an odoriferous grumous substance, an inspissated secreted fluid of the *moschus moschiferus* of Linnæus, and the *Tibet-musk* of Pennant. This animal is of the deer kind, and the drug is found in a follicle of the size of a hen's egg, on the belly of the male only. The bag is kidney-shaped, pendulous, opening by two small orifices; a naked oblong one, and another smaller with long hairs. The best musk is brought from Tonquin in China, in thin bags, with brownish hairs; an inferior sort from the East Indies is in bags with white hairs. Neumann thinks both equally good.

The best musk is dry, with a kind of unctuosity, of a dark reddish-brown colour, in small round grains, with very few hard black clots, perfectly free from any sandy

or other visible foreign matter. Chewed and rubbed with a knife on paper, it is bright, yellowish, smooth, and free from grittiness. Laid on a red-hot iron, it flames, and burns almost entirely away, leaving only an exceeding small quantity of light greyish ashes. The taste is bitterish and subacrid, the smell highly fragrant, in small quantities, or at a distance. Rectified spirit of wine takes up the whole of the active part; but the smell is only discovered on dilution: a drop or two communicates to a quart of wine, or to water, a rich scent. The quantity of liquor which may thus be flavoured by a certain known proportion of musk is the best criterion of its goodness. With water it is mixed only by the intervention of mucilage, as in the following preparation.

MI'STURA MOSCHATA, formerly *Julépum è moscho.* —Take of rose-water, six ounces; of musk, two scruples; of the mucilage of gum-arabic, and of double refined sugar, of each one dram; grind the musk with sugar, then with the gum, and add the rose-water by degrees. Volatile spirits enable the water to suspend or dissolve more of the musk; and two drams of the volatile spirit may be added to the above mixture. Dose, two or three table-spoonfuls. In distillation, however, water carries over all the odoriferous matter, while the rectified spirit scarcely conveys any portion of it.

Though the smell of musk sometimes disorders those who are peculiarly sensible and irritable, yet, when taken inwardly, it abates those symptoms which its smell produces. It is one of the principal antispasmodics; but its advantages are often lost by giving it in too small doses. Dr. Wall informs us that two persons, labouring under a subsultus tendinum, extreme anxiety, and want of sleep, occasioned by the bite of a mad dog, were perfectly relieved by two doses of musk of sixteen grains each; adding that convulsive hiccoughs, attended with the worst symptoms, were removed by two doses of ten grains each. When, on account of convulsions, no medicine could be given at the mouth, musk succeeded in a clyster; and those who were averse to perfumes expressed no objection to it in a bolus; but under six grains he never saw any benefit by its use. Ten grains and upward promoted usually a diaphoresis without heating or giving any uneasiness: on the contrary, it abates pain, raises the spirits, and, after the sweat begins, promotes sleep; and in maniacal cases hath afforded a temporary relief. Dr. Owen, of Shrewsbury, relates a singular instance of success from yet larger doses, viz. of half a dram every four hours, in a convulsive disorder, after all the usual methods had failed. See London Medical Observations and Inquiries, vol. iii.

Though we highly respect these authorities, yet our own experience does not support them in their full extent, which may probably be owing to the medicine not being genuine. In large doses it is said to procure sleep, and as certainly to occasion a profuse sweat. It has been hence considered as a sudorific, and given in the latter stages of fever, particularly where subsultus and convulsions had come on. In gout retroceding to the stomach or head, and in delirium, it is also said to be a valuable medicine.

Some practitioners consider musk as a medicine of little or no consequence; but for what reasons it is difficult to determine, since the experience of every day proves it certainly a diaphoretic and antispasmodic, given in such doses as are properly adapted to the constitution of the patient and nature of the complaint; but, on the whole, it is not a very certain or a very powerful medicine.

See Lewis and Cullen's Materia Medica, and Neumann's Chemical Works.

MO'SCHUS A'RABUM. See ABELMOSCHUS.

MO'SCHUS A'RTIFICIALIS, is a medicine lately introduced from Germany. Four ounces of nitrous acid are added to an ounce of oil of amber, constantly stirring them; and the result is a spongy mass, highly fetid, but resembling in smell nitrous oxide rather than musk. This preparation has been for some years known, and was introduced as a medicine for the hooping cough; but, even among the young, sanguine innovators, is now seldom heard of.

MO'SE HAZUA'NIA. See ENDICA.

MOSQUI'TÆ. A cutaneous disorder in the East Indies, sometimes produced by sweating, sometimes by the bite of an insect of this name, *mosqueta.* With the pimples an itching comes on, succeeded by an ulcer. When from sweating, the relaxant or diapnoic sudorifics are useful; and the itching is allayed by washing with vinegar in which nitre is dissolved, or with which lime-juice is mixed. See Bontius de Medicina Indorum.

MOSY'LLON, (μοσυλλον). See CINNAMOMUM.

MO'TA. See CASTANA.

MOTO'RES OCULO'RUM, *motorii oculorum communes, oculares communes,* and *oculo-musculares,* are the third pair of nerves from the head, which pierce the dura mater by the sides of the sella turcica, run through the foramen lacerum orbitale superius, to all the muscles of the eyes, except the obliquus superior and abductor of each. They likewise supply the levator palpebræ superioris, and send twigs to form the ciliary nerves, to the choroides and iris.

MOTO'RES OCULO'RUM EXTERNI, *oculares externi, ophthalmici externi, orbitarii,* and *oculo-musculares-externi,* are the sixth pair of nerves that go out from the head to the abductores oculorum, running forward on the side of the sella turcica, and getting into the orbit by the foramen lacerum orbitale superius. By the side of the sella turcica they give off what is called the beginning of the intercostal nerves, but they are more properly branches of the intercostal, which join these nerves.

MOTO'RII. See SPASMUS CLONICUS, and MOTORES OCULORUM.

MO'TOS, LINT, (μοτος). See CARBASUS.

MOUL-I'LA, seu MOUL-ELAVOU, the INDIAN LEMON-TREE, *bombax ceiba* Lin. Sp. Pl. 959, the fruit of which is both acid and aromatic, like the pepper. See Raii Historia.

MOUNT-SION WATER, a chalybeate, which seems to retain for a long time its ingredients, without decomposition. See an Essay on the Liverpool Spa Water, by T. Houlston, M. D.

MO'XA, (a Japanese term); *artemisia vulgaris* Lin. Sp. Pl. 1188, *musia-pattræ,* MOXA, is a soft lanuginous substance, prepared in Japan from the young leaves of a species of mugwort, by beating them, when thoroughly dried, to separate the fine lanuginous fibres, which are then formed into small cones. The

down on the leaves of mullein, cotton, and hemp, are not greatly inferior.

In the eastern countries, when the actual cautery is required, a little cone of the *moxa* is laid upon the part, previously moistened, and set on fire at the top: it burns down with a temperate glowing heat, and produces a dark-coloured spot, the exulceration of which is promoted by applying a little garlic. In Asia this kind of cautery is employed in preventing and curing many complaints, particularly chronic rheumatisms, gout, the morbus coxarius, and other painful affections of the joints. See Kæmpfer Amœnitates Exoticæ, p. 502, &c. Abbé Grosier's History of China.

MUCA'GO, (from *mucus, mucilage*). See MUCILAGO.

MUCHA'RUM. A barbarous word, signifying an infusion of roses, in warm water, reduced to a syrup, with sugar.

MUCIFLU'XUS ACTI'VUS, and PASSI'VUS, (from *mucus*, and *fluo, to flow*). See GONORRHŒA.

MUCILA'GO, (from *mucus*). A MUCILAGE; *mucago*, a viscid glutinous liquor, made by dissolving the gum, or the soluble part of gum-arabic, quince-seeds, &c. in water.

Young plants particularly abound in mucilage, and seem to consist of it almost wholly. In the mallows, linseed, and some of the cryptogamiæ, as the lichens, confervæ, and mushrooms, it is almost uncombined: in the milky plants it is in part separated, and united with oil and water. In every instance, it seems to be formed independent of light, which is rather an ingredient of the gluten. It is occasionally united with sugar, sometimes with oil, forming what are styled *fat* oils. It is insipid; soluble in water; insoluble in alcohol; coagulated by weak acids, and metallic solutions; not inflammable, but almost wholly exhaling in carbonic acid gas; changeable by the nitric acid into the oxalic, and by the muriatic into the citric acid. When diluted with water it becomes acid, and, in distillation, gives over the pyromucus acid.

The fluid separated from the glands about the joints, to facilitate their motion, is styled *mucilage*. See SYNOVIA.

MUCILAGINO'SA LIGAME'NTA. See CAPSULARIA LIGAMENTA.

MUCILAGINO'SA EXTRACTA, are what the French chemists have styled *extractive matter*. They are the mucilage of the plant, united with its proper juices, scarcely changed by heat.

MUCOCA'RNEUS, (from *mucus*, and *caro, flesh*); *myxo-sarcoma*, an epithet for a tumour, or abscess, partly fleshy, and partly mucous. Severinus.

MUCO'SÆ GLA'NDULÆ. See COWPERI GLANDULÆ; sometimes the name of the conglobatæ, to distinguish them from the glandulæ conglomeratæ, called VASCULOSÆ.

MUCO'SUM LIGAME'NTUM, a ligamentous cartilage, and full of mucus, situated betwixt each vertebra, admitting them to recede from, or approach nearer to, each other. To their elasticity it is owing, that at night a man is somewhat shorter than in a morning.

MU'CRONATI, (from *mucro, a sharp point*). Leaves or fruits of plants terminating in a point, termed mucronated. Mucro is also the sharp point of the heart.

MUCRONA'TUM OS. See ENSIFORMIS CARTILAGO.

MUCU'NA GUA'CU, *dolichos urens* Lin. Sp. Pl. 1020. The largest and most beautiful kind of phaseolus in Brasil; growing also in Malabar. The beans are poisonous, but easily rendered fit for food. See Raii Historia.

MU'CUS, (from the Arabic *muk*); *myxa*; *myxarn*; *myxas*; the viscid fluid, which covers the surfaces of all the membranes, exposed to any extraneous matter, as the skin, internal membrane of the mouth, nose, lungs, œsophagus, stomach, intestines, urinary passages, &c. It is thin at its first secretion, but more viscid apparently from its union with oxygen, colourless, insipid, inodorous, and incapable of stimulating; but if its secretion is suddenly increased, it becomes a watery acrimonious fluid of a whitish or a greenish-yellow colour, sometimes acquiring a smell, and occasionally the appearance of pus. In its natural state it contains some common salt and phosphat of soda, inviscated in albumen. From Dr. C. Darwin's Experiments, which Dr. Darwin himself has since claimed, it appears that, if any suspected matter be in separate equal portions, dissolved in vitriolic acid and caustic alkaline lixivium, water will precipitate any pus which exists. Pure pus will not dissolve in a dilute alkaline solution. But an experienced eye requires no such assistance.

MU'FFLE, in chemistry, a little oven, in which tests or cupels are placed to defend the metals in assaying from the contact of the fuel.

MU'GILIS, (*à muco*, from its viscidity). MULLET. *Mullus* Lin. Syst. Nat. the cephalus of Aristotle and the Greeks, the cestreus of Oppian and others. It is sufficiently soluble, and nutritious. The Romans valued a fish of this name highly for its exquisite relish, which was probably the sur-mullet of the western coasts of the channel, an exquisite dainty, which will not however bear carriage. See DIÆTA.

MU'LÆ. Pustules contracted either by heat or cold.

MULE, any production between individuals of different species; sometimes styled hybrid animals, or plants. The species must be nearly related, or generation will not take place, and mules of either kind are generally barren.

MU'LSUM, (from *mulceo, to refresh*). *Hydromeli*, HONEY and WATER. *Acratomeli* signifies wine sweetened with honey.

MULTICAPSULA'RES PLA'NTÆ, (from *multus* and *capsula*), such plants as have several pods of seeds succeeding each flower.

MULTI'FIDUS SPI'NÆ, MU'SCULUS, (from *multus* and *findo, to cleave*), lies under the spinalis; rises from the roots of the transverse processes, and runs to those of the spinal processes: it is commonly called *transversalis*, distinguished into the transversalis colli, dorsi, and lumborum. The last is also called SACER; q. v.

MULTIFO'RME OS, (from *multus* and *forma*). See CUBOIDES OS.

MULTISI'LIQUÆ PLA'NTÆ, (from *multus* and *siliqua*), plants which have after each flower many distinct, long, slender, often crooked seed-pods. It is the name of the twenty-third order in the Fragments, and

of the twenty-sixth in the *ordines naturales* at the end of the *genera plantarum*.

MUM. A bitter infusion in beer, to which the ingredients are added, generally while the beer is fermenting, though it is sometimes made extemporaneously by adding a bitter tincture. It is a German liquor, introduced to us from Brunswick, and is there said to be made in the following manner:

Sixty-three gallons of water are boiled to forty-two, and with this seven bushels of malt, a bushel of oatmeal, and as much of ground beans, are brewed in the usual manner. When the fermentation begins, three pounds of the inner rind of the fir, one pound of the tops of fir and beech, three handfuls of carduus benedictus, two of the flowers of rosa solis, a handful and half of burnet, betony, marjorum, avens, pennyroyal, and wild thyme, two handfuls of elder flowers, thirty ounces of cardamoms, and an ounce of bruised barberries, are added. The herbs and seeds, however, are put in the hogshead after the fermentation has continued a little time. When stopped, ten new-laid eggs unbroken are added, and it is kept two years before it is drank.

The English brewers chiefly use cardamoms, ginger, sassafras, elecampane, and for the colour, madder or red sanders. It is a warm carminative, useful in weak and gouty stomachs, used by common labourers as a warm stimulating liquor in the morning, chiefly to restore the tone of the stomach after excess. It was formerly drank after dinner to assist digestion, generally from high narrow glasses.

MU'MIA, (from the Arabic *mum, wax*). MUMMY signifies *pissasphaltum, bitumen*, or a brown fluid found in sepulchres, in which bodies embalmed have been preserved many years; sometimes a carcass dried by the sun and sands, of the consistence of horn, and light, called white mummies. In general, the embalmed bodies from Egypt, preserved with peculiar care, swathed in linen, impregnated with bituminous matter, and adorned with hieroglyphics, have this appellation.

Mumia medulla is the marrow of the bones. *Mumia elementorum*, a balsam of the external elements. (Paracelsus and Van Helmont.) *Mumia transmarina*, manna. Water deposited in a phial from breathing in it has the same appellation. *Mumia* sometimes means the subtle, spirituous, ethereal substance, supposed to be innate in every body, and to remain in some measure after death. The *mummy* taken from a human body is a resinous matter, hath a hardened, black, shining surface, is acrid and bitter to the taste, and of a fragrant smell. That which is particularly called *mummy* of the Arabians is a fluid liquor, obtained in sepulchres by exudation from carcasses embalmed with aloes, myrrh, and balsam.

MU'NDI A'NIMA, according to Plato, or rather his commentators, is a certain universal ethereal spirit, which exists perfectly pure in the heavens, as retaining its proper nature; but on the earth pervading elementary bodies, and intimately mixing with their minutest atoms, it assumes somewhat of their nature, and becomes of a peculiar kind.

"*Spiritus intus alit, totosque infusa per artus,*
"*Mens agitat molem, et magno se corpore miscet.*"

See ARCHÆUS, and ANIMA MUNDI.

MUNDIFICATI'VA, (from *mundifico, to cleanse*). Cleaning, detergent, purifying

MUNDIFICATI'VUM PARACE'LSI. ℞. Mellis Britannici terebinthinæ Venet. āā ℔ss. vitel quatuor ovorum coq. ad consist. ungenti et sing. unciis adde hydrargyri nitrat. rub ℥i.

MU'NDY-GUA'CU. See CATAPUTIA MINOR.

MUNGOS RADIX. *Ophiorrheza mungos* Lin. Sp. Pl. 213. Its root is considered as a specific against the bites of mad dogs, and of the serpent *naya*. Its seeds are accounted among the febrifuges.

MUOI'DES, (from μυς, *a muscle*, and ειδος, *likeness*). See PLATYSMA MYOIDES.

MURÆ'NA. The generic name of the eel. See ALIMENT.

MURA'LIS, (from *murus, a wall*), because it grows on walls. See PARIETARIA.

MU'RECI. A tree in Brasil, whose berries are purging. See Raii Historia.

MU'RIA, (from μυρω, *to flow*). BRINE, a solution of common salt: also a supposed acrimony in the fluids, resembling brine.

MU'RIAS, (from *muria*). MURIAT. Salt formed by the union of the muriatic acid with different bases.

MURIATIC ACID. See MARINUS SAL.

MURICA'TUS, (from *murex, a prickly fish*). The stalk of a plant covered with prickles like the shell of the murex.

MU'SA, (from the Arabic term *mauz*), *palma humilis, ficus Indica, bala, platanus*, the PLANTAIN-TREE, *musa paradisiaca* Lin. Sp. Pl. 1477. Though called a tree, it scarcely merits the name of a shrub, since it hath an annual stalk like a reed. The leaves are an ell long, and three spans broad; of which it is supposed that Adam and Eve made aprons. The fruit is of the shape of a cucumber, of a yellow colour, and a most delicious food, and resembles meal and butter. The stalk is cut down to obtain the fruit, the spikes of which sometimes weigh fifty or sixty pounds. The fruit, when roasted, is beat in water, and the juice, styled *mislaw*, is drank; and even the pulp, when dried and baked, may be used in the same way, to prepare the mislaw. It is found in all the eastern countries, and in Africa. See Raii Historia.

MU'SA FRU'CTU CUCUMERI'NO BREVIO'RI. See BANANA.

MU'SAM. See CASSADA.

MU'SCÆ HISPA'NICÆ. See CANTHARIDES.

MU'SCARI, (from the smell of its flowers). See BULBOS VOMITORIUS.

MUSCA'RUM FU'NGUS, (from *musca, a fly*). See BESONNA.

MUSCI'PULA, (from *musca*, and *capio, to take*). *Lychnis viscosa rubra, viscaria*. CATCH-FLY grows among corn, and is cultivated in gardens. Its seeds are said to be warm and diuretic. See Raii Historia.

MUSCI'PULA PRATE'NSIS. See BEHEN ALBUM VULGARE.

MUSCULA'RIS ARTE'RIA, (from *musculus, a muscle*). See SCAPULARIÆ ARTERIÆ.

MUSCULA'RIS VENÆ. A branch of the posterior or upper branch of the external jugular; it spreads in the muscles, which cover the scapula and joint of the

humerus. Winslow describes it also as rising from the axillaris.

MUS'CULI OBLI'QUI SUPERIO'RES NE'RVI. See PATHETICUS.

MU'SCULO CUTA'NEUS NE'RVUS. See CERVICALES.

MUSCULO'RUM COMMU'NIS MEMBRA'NA, MEMBRA'NA MUSCULO'SA. Winslow denies its existence; but, in fact, it consists of compacted cellular substance, which in finer ramifications penetrates between the muscular fibres: in some places this membrane is closely united to the proper membrane of the muscles.

MUSCULO'SI. A class of diseases, comprehending external or muscular inflammations.

MU'SCULUS. See MYTILUS and CETUS. In anatomy from *μυειν, to draw or contract*. LACERTULI, q. v. Muscles consist of those bundles of fleshy fibres by which the motions of all animal bodies are performed, and each is divided into the head, belly, and tail. The head is the part fixed on the immovable joint, called its origin, and is usually tendinous; the belly is the middle, fleshy part, which consists of the true muscular fibres; the tail is the tendinous portion inserted into the part to be moved, called the insertion; but in the tendon the fibres are more compact than in the belly of the muscle, and do not admit the red globules. The number and their nature are supposed not to differ.

The arteries, veins, and nerves, generally enter the middle of muscles, and ramify alike throughout their whole substance. The large arteries and veins run according to the direction of the muscular fibres; the less anastomose and run transversely; but a muscle seems to have a greater proportion of blood than is required for its nourishment, so that it probably assists in the performance of its functions.

The muscles are commonly attached to the bones, and the tendons are inserted into the substance of the bone; but when a muscle is fleshy at its insertion, it is only fixed to the periosteum. The muscles fixed to cartilages are attached to the perichondrium. Some are fixed to ligaments, as those in the fore-arm; others into membranes, as those of the eye; and others again into fleshy parts, as those of the tongue.

Muscles are either oblong, hollow, or mixt; the oblong are divided into the rectilinear, half penniform, the penniform, the complex penniform, and the radiated. The muscular fibres are united very firmly in tendons, to lessen the bulk near the joint, which would have obstructed motion, and been otherwise inconvenient, as in the hand. By this means also the fleshy part of the muscle is nearer the centre of motion; and injurious friction is avoided. The appendices of muscles are, the fascia, or aponeurosis, the annular ligament, by which the tendons of some muscles are confined, and the sacculi mucosi.

The more intimate structure of the muscles has not yet been ascertained. The appearance of fleshy fibres is well known; and these, we have said, terminate in white, shining, firm cords, called tendons. The tendinous are seemingly the continuation of muscular fibres, losing, with their more compact structure, the peculiar muscular appearance. Yet this is contradicted on authority that we cannot lightly pass by, and it is said that they are obviously distinct; that the muscular fibres are attached to, without being continued in, them; that they are arranged in a different manner, and inserted at angles more or less obtuse. On the other side, tendinous aponeuroses, diminishing in thickness, constitute internal aponeuroses, giving tension to the fibres, as external aponeuroses sometimes give points of attachment, and almost an origin, to muscles; nor can we deny that tendinous fibres may be inserted into muscles on one side, as they are to ligament or bone on the other. At the same time it is certain that tendons partake of none of the peculiar structure of muscles, and that they are more nearly allied to the simple solid.

Muscular fibres are, when carefully washed, white, solid, and parallel. It is said that they are indefinitely ramified; an opinion, observes Mr. Carlisle, which an hour's labour at the microscope will refute. On these fibres arteries very minutely ramify; it is said, also, with the same indefinable minuteness: but it is at least certain, that before they escape the assisted sight they cease to give off branches. The minuter ramifications of the nerves cannot be ascertained. They enter into the muscle often at right angles, at least considerable ones; and when they spread on the fibres they lose their external coverings, and become transparent, so that we can no longer follow them. The fibres are connected by a cellular substance of different fineness in different muscles, but apparently of a more delicate texture, as the muscular fibre itself grows more minute, and has very seldom any adipose accumulations.

From these facts, which are now well established, we may reject the opinion of the primitive muscular fibre being globular, spheroidal, or rhomboidal, of its being wholly nervous or arterial. We own that we have indulged the language of calling muscular fibres the sentient extremities of nerves, and occasionally spoken of them as such; but if we have at any time expressed such an opinion, we beg leave, on mature reflection, to disclaim it. If there were no other arguments, the proportion of bulk in the vessel and nerve, compared with that of the muscle, oppose it: the peculiar structure and other properties of the muscles are equally adverse.

Though muscles are evidently fibrous and red, we must not deny a muscular structure where we do not find red fibres. The lymphatic system is probably muscular; for the fibrous structure is discoverable in the thoracic duct of a horse; and Mr. Home has rendered it probable that the fibres of the crystaline lens are equally so. At least we know, in numerous instances, that muscular contraction takes place where fibres are scarcely, if at all, discoverable, and where the red muscular structure is not found. Yet, as a part of the fibrous structure, the muscles form a part of the primordial germ. We see their influence at the first dawn of life in the punctum saliens: their action is coeval with animation.

These facts at once disprove the theory of Girtanner, who attributes muscular contraction to a kind of explosion, or effervescence, arising from the oxygen in the blood uniting with the azot, the hydrogen, and carbon of the muscles; for contraction exists when azot is not yet formed. We admit that azot, which furnishes

the zoonic acid, is chiefly discovered in the muscles; that their fluids are the most completely animalised of the whole system; that in animals who lead the most active lives, and in the organs most constantly exerted, it is most frequently found, as in wild animals, the red deer, and hares, the pectoral muscles of the moor fowl, &c.; but this seems the effect rather than the cause of the contraction, as we shall soon find; and, on the contrary, the action of a lymphatic, for instance, is steady, and constant; that of the heart of the embryo rapid and unremitted, while each is transparent.

On what then does this action depend? certainly on one of those intricate states connected with life, which we cannot even approach by conjecture. We have nothing analogous to compare it with, nothing which possesses the same properties in different circumstances to enable us to divest it of the adventitious circumstances. We must content ourselves, therefore, with endeavouring to ascertain its phenomena and its laws.

We know, from various experiments, that a free circulation through the arteries of muscles is necessary to their contraction; for tyeing the artery will render a muscle paralytic; and even tyeing the inferior vena cava above the iliacs, we are told by Kauw Boerhaave, will render the muscles of the posterior extremities incapable of contraction. The free access of the nervous influence is equally necessary; for though we are vaguely told of animals without a nervous system possessing muscular power, none, which have been examined with care, are found to want this source of motion.

A muscle in action increases in absolute weight, in density, and in its power of resistance. That it increases in bulk may be doubted, for experiments are contradictory; and while the middle or the belly of the muscle is evidently enlarged, the diminution of its length compensates for the increase. Though the tendon is a firm, substantial cord, it is sometimes broken by muscular exertion; while the organ is uninjured, and the patella, as well as other bones, are fractured by a violent jerk, or a sudden, peculiarly violent, action of the muscles. It is, however, recorded, that the muscles themselves are sometimes ruptured, particularly the recti abdominis in tetanus, and the gastrocnemii in cramps; and as it is difficult to suppose that increased cohesion should occasion a solution of cohesion, it has been suspected that this is the effect of the action of antagonists, or of unequal excitement. Neither, however, could be the cause in the present instances, nor is it difficult to conceive that the material may be ruptured by excess of power. Cord entwined with great force round any body, and then wetted, will be broken by the violent contraction. The choutchouc, a very elastic substance, is diminished in specific gravity by extension.

Muscular action then consists in an attraction of the parts of each fibre in a manner peculiar to animated nature. It is not a contraction in every dimension, since it would be then attended with diminished volume; but in length only attended with a proportional increase of bulk, so as to preserve the absolute volume unchanged, or perhaps somewhat increased. The force exerted by this contraction is enormous. It was calculated, however, by the mechanical physicians in the most extravagant manner, on foundations almost wholly chimerical; but on better grounds, from the very disadvantageous insertion of the muscles, which we shall soon enlarge on, to surmount a resistance of fifty pounds, the deltoid, it is said, must exert a force equal to 2568 pounds. In general, it appears that the force with which a muscle contracts is in proportion to the number of its fleshy fibres, and the extent of the surface to which these fibres are attached; but its degree of contraction, or the extent of its motion, is in proportion to their length. The limits of contraction differ in the long and in the circular muscles; for the former do not contract more than one-third of their length; but the circular fibres of the stomach, which in their utmost dilatation may be expanded to a foot in circumference, will, after long fasting, be reduced to a circle of an inch. It must, however, be added, that in circular muscles no fibres pass completely round: bundles of fibres are collected, and end at different points, while some begin where others end. Each may, therefore, admit only of a limited contraction, while the dilatation just mentioned may be the sum of the whole.

Muscles are usually attached to bones near their joints, and, running almost parallel with the bone, are inserted at very acute angles. They are consequently levers of the third kind, situated between the fulcrum and resistance. By this contrivance, much force is lost to attain velocity, and to avoid deformity; for the muscle would start out in its action, if conducted in any other manner, and this starting would be in proportion to the celerity of the action of the resisting part. At present, the hand, for instance, sweeps through a large circle with great velocity, while the muscles, which raise the fore-arm, viz. the biceps and brachialis internus, swell to a degree scarcely perceptible. In the force supposed to be exerted by the deltoid, a great proportion acts only in pressing the humerus to the shoulder, according to the common doctrine of the composition and resolution of forces. Another loss of force arises from the oblique insertion of the fleshy fibres into the tendinous expansion, which pervades them: but, with the Author of Nature, power as well as life is obedient to the divine fiat, and each is profusely diffused: yet all this has been resolved into jarring atoms, molecules organiques, and animated filaments! Various contrivances, however, appear to have been adopted to lessen this considerable loss of power. In general, the extremities of the bones are enlarged, so that the muscle is removed from the parallelism, the tendons of the smaller line of direction of the bones are separated, or the angles at which they are inserted are augmented. Sometimes, for the same purpose, the tendons or the muscles themselves are reflected over pulleys. When the limb begins to move, the angle of insertion is, of course, increased.

The action of muscles is never intermitted, and only diminished in the sleeping state. This action arises from a less degree of that power which moves the limbs, and is styled, by Haller, the vis insita; by later authors irritability, or tonic power. When muscles are not exercised, this power is very slightly exerted; but, by the position which the limbs assume, we discover the relative strength of the antagonising muscles. Thus we find the flexors stronger than the extensors; for during sleep the head falls forward, the body, legs, arms, and fingers are lightly bent. We see the cause of

this strength, when we find that the flexors have stronger and more numerous fibres; that their insertion is farther from the centre of their motions, and under a larger angle, which, as we have remarked, must increase when flection has began. This superiority of the flexors bends the fœtus in utero into a round ball. When the infant is born, the same superior power of the flexors continues, though in a less degree, and frequent pandiculations are required, to give activity and energy to the extensors, which they again lose in advanced age. When we awaken from a sound sleep the same yawning pandiculations occur; and Barthez fancifully refers the crowing of the cock, and the fluttering of his wings, to a similar purpose. It is always useful to examine, in diseases, the position of the limbs during sleep, particularly of children. If they deviate from the bent to a more straight position, there is generally some irregularity in the state of tone, and, of course, in the vital influx.

It is supposed by some authors, that the vital influx is not necessary to the contraction of muscles, but that they possess irritability as a quality, and this is the strict meaning of the vis insita of Haller; but we do not, in any instance, find this, for any time, unconnected with life. Irritability is, indeed, lost at different periods in different organs; for some, particularly the heart, soon lose it, while the voluntary muscles retain it; and apparently those which derive their nerves from the intercostal system lose it sooner than those whose nerves originate from the base of the cerebrum. Irritability is also exhausted in the agonies of death, and retained for a longer time when the death has been sudden and violent, except it happen from lightning. On this principle fish are crimped; for the muscles are cut across, while the irritability remains, and the muscular portions contract so as to give greater firmness to the flesh. To preserve this irritability, the fish receives a blow on the head as soon as it is taken from the water when the operation is performed, is washed in hard water, whose astringency, from the selenite it contains, assists the contraction. Irritability is also soon destroyed by narcotic poisons, either if partially applied, or, more generally, if life is extinguished by their means. The power of contraction, by volition, by association, by a stimulus on the brain, or on the nerves in their course, as it acts through the medium of the nerves, is called the *nervous power*; though when volition only is the cause, Dr. Cullen chooses to call it the *animal power*. The *tonic power*, as we have said, is that state of constant contraction owing to life, or perhaps to the action of antagonising muscles.

The state of muscles differs according to their vigour and their mobility. The first attends firm and robust, the second weak, constitutions. In the latter, muscular contraction frequently alternates with relaxation; and the greatest degree of this state is CONVULSIONS, vide in verbo. Vigorous contraction is less subject to alternate with relaxation; but such alternation is common to muscles in general, and found in every long muscle but among the round muscles in the heart, the intestines, probably also the stomach only. Spasm is not a disease of vigour, but of a high degree of irritation, and owing to an irregular influx of the vital power. We have enumerated association among the stimuli, rather from a loose analogy than with strict pretensions to accuracy, including, in this way, each source of muscular action.

Muscular irritability is exhausted not only by exercise, by narcotic poisons, and every kind of excitement, but by mental exertions also; and the student, constantly at the midnight lamp, finds it greatly diminished, not only by his mental exercise but by disuse. Violent emotions have a similar and more sudden effect. At the time we observe that violent muscular action diminishes, and occasionally destroys, sensibility. Thus, in battle, the soldier does not feel his wound; and the juggler violently contracts the muscles of his leg when he runs the pin into them. These facts, which might be supported by many analogous ones, seem to show that the sentient and moving powers are more closely connected than physiologists have supposed.

The bulk of a muscle is chiefly made up of cellular substance and blood-vessels. When each is separated, the true muscular fibres occupy a very small space, and the muscles are found equally, often more, distinct in the emaciated invalid than in the robustest subject. We may conclude from hence, that muscular fibres are not destroyed nor produced; and we think the opinion is supported by observation. If a muscle is destroyed, the limb remains useless, or at least partially useful, by the assistance of those which remain. If cut through, the fibres are united by a compact cellular substance. Yet late authors have been fond of employing the analogy between the fibrin and the muscular fibre, particularly when they found the fibrin contract by the galvanic stimulus; and, in support of it, they quote an observation of Haller, that the generality of muscular arteries are curved on themselves, in a remarkable manner, when entering into the muscles. This structure, they think, must retard the blood, and facilitate the separation and deposition of the fibrin. The muscular flesh, they add triumphantly, is the most azotic fluid of the whole system, and the fibrin the most animalised portion of the blood. If, however, the fact be as just stated, that muscular fibres are not reproduced, this necessity no longer appears, and we know not that contraction is connected with azot. Irritability and sensibility are both, however, apparently peculiar to a fibrous structure; and we know so little of the means by which the nervous influence is connected with the nerve as a simple solid, that we may suppose this union in part depending on fibres, and, when these are formed, that they may share a portion of this incomprehensible power. Thus, then, the fibrin may enjoy a certain portion of life; thus the muscles may be more directly a part of the nervous system. Yet we have disclaimed both opinions; and, though the course of our argument has led us to this view of the subject, we must add that such reasoning appears loose and precarious. See BLOOD, vol. i. p. 357, &c. and NERVUS.

Before we proceed to a general enumeration of the muscles, we must premise, that the most fixed point is styled its origin, the more moveable its insertion. In the motion, however, of limbs, the peculiar muscles are not exclusively employed, since some distant ones are exerted to fix the part from which the muscles originate. In other circumstances the fixed point becomes

occasionally, though in a less degree, the moveable; and for this reason we have styled the origin the *most* fixed point. In some instances the part from which the muscle originates is equally moveable with that into which it is inserted.

Muscles of the Head.—The for eheadis wrinkled and drawn upwards, as are also the eyebrows by a broad thin muscle, *occipito frontalis,* which rises at the back-part of the skull, and covering the head, runs down the forehead, to be inserted into the skin of the eyebrows.

The eyebrows are drawn towards each other, and the skin of the forehead pulled down and made to wrinkle, as in frowning, by a pair of small muscles, *corrugatores supercilii,* which rise from the root of the nose, and are inserted into the inside of the eyebrows.

The ear is moved by eleven small muscles. The first three are called common, because they move the whole ear. The next five are termed proper, and only move the parts to which they are connected; while the other three are internal, to move the small bones situated within the ear.

The eyelids are closed by a muscle, which, rising from the inner angle of the orbit or cavity in which the eye is embedded, covers the under eyelid, then surrounds the outer angle, and passing over the upper eyelid, descends to be inserted, by a short, round tendon, near to its origin, *orbicularis palpebrarum.*

The eye is opened by a muscle, which, rising from the inner and upper part of the socket, is inserted into the upper eyelid, to draw it upwards, *levator palpebræ superioris.*

The eyeballs are carried through all their motions by six small slender muscles to each. They arise from the bottom of the socket, and are inserted into the outer coat of each eyeball at different points. Four of these move the eye upwards or downwards, to the right and to the left; while the two remaining muscles give oblique directions to the eye, at the same time protruding it; and all acting in quick succession, enable the ball of the eye to describe a complete circle. See OCULUS.

The nose is affected by several small muscles of the face, but only one muscle on each side is proper to it. This muscle straightens the nostrils, and corrugates the skin of the nose, *corrugator naris.*

The mouth and lips are moved by nine pair of muscles, *levator labii superioris alæque nasi; levator anguli oris; zygomaticus major; buccinator; depressor labii superioris alæque nasi; depressor anguli oris; depressor labii inferioris; levator labii inferioris; orbicularis oris;* which arising from the contiguous bones of the face, are inserted into the lips and angles of the mouth: and from the termination of these muscles a tenth is formed, which surrounds the mouth like a sphincter, and closes it, by drawing the lips together. It is from the actions of these muscles on the mouth, particularly at its corners, that the emotions of the mind are expressed, and the predominance of particular feelings in characters is indelibly stamped: unless in those individuals whom nature has gifted with an unimpressible dulness of character, or in whom the more delicate lines are filled up by too great fatness.

The lower jaw has four pair of muscles for pulling it upwards, as in manducation, viz. two pair seen upon the outside of the face, and two pair concealed by the angles of the jaw. The first pair arise from the sides of the skull, above the temples, whence they are called temporal muscles, *temporalis;* and then descending under the bony bridges of the cheek-bone, are inserted into the lower jaw near its ends. The second pair arise, at each side, from the under edge of the bony bridge, and descending along the cheek, are inserted into the angle of the lower jaw, *masseter.* These four muscles act powerfully in pulling the jaw upwards, and when we bite, may be felt swelling out in the flat part of the temple, and upon the back part of the cheek. The other two pair of muscles arise from the base of the skull, and are inserted into the lower jaw internally, for enabling this bone to move from side to side, the more effectually to grind the food, *pterygoideus internus* and *externus.* The lower jaw is pulled downwards by muscles, which extend between it and the bone of the tongue, and which also serve to raise the throat upwards.

Muscles of the Neck.—The neck is covered with numerous and complicated muscles: those on the fore-part or throat extend some between the head and upper part of the trunk, *latissimus colli* and *mastoideus*: others between the lower jaw and the os hyoides; more between this bone and the cartilages of the throat; while numerous other small muscles are situated between these cartilages and the trunk; and also about the root of the tongue and the back-part of the mouth. Their names are sufficiently descriptive of their situations, viz. *omo-hyoideus; sterno-hyoideus; hyo-thyroideus; sterno-thyroideus; crico-thyroideus; digastricus; stylo-hyoideus; mylo-hyoideus; genio-hyoideus; genio-glossus; hyo-glossus; lingualis; stylo-glossus; stylo-pharyngæus; circumflexus; palati; levator-palati; palato-pharyngæus; constrictor isthmi faucium; azygos uvulæ; constrictor pharyngis superior, medius & inferior; crico-arytænoideus lateralis & posticus; arytænoideus obliquus & transversus; thyreo arytænoideus; arytæno-epiglottideus;* and *thyreo-epiglottideus.* Their uses are, viz. to bend the head forwards; to open the mouth by pulling the lower jaw downwards; and to move the parts concerned in deglutition and speaking.

The muscles on the back-part of the neck are rather portions of the great muscles, which cover the back, than distinct bundles of fibres; but, having some of their extremities fixed to the back-part of the skull, and also to the hinder portion of the spine of the neck, are intended to move those parts, drawing them backwards and sideways.

Muscles of the Trunk.—Those are principally the muscles which cover the breast; those which constitute the fore-part and sides of the abdomen; and the great muscles that are spread over the back.

The muscles of the back are numerous and large: they arise from the whole length of the spine or back-bone, having their originating fibres firmly fixed to the numerous processes or handles of that bone; from the upper and posterior edge of the pelvis; and also, some portions from the back-part of the skull; and from these different organs, they spread over and cover the back of the trunk, and run to be inserted, some into the base of the arm, others into the spine at a distance from their origin, and the remainder into the ribs and back-part of the skull. They consequently not only cover and protect the whole back part of the body, but also serve to pull the head backwards, move the whole arm,

assist respiration by acting on the ribs, and to raise the body by extending the spine. These are, the *trapezius*, or *cucularis; rhomboideus; latissimus dorsi; serratus inferior & superior posticus; levator scapulæ; splenius; complexus; trachelo mastoideus; rectus capitis posticus major & minor; obliquus superior & inferior capitis sacro-lumbalis; longissimus dorsi; spinalis & semispinalis dorsi; multifidus spinæ; semispinalis colli; scalenus; interspinalis & intertransversales.*

The cavity of the abdomen is completed at its fore-part and sides by a few broad and thin muscles, which extend from one bone to the other, having their ends firmly fixed to the edges of these bones; and passing over each other, to constitute walls for covering in and containing the bowels. These are *obliquus externus* and *internus; transversalis; rectus abdominis* and *pyramidalis.* These muscles also assist respiration by helping to expel the air from the lungs: and they contribute to the movement of the body, by bending it forward as in bowing, and by raising the pelvis.

The breast is covered by a few broad and strong muscles, which arise from the whole length of the breast-bone, and form the fore-part of the ribs, and running from each other over the chest, are inserted into the shoulder for moving the limb forward, *pectoralis major; serratus magnus; levatores costarum.*

The ribs are raised, and the cavity of the chest enlarged, during inspiration, by eleven double rows of small muscles on each side. They grow out from the lower edge of one rib, and are inserted into the upper rim of the next: *intercostales externi & interni; sterno costales:* at the fore-part of the neck, close to the vertebræ, are the *rectus capitis internus, major, minor & lateralis; longus colli.*

Muscles within the Body.—The principal one is called the diaphragm; it is a broad thin muscle, occupying partly a horizontal position, when the body is erect; but inclining downwards towards the back, and dividing the trunk of the body into the two great cavities, the thorax and the abdomen. It arises from the lower end of the breast-bone; from the cartilages of the seventh, and of all the inferior ribs on both sides; and from the second, third, and fourth lumbar vertebræ; and from these origins its fibres run, like radii from the circumference to the centre of a circle, to be inserted into a broad flat tendon, which is situated in the middle of this muscle. The diaphragm is the principal agent in respiration, as shall be more fully described under that head.

The other muscles within the body arise from the sides of the lower end of the back-bone, and from the inner surface of the pelvis, and passing down to be inserted into the thigh-bone, a little below its head, they help to turn the toes outwards, and to bend the thigh; or when the limb is fixed, they assist in bending the body, *psoas parvus & magnus; illiacus internus; quadratus lumborum.*

Muscles of the superior Extremities.—These anatomists divide into the muscles that are situated on the shoulder-blade, on the arm, on the fore-arm, and on the hand.

The muscles situated on the shoulder-blade are called muscles of the arm, because, though they arise from the former bone, which serves them as a base, yet they are inserted into the bone of the arm, to effect its movements: the same observation holds with respect to the other divisions of these muscles.

The arm then is moved by seven muscles which arise from the shoulder-blade, and passing over the joint are inserted into the arm-bone at its upper and middle parts. The *deltoides; supra & infra spinatus; teres minor & major; subscapularis & coraco-brachialis;* these, together with the muscles coming from the back and breast, already described, complete the motions of this part of the limb.

The fore-arm is moved in flexion and extension by three muscles, which arise from the upper part of the arm-bone; run down its whole length, and constitute its fulness and figure: they then pass over the elbow joint to be inserted into the upper ends of the two bones of the fore-arm. These are the *biceps flexor cubiti; brachialis internus & triceps extensor cubiti.*

The hand is moved at the wrist by six muscles; three of these arise from the upper part of the fore-arm, and descending along its whole length, are continued over the wrist, and are inserted into the hand close to this joint; they bend the hand, and are consequently called its flexors, *flexor carpi ulnaris; palmaris longus & flexor carpi radialis.* The three extensors, so called because they extend the hand, and bring it backwards, arise from the lower end of the arm-bone, and passing down the fore-arm also, run to be inserted into the back of the hand just beyond the wrist, *extensor carpi radialis, longus & brevis; extensor carpi ulnaris;* all these muscles, before they reach to the wrist, become slender tendons, which is the cause of the tapering of the fore-arm from about its middle to the hand

Besides flexion and extension, the hand has a circular kind of motion, called pronation and supination: the former takes place when we turn the palm down, as upon a table; the latter when we turn the palm upwards; and both motions are produced by four short muscles which extend obliquely across from one bone of the fore-arm to the other, and roll the radius upon the ulna, carrying the wrist round in circles, *supinator longus & brevis; pronator radii teres & quadratus.*

The fingers are principally moved by two flexors and one extensor. The former muscles arise from the upper part of the fore-arm near the bend, and running down towards the wrist, send off four round tendons each; which passing over the palm of the hand, are inserted, the one set of tendons into the upper part of the second bone, and the other into the last bone of each of the four fingers: the latter set of tendons pass through slits in the former, which help to bind them down, when the fingers are bent. The extensor muscle arises above the elbow, passes down the fore-arm, and also splits into four round tendons, which can be plainly felt on the back of the hand, and are inserted into all the bones of the four fingers for extending them.

The other movements of the fingers, and those of the thumb, are performed by muscles, chiefly situated upon the hand, and which, together with those we have described, complete the motions of these parts. Except the *indicator* which extends the four fingers, the names express their uses. The *interossei interni & externi* extend the fingers, and move them in different directions. The *lumbricales* bend the first and extend the two last joints of the fingers.

Muscles of the inferior Extremities.— The great

muscles which move the thigh all arise from the pelvis, or the lower part of the trunk; covering, and also giving plumpness and shape to the external surface of these parts, they descend over the hip-joint, to be inserted into the thigh-bone below its articulating head: by the action of these powerful muscles the thigh is carried through all its motions. These are the *glutæi*; *pyriformis*; *gemini*; *obturator internus, & quadratus femoris*; *pectinalis*; *adductor longus brevis & magnus femoris*; *obturator externus*.

The leg is moved by eleven muscles, which arise partly from the pelvis, and partly from the upper end of the thigh-bone: they descend along this bone, giving fulness and shape to the thigh, and passing over the knee-joint, are inserted into the bones of the leg; the extensors into the upper edge of the knee-pan, for extending the leg, and the flexors into the posterior sides of the long bones of the leg, a little below their heads: the tendons of these muscles form the inner and outer ham-strings. *Biceps flexor cruris*; *semitendinosus*; *semimembranosus*; *tensor vaginæ femoris*; *rectus*; *sartorius*; *gracilis*; *vastus externus & internus, cruræus & poplitæus*. They bend the leg.

The foot is moved by three extensors, and by four flexors. The extensors arise, the two first by double heads from the lower end of the thigh-bone, near the bend of the knee: these heads soon after unite into the great fleshy bellies, which, swelling out, form the calf of the leg; but decreasing where the leg begins to grow small, they each give off a broad thin tendon, which also uniting, form the tendon of achilles, to be inserted into the extremity of the heel. Those powerful muscles extend the foot by bringing it backwards, and are principally engaged in running, walking, leaping, &c. The third extensor of the foot arises also from the lower end of the thigh bone, and descending by a long, slender tendon, is inserted into the heel, to assist the former: but this muscle is sometimes not to be found in the human subject. *Gastrocnemius internus & externus*; *plantaris*.

The four flexors arise, the two first from the upper part of the tibia, or principal bone of the leg, and continuing fleshy about half way down that limb, send off two round tendons, which pass under the inner ankle, and are inserted into the bones of the foot. The other two flexors of the foot arise from the superior part of the fibula or smaller bone of the leg, and sending off two round tendons, which pass under the outer ankle also, are inserted into the bones of the foot. These assist the former in bending the foot by drawing it upwards. *Tibialis posticus & anticus*; *peronæus longus & brevis*.

The toes have two extensors and three flexors. The first extensor arises from the upper part of the leg, and descending to the ankle, splits into four round tendons, which run forward upon the upper part of the foot, where they can be plainly felt; and are inserted into the four small toes to extend them: the other extensor arises from the heel, and running forward upon the foot, also splits into four tendons, to be inserted into the toes likewise, and to assist in extending them.

The flexors of the toes arise, the first from the under and back part of the heel, and running forward along the sole of the foot, sends off four tendons to be inserted into the second row of bones of the four smaller toes. The second flexor arises from the back part of the tibia below its head, and descending the leg, passes at the inner ankle to run along the sole of the foot, on the middle of which it splits into four slender tendons, which perforate the former, in the manner of those which bend the fingers; and extending beyond them are inserted into the extremities of the last joint of the four small toes. The third flexor assists the two former in bending the toes, and also draws them inwards. Besides these there are other small muscles which are situated upon the foot, and which with those coming from the leg to be inserted into the great toe, complete the movements of these parts. These muscles are sufficiently known by their names, and what has been said on those of the hand.

Thus we see that the muscles or flesh cover and spread over the whole frame of bones, connecting and securing its different divisions and parts; and not only producing all its movements, but also giving to it fulness, shape, and beauty.

See the Croonian Lectures in various volumes of the Philosophical Transactions; Haller's Elementa Physiologiæ; Brown on the Muscles; Winslow's Anatomy; Cowper's and Albinus's Tables of the Muscles; Innes and Douglas on the Muscles.

MU'SCULUS ANTE'RIOR MA'LLEI, or MU'SCULUS EXTE'RNUS AU'RIS DUVE'RNII; *anterior malleolus*; is placed in a fissure on the temporal bone, above the glenoid cavity, where the lower jaw plays, runs inward, and is inserted into the Ravian process of the malleus irregularly forward from the incus; and by taking off from the vibratory motion of the bones, it is supposed to fit the ear for receiving weaker sounds.

MUS'CULUS EXTE'RIOR. See ABDUCTOR OCULI.

MU'SCULUS INFE'RIOR. See DEPRESSOR OCULI.

MU'SCULUS TU'BÆ NO'VUS VALSA'LVÆ. See CIRCUMFLEXUS PALATI.

MU'SCUS CLAVATUS. See LYCOPODIUM.

MU'SCUS CUMATILUS. *Lichen apthosus* Lin. Sp. Pl. 1616, is supposed to be anthelmintic, and is given in infusion or decoction to destroy worms, or to remove aphthæ. The dose of the powder is twelve grains to infants. Its smell is highly fetid and disgusting.

MU'SCUS ARBOREUS, *lichen plicatus* Lin. Sp. Pl. 1622, *usnea officinarum*. It is slightly astringent, used to stop hæmorrhages, and by the Laplanders to relieve excoriations from travelling.

MU'SCUS LAPIDEUS. See CORALLINA.

MU'SCUS PULMONA'RIUS. *Pulmonaria arborea*, OAK-LUNGS, and LUNG-WORT, is made up of flat, wrinkled, rough leaves, greenish above and ash-coloured underneath, with several round, reddish brown spots on the surface, in which the seed is supposed to lie. It hath a bitterish astringent taste, and grows spontaneously on the oak-tree.

MU'SCUS PYXIDATUS, *musculus pyxoides terrestris, lichen pyxidatus major; lichen cocciferus* Lin. Sp. Pl. 1618. CUP-MOSS, a species of lichen, growing on barren dry ground, with many hoary whitish-green, small leaves, spread on the surface of the earth, among which arise little, whitish, dusky, hollow cups, a quarter of an inch high, shewing neither flower nor seed. The decoction is reckoned a specific in the hooping-cough.

MU'SCUS SQUAMOSUS-TERRESTRIS. See LYCOPODIUM.

MUSTELA'NEI. See ANCI.

MU'STUM, (vinum mustum, i. e. novum, from μοσχος, tener). MUST, *gleucos*. This term, usually given to new wine, is now applied to the saccharine juice of several fruits, susceptible of the spirituous fermentation, and particularly of grapes, before its commencement. When boiled till one-third is consumed, it is called *caræenum*; when to one half, *defrutum*; *hepsema*; and when its fermentation hath been prevented, or prematurely suppressed by fumigation with sulphur, *stum*. See VINUM.

MU'STUS, (from μοσχος, *tener*). The WHITE CALX OF URINE, and whatever is young or tender, as *virga musta*, *agna musta*.

MUTELLI'NA. See MEUM ALPINUM GERMANICUM.

MUTI'LLA. The velvet ant of South America, highly troublesome from its sting. It is usually found in sandy places, runs very swiftly, and lies concealed under stones and flowers. There are many European species, but these are not troublesome.

MU'TITAS, (from *mutus*, *dumb*). DUMBNESS. The want of power to articulate words. Dr. Cullen places this disease in the class *locales*, and order *dyscinesiæ*, defining it an inability of articulating words. The species are,

1. MU'TITAS ORGANICA; when the tongue is taken away or injured.

2. MU'TITAS ATONICA, when the nerves are chiefly affected.

3. MU'TITAS SURDORUM, from early deafness.

MYACA'NTHA, (from μυς, *a mouse*, and ακανθα, *a thorn*; because its prickly leaves are used to preserve substances from mice). See RUSCUS.

MYA'GRO, and MYA'GRUM, (from μυια, *a fly*, and αγρευω, *to seize*; because flies are caught by its viscidity). *Myagrum perenne* Lin. Sp. Pl. 893. (See RAPISTRUM.) This plant hath a turbinated fruit, like an inverted pear, unicapsular, pressing in the stalk, containing one seed, with two empty cells, resembling in virtue the rapistrum, or raphanistrum.

MY'CE, (from μυω, *to wink*). A WINKING, CLOSING, or OBSTRUCTION. It is applied to the eyes, to ulcers, and to obstructions of the viscera, especially the spleen. In botany it means a fungus; in surgery the fungus which rises in ulcers or wounds. In some authors it signifies a yellow vitriol

MYCHTHI'SMOS, (from μυχθιζω, *to mutter* or *groan*). A sighing or groaning during respiration, while the air is forced out of the lungs. Hippocrates.

MYCONOI'DES, (from μυκτηρ, *a nostril*, and ειδος, *resemblance*). An epithet of an ulcer, which is full of mucus.

MY'CTER, (from μυσσω, *to blow the nose*). See NASUS.

MY'CTERES. See NARES.

MYDE'SIS, (from μυδαω, *to abound with moisture*). A disease of any part from redundant moisture, applied by Galen to the eyelids.

MY'DON, (from μυδαω, *to grow putrid*). Fungous flesh in a fistulous ulcer.

MYDRI'ASIS, (from μυδαω, diseases supposed to arise from too great influx of humours). Different complaints have been attributed to this cause, the distinguishing symptom of which is a dilatation of the pupil. These are amaurosis, hydrocephalus, worms, the adhesion of the uvea to the capsule of the crystaline, paralysis and spasm. See AMAUROSIS.

MYLA'CRIS, (from its resemblance to μυλη, *a grindstone*). See PATELLA.

MY'LE, (μυλη). See PATELLA and MOLA.

MYLO-GLOSSI, (from μυλη, *dens molares*, and γλωσσα, *lingua*). These muscles are small fleshy planes, situated transversely on each side, between the ramus of the lower jaw and the basis of the tongue; they rise from near the inner side of the dentes molares, and thence run to the basis of the tongue, but are often wanting.

MYLO-HYOI'DES, (from μυλη, *a grinding tooth*, and υοιδης, *the hyoid bone*); muscles which rise with a large basis from the inferior part of the lower jaw, and are inserted at the basis of the os hyoides.

MYLO-PHARYNGÆ'I, (from the same, and φαρυγξ, *the pharynx*), *cephalo-pharyngæi*. See GENIOPHARYNGÆI and PHARYNX.

MY'LON. See STAPHYLOMA.

MYOCE'PHALON, (from μυια, *a fly*, and κεφαλη, *the head*). A tumour in the uvea of the eye, resembling the head of a fly. See STAPHYLOMA.

MYOCOILI'TIS, (from μυων, *musculus*, and κοιλια, *venter*). An inflammation of the muscles of the belly. (Vogel.) See INFLAMMATIO MUSC. ABDOMINIS.

MYOLO'GIA, (from μυς, *a muscle*, and λογος, *sermo*). A treatise on the muscles.

MYO'PIA, MYOPI'ASIS, (from μυω, *to shut*, and ωψ, *the eye*). SHORT SIGHT; *dysopia dissitorum* of Cullen; *nuciositas*, because the eyes are generally partly closed. This disease is owing to the excessive convexity of the crystaline, by which the rays, unless the object is placed close to the eye, are united before they reach the retina; consequently vision must be indistinct. This convexity may arise from a beginning hydrophthalmia, or a too copious secretion of the aqueous humour; from a distension of the axis of the eye, in consequence of habit; from a natural (often an hereditary) convexity of the anterior curvature of the crystaline; from the density and, in consequence, the increased refractive power of the cornea. The increased convexity of the cornea is not uncommon in the infant state. The concavity of the spectacles must be proportioned to the sight, and myopes should begin with the least concave glasses. When they read they should never use them. See AMBLYOPIA, and OCULUS.

MY'OPS. Short-sighted person.

MYORE'SHALON. The uvea growing over the sight.

MYO'SIS, (from the same). A contraction of the pupil, not enlarging in darkness. This sometimes arises from spasm, occasionally from paralysis, and in the internal ophthalmia, or from wounds, from inflammation, when it is, perhaps, ultimately referable to spasm. It is sometimes like the myopia acquired, sometimes hereditary.

MYOSI'TIS, (from μυς, *a muscle*). Rheumatism, particularly when it affects the muscles of the limbs proceeding from the joints. (Sagar.) See RHEUMATISMUS.

MYOSU'ROS, (μυς, *a mouse*, and ουρα, *a tail*; from its resemblance), *cauda muris*, *holosteum*, *holostes*, *ranunculus*, *myosurus minimus* Lin. Sp. Pl. 407. MOUSE-

TAIL. The leaves are gramineous; it flowers in May, and grows in the highway, resembling in virtue the plantain.

MYOTO'MIA, (from μυς, *a muscle*, and τεμνω, *to cut*) A dissection of the muscles.

MYRE'PSICUM OLEUM. See BEN.

MY'RICA, (from the Hebrew, *marah*). See TAMARISCUS.

MY'RICA GALE. See MYRTUS BRABANTICA.

MYRIOPHYLLON. See MILLEFOLIUM.

MYRI'NGA, MYRINX. See AUDITUS.

MYRI'STICA NUX, (from μυρον, *an odoriferous ointment*; named from its sweet smell). See NUX MOSCHATA.

MYRME'CIA, (from its being the size and shape of μυρμηξ, *a pismire*). A soft, often a moist, wart, about the size of a lupine, with a broad base, growing on the palms of the hands, or on the soles of the feet, deeply rooted, and painful.

MYROBA'LANI, (from μυρον, *an ointment*, and βαλανος, *a nut*), MYROBALANS, a dried fruit of the plum kind, brought from the East Indies, of which three kinds are brought from Bengal, *faba Bengalensis, Cambaia*, and *Malabarica*. (See ADIPSOS.) They have been recommended as somewhat astringent and tonic, but are not now in use. Myrobalanus means *nux*, or *glans unguentaria*, a NUT or ACORN, fit for making precious ointments; for, from the myrobalans described by Dioscorides, Pliny, and Galen, they used to express a fragrant oil used in ointments. All the different kinds, which we hasten to describe, are probably varieties of the *phyllanthus emblica* Lin. Sp. Pl. 1393.

MYROBA'LANI BELLI'RICI, *bellergi, bellegu*, BELLIRIC MYROBALANS, are of a yellowish grey colour, and an irregularly roundish or oblong figure, about an inch long, and three quarters of an inch thick.

MYROBA'LANI CHEBULÆ resemble the yellow sort in their figure and ridges, but are larger and darker coloured, inclining to brown or blackish, and with a thicker pulp.

MYROBA'LANI CITRI'NI, vel FLAVI, are somewhat longer than the belliric, have generally five large longitudinal ridges, and as many smaller between them, somewhat pointed at both ends.

MYROBA'LANI E'MBLICI, *ambegu*, are of a dark, blackish grey colour, roundish, about half an inch thick, with six hexagonal faces opening from one another.

MYROBA'LANI I'NDICI, vel NIGRI, *asuar*, are of a deep black colour, oblong, octangular, differing from all the others in having only the rudiments of a stone, and supposed to have been gathered before maturity.

All the sorts have an unpleasant, bitterish, austere taste, strike a black colour with a solution of vitriol, contain tanin, are gently purgative and astringent. The dose in substance is from ʒi. to ℥ss. in infusion or decoction from ℥ss. to ℥i. ss. Water extracts their styptic virtue, and the extract is astringent. The *faba Bengalensis*, or the Bengal bean, is an abortive fruit of the myrobalans, round, flattish, wrinkled, and of the size of a small fig, hollow in the middle, of an irregular shape, hard, tough, brown outwardly, and blackish within, of but little smell, but an austere and astringent taste. It is vitiated by the puncture of an insect, by which it is often hollowed like a gall; but is a powerful astringent, and is said to be demulcent. See Raii Historia; Tournefort's Materia Medica.

MYROBALANUS ZEYLA'NICUS. See ELEMI.

MY'RON, (from μυρω, *to flow*). An ointment, medicated oil, or unguent.

MYROPHY'LLON. *Millefolium aquaticum*. WATER FENNEL, grows in marshy soils; flowers in April, and is styled vulnerary. See Raii Historia.

MYRO'XYLON, (from μυρον, *an ointment*, and ξυλον, *wood*; because it flows from a tree). See PERUVIANUM BALSAMUM.

MY'RRHA, (from Hebrew, *mar, bitter*). MYRRH, *stacte, ergasma*, in the ancient designation, Z z. Dioscorides mentions a fatty species, *gabirea*. It is a gummy resinous concrete, brought immediately from Alexandria, Smyrna, and Aleppo, said to be a produce of the *scandix odorata*; found, according to Bruce, in that part of Africa to the south of the Straits of Babel-Mandel. When he inquired after the plant which produced it, they constantly brought him the branches of the *acacia nilotica*. Loueiro has told us that it is the production of a species of laurus, but this is improbable; and, from its sensible qualities, it seems rather to belong to the genus *amyris*. It is brought to us in globules, or drops, of various colours and sizes. That of a reddish brown colour, not verging too much to a yellow or black, uniform on the outside, internally speckled or streaked with white, semicircular striæ, clear and bright, somewhat unctuous to the touch, but not so tenacious as to stick to the fingers, is the best. If whitish, or dark, resinous, fetid, or mixed with impurities, it should be rejected.

This drug is subject to a variety of frauds; it is mixed with hard, shining, yellow pieces of a gum, void of smell or taste. Pieces of bdellium are found with it, known by their darker colour, their being soft within, and by their different smell and taste. Sometimes an unctuous gummy resin, of a moderately strong, somewhat ungrateful, smell, and a bitterish, very durable taste, obviously different both from those of bdellium and myrrh; at others, pieces of a hard, compact, dark-coloured kind of tears, less unctuous than myrrh, of an offensive smell, a most ungrateful bitterness, and of a very resinous nature, are mixed with it. The myrrh itself is sometimes blackish, gathered probably from old trees, and fitter for tinctures; or yellow, apparently from young trees. The latter easily dissolves in the mouth, hath a much more agreeable aromatic smell, and is preferable for pills, powders, and watery solutions. All the variety seems, according to Bruce, to arise from the age of the tree, and the period of collecting.

Myrrh is said to be balsamic, vulnerary, antiseptic, attenuant, and deobstruent; but its real virtues seem not to be clearly understood. It is a bitter, apparently of the narcotic kind, and in doses from ten to fifteen grains appears to be mildly corroborant, and gently sedative. That it promotes the secretions is doubtful, but its having been so frequently given as an emmenagogue seems to show that it has some power in promoting this discharge. We find it reprobated by the French physicians, as promoting bloody urine; and we have confessed some prejudice against it in hectics where hæmoptoe had occurred, or was dreaded. In cases of languid circulation and cachexy, it seems to be useful rather as a tonic than as a stimulant; and it seems oc-

casionally of service as an antispasmodic. In external sores it is a mild sedative, and frequently an antiseptic application; effects which perhaps recommended it to internal use in hectics. In doses of from half a dram to two scruples it is said to be stimulant; but such we have never given. In some states of low fever, however, it seems occasionally to act as a cordial.

It dissolves almost totally in boiling water; but as the liquor cools the resinous part subsides; and if the solution is evaporated to an extract, the bitter of this drug only remains. By distillation with a boiling heat in water, the whole of its flavour arises, partly impregnating the distilled water, and partly collected and concentrated in the form of an essential oil, in smell extremely fragrant, and more agreeable than the myrrh in substance; in taste remarkably mild, and so ponderous as to sink in water. Two or three drams of this oil are obtained from ℥xvi. of the gum. Rectified spirit dissolves less of the myrrh than water; but it extracts more perfectly that in which its bitterness, flavour, and virtue consist. The spirituous solution contains all the active matter; in distillation nothing is carried away by the spirit, so that the extract obtained from a spirituous solution is a very fragrant, bitter, tenacious resin, and possesses all the virtue of the myrrh.

From 7680 parts of myrrh Neumann procured 6000 of watery extract, 180 of volatile oil, and 720 of alcoholic extract: by inverting the order, 2400 of alcoholic and 4200 of watery extract. Myrrh is not fusible, and with difficulty inflammable, soluble in alkalis; but the tincture poured into water becomes yellow and opaque. The watery solution when filtered is also yellow. Myrrh was anciently of great value, not as a medicinal substance, but as one of the ingredients for embalming.

The London College directs the tincture of myrrh to be prepared by adding three ounces by weight of bruised myrrh to a pint and half of proof spirit, and half a pint of rectified spirit of wine. It must be digested with a gentle heat for eight days, and strained. This tincture is frequently employed in detergent gargles (see APHTHÆ); but if one ounce of hepatic aloes be added it becomes the *tinctura myrrhæ cum aloe*, and is applied externally to ulcers as a vulnerary, and is useful when such are foul and fetid, requiring stimulating applications.

Elixir myrrhæ compositum. Tinctura sabinæ composita, is made by adding one ounce of the extract of savin to tincture of castor, one pint; tincture of myrrh half a pint. Digest until the extract is dissolved, and strain. (Pharm. Lond. 1788.) This was formerly called *elixir uterinum*; and is given in a dose of from twenty to forty drops, in a cup of pennyroyal tea, twice a day. It is esteemed a good emmenagogue, possessing similar virtues to the powder and extract of sabine.

Pulvis è myrrha compositus.—Take of the leaves of dried rue, savin, myrrh, and Russia castor, of each an ounce; mix and beat them into a powder. (Pharm. Lond. 1788). Given in a dose of twenty-five or thirty grains two or three times a day, it is esteemed an efficacious medicine, in uterine obstructions, and hysteria.

Pulvis myrrhæ added in an equal proportion to the lapis calaminaris is sometimes sprinkled upon an ulcer, to promote cicatrisation.

Oleum myrrhæ per deliquium.—Boil an egg very hard, take out the yolk, and fill the cavity with myrrh, bind the divided sides together, and it will deliquesce in a cool moist atmosphere.

It possesses all the smell and taste of the myrrh, may be precipitated and coagulated by spirit of wine, and the coagulum dissolved by water. It is used as a cosmetic. See Raii Historia; Tournefort, Lewis, and Cullen's Materia Medica; Neumann's Chemistry.

MY'RRHA. See ANIME.

MYRRHI'NE, (because it smells like myrrh). See MYRTUS.

MY'RRHIS, (from its smell). *Cerefolium Hispanicum, conile* from its resemblance to hemlock, *cicutaria odorata*, SWEET CICELY, GREAT CHERVIL, *scandix odorata* Lin. Sp. Pl. 368. The petals are unequal, the seed striated, resembling the beak of a bird. In virtue it agrees with chærefolium, resembles in taste the cloves, and, like them, is said to be useful in scurvy. The branches resemble those of fern, with a pleasant aromatic smell, the stalks hairy, the flowers white, and appear in May or June. It is rather an esculent than a medicinal plant, though said to be diuretic. See Raii Historia.

MY'RRHIS A'NNUA. See DAUCUS CRETICUS.

MY'RRHIS SYLVE'STRIS. An appellation of the *chærophyllum sylvestre*, &c.

MYRTACA'NTHA, (from its likeness to myrtle, and from its prickly leaves). BUTCHER'S BROOM. See RUSCUS.

MYRTI'DANON, (from μυρτος, *the myrtle*). According to Hippocrates this is the fruit of the Indicum, called from resembling myrtle-berries, which the Indians called pepper. But Dioscorides means by it an excrescence which grows on the trunk of the myrtle, more astringent than the plant itself.

MYRTI'LLI, (a dim. of *myrtus*). See MYRTUS COMMUNIS ITALICA.

MYRTOCHEI'LIDES, (from μυρτον, *the clitoris*, and χειλος, *a lip*). See NYMPHÆ.

MY'RTON, (from its resemblance to the myrtle-berry). See CLITORIS.

MY'RTUS. The MYRTLE; *myrrhine;* because it smells like myrrh.

MY'RTUS BRABA'NTICA and ANGLICA, called also *rhus myrtifolia Belgica, myrica gale* Lin. Sp. Pl. 1543, *rhus sylvestris*; *acaron*; *frutex odoratus septentrionalium, elæagnus chamælæagnus Dodonæi.* GAULE, SWEET-WILLOW, DUTCH MYRTLE, is a small shrub, much branched, with smooth, oblong, whitish-green leaves, somewhat pointed, or converging at each end; among which arise pedicles, bearing scaly cones, which include the seeds, one little seed being lodged in each scale. It grows wild in uncultivated watery places, in many parts of England, flowers in May or June, ripens its seeds in August, and loses its leaves in winter. The leaves, flowers, and seeds, have a strong fragrant smell, and a bitter taste: they are used to destroy moths and cutaneous insects; sometimes to preserve malt liquor; but they render it very inebriating. An infusion taken inwardly is said to destroy worms, and strengthen the stomach. This plant has been highly esteemed, but is little valued in this kingdom. See Raii Historia Plantarum; Lewis's Materia Medica.

MY'RTUS COMMU'NIS ITA'LICA. COMMON MYRTLE; *myrtus communis* Lin. Sp. Pl. 673, var. γ, is

an evergreen shrub, with oblong leaves, pointed at both ends, in the bosoms of which spring solitary white pentapetalous flowers, followed by black, oblong, umbilicated berries, full of white crooked seeds. It is a native of the southern parts of Europe; the berries, which are called *myrtilla*, rarely come to perfection with us, and they are usually supplied by those of the *vaccinium myrtillus* Lin. Sp. Pl. 498.

The berries are recommended in alvine and uterine fluxes, and disorders from laxity and debility; they have a roughish, not unpleasant, taste, and are accompanied with a sweetish aromatic flavour. The leaves are astringent, and, if rubbed, yield an aromatic flavour. See Raii Historia; Lewis's Materia Medica.

MY'RTUS PIME'NTA vel JAMAICE'NSIS. See PIPER JAMAICENSIS.

MY'STAX. That part of the beard which grows on each side of the upper lip. The etymon of *mustachio*.

MYSTICE'TUS. See CETUS.

MY'TILUS. The MUSSEL, *mytilus edulis* Lin. Syst. Naturæ, *musculus*. A sea shell-fish of a luscious flavour, found on many parts of our coast, of a moderate size, larger between the tropics, and smaller in the arctic sea. As from mushrooms, so from this shell-fish very alarming symptoms are often produced, ascribed to a quality in the mussels, either proper to them, or accidentally acquired from their situation or nourishment. The pea-crab, often found in them, has been accused; but as similar effects are observed to arise from various other causes besides mushrooms and mussels, the peculiarity of the person's constitution is generally supposed to occasion them. Similar complaints have sometimes been produced by eating salmon, taking the Peruvian bark, by washing the hands in water after fish hath been boiled in it, bathing in the sea, cantharides applied to the skin, and the internal use of wild valerian root.

"The signs which announce the noxious effects of boiled mussels," observes an author in the second volume of the Memoirs of the Academy at Brussels, "are an universal uneasiness, or numbness, that commonly takes place three or four hours after they have been eaten. These symptoms are succeeded by a tightness of the throat, a sense of heat about the head and eyes, immoderate thirst, nausea, and sometimes vomiting. If the patient hath the good fortune to vomit up the whole of the offensive matter, this evacuation is generally sufficient to stop the progress of the complaint; but if he does not bring up any or only part of the noxious substance, the disorder becomes more or less alarming, according to the quantity of the deleterious matter in the first passages, and the particular constitution of the patient. The want of a sufficient evacuation by vomit increases the tightness of the throat, and the swelling of the face, eyes, and tongue: all the parts within the mouth appear inflamed, and, as it were, excoriated; and the redness soon spreads to the outer surface, appearing first in the face, and extending from thence to the neck, breast, and abdomen, and by degrees over the whole body. This particular eruption is the symptom the most distinguishing and characteristic of the malignancy of mussels; it is constantly accompanied with a kind of delirium with singular uneasiness, and an insupportable itching. It has no affinity with the eruption produced by the erysipetalous fever, with the scarlatina, measles, purpura urticaria, or any other known species of red eruption; but has these particularities, viz. that it never appears unless mussels have been eaten; is not preceded by fever, or accompanied by symptoms which appear united in any other disease; and lastly, that the whole surface of the body, though redder than in any other eruptive disease, appears as it were spotted with an infinite number of points of a deeper red than the rest of the skin.

These points are infinitely smaller than a millet seed; if we examine them through a lens, we see distinctly that they are the opening or pores of the cuticle, while the redness which is seen only through the epidermis appears of a paler hue."

The proper treatment of these complaints is the same with that directed when mushrooms are the offending cause. (See AMANITA). The itching is considerably allayed by washing the whole surface of the body with vinegar and water for about half an hour.

It is advised as a preventive of their injuries to wash them with water, and afterwards with vinegar, to boil them for use in an earthen pot with vinegar and water, and a few grains of Jamaica pepper.

The dangerous consequences supposed to arise from eating mussels are, however, greatly exaggerated. They very rarely occur, and scarcely with the violence just described; and, though such effects are ocasionally heard of, yet years elapse without such an occurrence, on coasts where mussels are a common article of food. These deleterious consequences are sometimes attributed to one particular part of the fish; at others, to their lying on beds of cupreous pyrites; sometimes to their richness, at others to a peculiarity of constitution. No part of the fish, however, seems to have been pointed out, the absence of which would secure the person from the peculiar effects: the symptoms are not those which follow the swallowing of copper, and the fish is not peculiarly rich. It is certainly more deleterious to some constitutions than others. M. Debeunie thinks that the cause is the spawn of the star fish (the asteria), and has added some experiments in a late volume of the Journal de Physique to support his opinion. This is by no means improbable; but the little crabs often found in mussels are far from being unwholesome.

MYTTO'TUM. A kind of food made of garlic, onions, and cheese, bruised together.

MYU'RUS, (from μυς, *a mouse*, and ουρα, *a tail*). An epithet for a sinking pulse, when the second stroke is less than the first, the third than the second. The pulse sometimes sinks irrecoverably, but occasionally rises again in some degree.

MY'XAS, MYXA'RIA, (from its viscidity, resembling μυξα, *mucus*). The *sebastina domestica, cordia myxa* Lin. Sp. Pl. 273. See SEBESTEN.

MYXOSARCO'MA, (from μυξα, *mucus*, and σαρξ, *flesh*). See MUCOCARNEUS.

N.

N, In prescription signifies number.

NA'BEA. See ŒNOPLIA.

NA'BIT. See SACCHARUM.

NA'CTA. See ABSCESSUS PECTORIS, and MAMMÆ.

NA'DUCEM. See MOLA.

NÆ'VUS, (from *gnævus,—à geno,* because it appears from the birth). *Nævus maternus,* A MOTHER'S MARK, *macula matricis, stigma.* (See MACULA.) The same term is applied to the WEN, *encystis.* Dr. Cullen gives the wen the general name *lupia,* places it in the class *locales* and order *tumores,* defining it an extuberance under the skin, moveable, soft, and without pain.

All preternatural tumours on the skin, in the form of a wart or tubercle, are called *excrescences;* by the Greeks *acrothymia;* and when observed at the birth, *nævi materni, metrocelides,* MARKS FROM THE MOTHER. Larger tumours depending from the skin are denominated *sarcoma.* The nævi appear on any part of the body, differing in their colour from the rest of the skin, sometimes resembling strawberries, grapes, &c. Heister advises their removal by means of a ligature, a cautery, or a knife, according to circumstances.

Dr. Aitkin, in his Elements of Surgery, divides the wen into the following species. 1. *Atheroma.* 2. *Meliceris.* 3. *Steatoma,* to which M. Litre adds the *lipome,* which contains fat. The atheroma is colourless, void of pain, containing in a cyst a matter like curds, intermixed sometimes with hard corpuscules, and sometimes with a hardish substance, like the macerated bones of chickens. It is of an irregular shape, not easily impressed with the finger, and very slightly elastic. If the contained matter resembles honey, it is named *meliceris;* if suet, STEATOMA, q. v. M. Litre describes the contents of the lipome to have all the qualities of common grease; and, though the fat of the lipome resembles in appearance that of the steatoma, yet the former melts and is inflammable. When the man who had the lipome was fatigued, or had drank freely, it inflamed for some days after, and its contents increased the size of the tumour. See Memoires de l'Academie Royale des Sciences, l'Ann. 1709.

Mr. Bell, speaking of these tumours, observes, that they each have various degrees of consistence. In judging of their nature, some advantage may be derived from attending to their situation. Thus, in some parts, fat is more apt to be secreted and deposited in the cellular substance than in others, and the steatomatous tumours are seldom, if ever, he thinks, met with in those parts of the body which are not usually in a state of health supplied with fat The head, indeed, is more liable than any part of the body to encysted tumours, but they are very universally atheromatæ or meliceres. The meliceris, which is distinguished by the free fluctuation of its contents, must be treated as a common abscess, or as directed for the hydrocele of the tunica vaginalis. See HYDROCELE.

When a cyst containing matter adheres so firmly to the contiguous parts as to require much time to remove it by dissection, it should never be attempted, except the patient is firm and resolute. It will be sufficient to lay it freely open through its whole extent by an incision, and to remove any loose portion. The contents of the tumour will in this manner be completely removed by suppuration, and the cure may either be effected in the usual way, by preserving the wound open till it fills up with granulations from the bottom, or it may be attempted by drawing the divided edges of the skin together, and trusting to moderate pressure with the ordinary effects of inflammation. This plan, however, will often fail, and the whole degenerate into a malignant ulcer. If on a gland, it should never be attempted; and extirpation is, in general, the safest mode, if, from the distance of any large vessel, it is practicable.

See also the article STEATOMA, for the method of dissecting the whole tumour out; which, when not very large, may be submitted to.

See Wiseman, Turner, White, Bell, and Heister's Surgery; Warner and Gooch's Cases and Remarks, p. 281, &c.

NA'I CORO'NA. See PHASEOLUS ZURATENSIS.

NA'KIR. A violent flatulence passing from one limb to another with pain. Schenkius.

NA'LUGN. A bacciferous shrub of an unknown genus in Malabar, which flowers twice a year. Its different parts are used by the natives in flatulent and spasmodic disorders. See Raii Historia.

NA'NDIA. See LYCIUM.

NANDI-E'RVATAM. A small East Indian shrub, the whole of which is lactescent; the juice destroys worms: but this plant also has not yet been noticed by the systematic botanist, or the indigenous name has not been preserved. See Raii Historia.

NANDI-ROBA, *fewillea scandens* Lin. Sp. Pl. 1457, used in St. Domingo, where it grows, as a remedy for the bites of serpents.

NAP, or NAPE'CA. See ŒNOPLIA.

NAPE'LLUS, (from its bulbous root resembling the turnip napus).

NA'PHÆ AQ. See AURANTIUM HISPANICUM.

NA'PHTHA, an Arabian word, applied by the Arabians to AMBER, (see AMBRA) *nasa, terræ oleum.* It is the thinnest of the liquid bitumens, perfectly fluid, clear, colourless, of a strong smell, not highly fragrant, extremely subtile, so light as to swim on water, spreading to a large surface, exhibiting prismatic colours, and highly inflammable. It has the same appellation whether it is separated by nature or art from thick petroleum or grosser bituminous matter. There are three kinds as it arises naturally, the white, the reddish, and the grosser deep coloured, but each by keeping, seemingly from the addition of oxygen, becomes a dark resin.

Naphtha issues from the earth, at Baku, in Persia, on the borders of the Caspian; is collected from the surface of wells in the same regions, and sometimes found on the waters of Italy. Naphtha and petroleum are probably formed by the decomposition of bitumens by subterraneous fires; and the lighter fluid naphtha usually appears on the surface.

The true naphtha disolves resins and balsams, but not gum resins or elastic gums: it is useful as an external application for removing old pains, chilblains, nervous disorders, cramps, contractions of the limbs, paralytic affections, &c. See PETROLEUM.

NA'PIUM, (from its resemblance to *napus, navew*). See LAMPSANA.

NA'PTA. (See NAPHTHA); a name also for the tumour, called *nata* or *natta.*

NA'PUS, (a Rabbinical term). The seeds of this plant furnish a stimulating oil, called RAPE-OIL, used in liniments. See BUNIAS.

NA'PY, (from *νη, not,* and *πaω, to eat;* because it was thought not eatable from its pungent taste). See SINAPI.

NARCE, *ναρκη*, the TORPEDO, (from *ναρκοω, to stupify*). A torpor, stupor, or dulness of sensation, either from disease or medicine.

NARCI'SSUS LUTÆ'US SYLVE'STRIS, (from the youth, who, in poetical fable, is said to have been changed into this flower). *Bulbus sylvestris, narcissus pseudo-narcissus Anglicus* Lin. Sp. Pl. 414. WILD DAFFODIL. The roots are slightly purgative and emetic; the dose two drams in infusion.

NARCO'SIS, (from *ναρκω, to stupify*). A STUPEFACTION.

NARCO'TICA, (from the same). See ANODYNA.

NA'RDUS CE'LTICA, (from the Syriac word *nard*). *Spica celtica, seliunca,* CELTIC SPIKENARD, *valeriana celtica* Lin. Sp. Pl. 46, is a small species of valerian, with uncut, oblong, obtuse, oval leaves, a native of the Alps, from whence we have the dry roots, consisting of a number of blackish fibres, with the lower parts of the stalks adhering: the last are covered with thin yellow scales, the remains of the withered leaves. Its virtues resemble those of valerian, which it possesses in a less degree.

The mountain nard is only the root of the large valerian. See Raii Historia.

NA'RDUS I'NDICA, NA'RDUS SYRI'ACA. *Spica, spica Indica, spica nardi,* INDIAN SPIKENARD, NARD, or SYRIAN NARD, *andropogon nardus* Lin. Sp. Pl. 1482. Dioscorides thinks, without reason, the Indian and the Syrian nard to be different. They are the bushy top of the root, or the remains of the withered stalks and ribs of the leaves of an Indian grassy-leaved plant. Linnæus, as just mentioned, has referred it to the genus andropogon; and Dr. Blane, in the Philosophical Transactions for 1790, considers it as another species of the same genus, of which the trivial name is the native appellation, viz. *jwarancusa.* Sir W. Jones, however, in the second and fourth volumes of the Asiatic Researches, refers it, with much reason, to the genus valeriana, with the trivial name jatamansi. The error of supposing it a grass arose seemingly from the term spica; but this species of valerian rises from the ground in hairy spikes like ermines tails. Dr. Roxborough, in the fourth volume of the Researches, has given a figure of this appearance, and indeed of the whole plant.

The nard, as brought to us, is a congeries of small, tough, reddish-brown fibres, cohering close together, but not interwoven so as to form a bunch or spike, about the size of a finger. The spikenard of India and Syria alike resemble valerian in their virtues; but the Indian is warmer than the Syrian, and somewhat pungent and bitterish. It also agrees very nearly in its virtues with cypress.

The nard was highly valued in the east as a spice and perfume; and it was an ingredient in the theriaca and mithridate. Among the ancients the unguentum nardinum was used at the baths and feasts. All the ancient physicians recommended it in dropsy, gravel, and pains of the stomach, both internally given and externally applied on wool. In the latter mode Galen relieved the emperor Marcus Aurelius in cholera. It is used in India as a febrifuge.

NA'RDUS ITA'LICA. See LAVENDULA LATIFOLIA.

NA'RDUS RUSTICA et MONTANA. See ASARUM.

NA'RES, (from the Hebrew, *naker*). The NOSTRILS; *nycteres.* The internal nares, or cavity of the nose, *pator narium,* comprehend the whole space between the external nares and the posterior openings immediately above the arch of the palate, by which a probe may be passed from the nose to the fauces. From thence these cavities reach upwards to the lamina cribosa of the os ethmoides, where they communicate forward with the frontal, and backward with the sphenoidal sinus. The two frontal sinuses, the two antra highmoriana, the cellulæ of the os cuneiforme under the upper spongy bone of the nose, open into the nostrils, and from thence discharge their mucus. The spongy bones, two in each nostril, are covered with the mucous membrane also, and thus the secreting surface of the nostrils is enlarged. The olfactory nerves, without the dura-mater, pierce through the holes in the os ethmoides, and spread themselves on the mucous membrane of the nostrils, with a branch from the fifth pair also. The membrana pituitaria, which lines the nose, is very vascular and papillous at those parts where it is most exposed to the stream of the air. The whole membrane is full of small glands which separate mucus; and from this membrane polypous excrescences arise. The arteries of the nares are branches of the internal maxillary; the veins discharge their contents into the internal jugulars. The nerves are branches of the olfactory, ophthalmic and superior maxillary.

The nostrils of infants are sometimes obstructed, and some unctuous substance is applied for relief; but three or four grains of white vitriol, dissolved in half an

ounce of water, solicits more effectually a discharge of the too viscid mucus.

When the nostrils, after the small-pox, are closed up, an opening may be made into them with a small knife, and kept distended until the wound is healed.

NARIFUSO'RIA, (from *nares, the nostrils*, and *fundo, to pour*). Medicines which are instilled into the nostrils.

NASA'LE, (from *nasus, the nose*). See ERRHINA.

NASA'LIS ARTE'RIA. See MAXILLARIÆ ARTERIÆ.

NASA'LIS, *musculus compressor naris, rinœus*, rises fleshy from the extremity of the os nasi, and adjacent parts of the os maxillare, and is inserted into all the cartilages of the ala. It dilates the nostrils.

NASA'LIS PROCE'SSUS. See MAXILLARIA SUPERIORA OSSA, and FRONTIS OS.

NASCA'LE, (from *nasus, the nose*). A pessary made of wool or cotton to raise the nose when compressed.

NA'SI O'SSA. Two small bones which compose the upper part of the nose, and are supported by the septum nasi.

NA'SI A'LÆ. See PINNÆ.

NA'SITAS, (from *nasus, the nose*). A speaking through the nose.

NA'SO PALA'TINI DU'CTUS. See INCISORII DUCTUS.

NASTU'RTIUM. *Quasi nasi tormentum*; because the acrimony of the seed, while bruising, excites sneezing. It resembles the Mithridate mustard, distinguished by a less foliaceous margin, and multifid leaves. A name also for barbarea, sophia, and several other plants.

NASTU'RTIUM AQUA'TICUM, *laver odoratum, sisymbrium, cratevæ sium, cressio, cardamines*. WATER-CRESSES; *sisymbrium nasturtium* Lin. Sp. Pl. 916. A juicy plant with brownish, oblong, obtuse leaves, set nearly in pairs, without pedicles, on a middle rib, terminated by an odd one larger and longer pointed than the rest. The stalks are hollow, pretty thick, channelled, and crooked; on the tops grow tufts of small tetrapetalous white flowers followed by oblong pods, which bursting throw out a number of roundish seeds. It grows in rivulets or the clearest standing waters, and flowers in June. The leaves remain green all the winter, but are in the greatest perfection in spring.

The leaves are to the taste moderately pungent: when rubbed between the fingers, their smell resembles mustard, though weaker. It is a mild, aperient antiscorbutic, supposed to purify the blood, and to open visceral obstructions. The expressed juice contains all the virtue of the plant; but whether eaten as a salad, or the juice drank, its use should be long continued, since as a medicine it is inert. Water-cresses form one of the ingredients for the succus cochleariæ compositus.

NASTU'RTIUM HORTE'NSE. *Lepidium sativum* Lin. Sp. Pl. 899. COMMON GARDEN CRESSES, a low plant, with variously-cut winged leaves, bearing, on the top of the round stalk and branches, tufts of tetrapetalous white flowers, followed by roundish capsules, flatted on one side, and full of reddish round seeds. It is annual, and raised in gardens and an useful dietetic herb in scorbutic cases, and in debilities of the chylopoietic organs. It is milder than the water-cresses: the seeds are more pungent than the leaves, and agree in their general qualities with those of mustard.

NASTU'RTIUM I'NDICUM. *Acriviola, nasturtium Peruvianum, cardamindum ampliori folio, and major flore, tropæolum majus* Lin. Sp. Pl. 490. GREATER INDIAN CRESS, or YELLOW LARK-SPUR. The leaves are round, umbilicated, and placed alternately; the stalks trailing; the flowers consist of five petals, formed like violets; the seeds round and rough, three in each flower; a native of Peru. The young shoots are used as pickles; but the leaves and flowers resemble water-cresses, emitting when bruised the smell of horseradish. Their medical virtues are similar to those of the sort common with us. See Raii Histori; Lewis's Materia Medica.

NA'SUS, (probably from the Hebrew *nasaph, to blow*). The NOSE; *mycter*. The external parts of the nose are the root, the arch, the back or spine, the sides, the tip, *acre*; the wings, *alæ*, or *pinnæ*, the external nares, and the part under the septum. The internal parts are, the internal nares, septum narium, the circumvolutions, the conchæ superiores, the conchæ inferiores, the posterior openings of the internal nares, the sinus frontales, maxillares, and sphenodales; ductus lachrymalis and palatinus. The nerves are the olfactory, and a branch from the fifth pair. The cartilaginous part of the nose is always open to admit of respiration; but grows gradually narrower. See NARES.

NA'TA, or NA'TTA; *naphtha*, or *napta*. A WEN, with a narrow basis. Linnæus speaks of it as rooted in a muscle.

NATA'TIO, (from *nato, to swim*). SWIMMING is a laborious exercise, and should not be continued to exhaust the strength. It is not natural to man as to quadrupeds, for the motions of the latter in swimming are the same as in walking. To man, however, it is by no means difficult, for the body is specifically lighter than water; so that to float it is only necessary to keep the head above the surface, for the body falls naturally forward with the head downward. A slight motion of the hands produces this effect, and the body is propelled by the impulse of the feet. Oribasius gives some directions on the subject, lib. vi. cap. 27. The dangers from swimming are spasms, which sometimes arise from the cold, sometimes from the great exertions, and the inconveniencies arising from the abuse of cold BATHING, q. v. It promotes perspiration, and attenuates the fluids if used in moderation.

NA'TES, (from *nato, to flow*; because the excrements are discharged from them). The BUTTOCKS; and a name of two prominences on the brain. See CEREBELLUM.

NA'TRIX TORQUA'TA, (from *nato, to swim*). See ANGUIS.

NA'TRON, (a lake in Judea, from whence it was produced). BARILLA, SODA, MINERAL and FOSSIL ALKALI. The mineral kingdom offers this alkali in large masses, though contaminated, usually, with sea-salt, which shows its origin. It is also found in various plants, as the salsola kali, sativa, soda, and tragus; salicornia herbacea and arabica; mesembryanthemum nodiflorum; plantago squarrosa; and fucus vesiculosus Lin. The salsola kali is the plant from which it is chiefly procured in the east; but the best is from the s. sativa; and the worst kind from the s. tragus. Where the natron forms a considerable article of commerce, the seeds of the salsola are regularly sown, the plants burnt, and the salt calcined. It always contains some

common salt, Glauber's salt, sometimes a sulphurated kali, and occasionally a little iron. The pure crystals are of a rhomboidal figure, transparent, laminated. One hundred parts contain twenty of salt, sixteen of aerial acid, and sixty-four of water. An ounce of water, at 62° of Farenheit, dissolves about five drams, fifteen grains of the crystals. See ALKALI.

NA'TRON MURIATUM. COMMON SALT. See MARINUS SAL.

NA'TRON PREPARA'TUM, i. e. SAL SODÆ. See ALCALI.

NA'TRON TARTARISA'TUM. See RUPELLENSIS SAL.

NA'TRON VITRIOLA'TUM. See GLAUBERI SAL.

NATSIA'TUM. See COCCULUS INDICUS.

NATU'RA, (from *nascor, to proceed*). NATURE. On this subject we find much unnecessary minuteness in various authors, which it would be useless to transcribe or examine. The term is sometimes used for the Author of nature, or the Supreme Being; sometimes for the whole of his works; occasionally for essential qualities of a body, or the usual series of causes and effects.

The atheists of the continent have exalted nature into a supreme power, forgetting that in this change of name they voluntarily admit the existence of a deity, and give the most unequivocal testimony of the necessity of an omnipotent superintending power. In this work, however, we must speak of nature in a more limited view; and it means, in medicine, the constitution which a man derives from his parents, or those powers, inherent in the whole system, by which deviations are corrected and losses repaired. We say a man is by *nature* weak; and that *nature* cures. In each case we express an effect only, without, by the reference to nature, assigning a cause. These changes may perhaps be the necessary consequences of structure; and in some cases, they appear to be so; but we know of no principle in the constitution by whose superintending power these salutary effects are produced, and we sometimes see such efforts really injurious. It is certainly more honourable to an all-powerful author, that a system, like that of the human machine, shall be formed so as to correct accidental deviations, and to repair injuries, rather than to raise a subordinate agent, to interfere in every error or accident to which the functions or the body may be subject.

NATURA'LIA, (from *natura, nature*). See PUDENDA.

NAU'SEA, (from ναυς, *a ship*; because it is produced by the motion of a ship). CACOSITIA: its least degree means a loathing; or, according to Linnæus, a fixed aversion to food. This proceeds to nausea, retching and vomiting.

Nausea is one of those irregular exertions, which we have described as arising from debility, and is accompanied by a slight degree of inversion of the natural peristaltic motion by which the food is swallowed.

A nausea always precedes a vomiting, and is attended with a tremulous motion of the lips; and a slight nausea is often followed with a discharge of a limpid mucus, coming apparently from the œsophagus, which is certainly susceptible of the inverted peristaltic motion, without any affection of the stomach; as the upper part of the stomach is without the whole organ joining in the action. (See EMETICA). Nausea may be excited by a variety of causes, and in particular habits by circumstances often scarcely, if at all, connected with the stomach. It accompanies also different affections of the brain, particularly every cause of irritation or oppression.

An emetic will often for a time relieve it; but when nausea continues, warm bitters with rhubarb or aloes are the best remedies. The effervescing draughts, sometimes warm opiates, and, when from bile, the juice of lemons, will often be successful. It is an almost constant attendant on fevers, and seldom is permanently relieved till the fever recedes. If it continues after the fever, an emetic is peculiarly necessary.

NAU'TICUS. A muscle chiefly used by sailors in climbing ropes. See TIBIALIS POSTICUS.

NAVICULA'RE, or NAVIFO'RME OS, (from *navicula, a little vessel*); from its supposed resemblance to a boat; and from *navis* and *forma*. See SCAPHOIDES.

NAVIGA'TIO, (from *navigo, to sail*). SAILING is beneficial to weak persons. When the ship's motion is gentle, and steadily progressive, an uncommon alacrity, an increased perspiration, a keener appetite, and a quicker digestion, are the consequences; but when a patient is weak, violent agitation in a rough sea is dangerous. Sea voyages have been recommended in hypochondriac affections, visceral obstructions, scrofula, and particularly in consumptions; in the last, if properly conducted, it has been considered as a very valuable remedy. When speaking of exercise, we mentioned sailing as the most advantageous mode for those who could not bear bodily fatigue. The constant exertion to preserve the equilibrium keeps various muscles in action, and promotes, as we have seen, perspiration. This with the free open air will sufficiently account for all the advantages of a sea voyage. See ŒORA and GESTATIO. The Use of Sea Voyages in Medicine, by E. Gilchrist, M. D.

NEAPOLITA'NUM UNGUE'NTUM. NEAPOLITAN OINTMENT; an old preparation of mercury, for which the unguentum hydrargyri mite is usually substituted.

NEAPOLITA'NUS MO'RBUS, (because it is said to have been first observed among the French soldiers at the siege of Naples). See LUES VENEREA.

NE'BI POU'LI. See BILIMBI.

NE'BULA, (from νεφελη, *a cloud*). See ALBUGO.

NECRO'SIS, (from νεκροω, *to destroy*). DRY GANGRENE, a slow mortification of a part, without any previous softness, and fetid dissolution, attended often with violent pain and stupor: induration and blackness of the parts succeed. It is slower in its progress than gangrene, becomes offensive, and soon terminates. (See MORTIFICATIO). Sauvages enumerates six species.

1. NECRO'SIS USTILAGI'NEA, when it arises from eating corrupted grain. See RAPHANIA.

2. NECRO'SIS A VIRU, from virus generated in the habit, or poison thrown into it.

3. NECRO'SIS FEBRILIS, and

4. NECRO'SIS SCORBUTICA, when it succeeds the attack of a fever, or scurvy.

5. NECRO'SIS EPIDEMICA.

6. NECRO'SIS INFANTI'LIS. This complaint, according to Bell, never arises from inflammation; but

generally from some obstruction in the principal arteries, consequently from a defect of fluids. See Bell on Ulcers, edit. 3. p. 94. Edinburgh Medical Commentaries, vol. ix. p. 78. London Medical Journal, vol. iii. p. 369; vol. vii. p. 268.

NECTA'RIUM, (from *nectar, honey*); the melliferous part of the vegetable, peculiar to the flower. It commonly makes a part of the corolla, but is sometimes entirely distinct from it, and is then more strictly a nectary. It is frequently in the form of a horn, or spur, sometimes in that of a cup.

NE DUM SCHE'TTI. The name of a bacciferous shrub which grows in the East Indies, of which an ointment is made by boiling in oil, used to relieve pruriginous disorders. It does not occur in the systematic authors.

NEDY'IA, NE'DYS, (from νηδυς, *the belly*). See STOMACHUS and ABDOMEN.

NEDYU'SA, (from the same). See SITIS.

NEE'DLE. A surgical instrument of considerable importance, for securing arteries, for sewing wounds, and for sutures. The largest are used for the first, and the smallest for the last purpose. The instrument employed in depressing the cataract is styled a *needle*. For depressing the lens Mr. Ware advises the needle to be somewhat larger in its tongue than usually made.

NEFRE'NDES. SUCKING PIGS; but applied to young children, or old people, who have no teeth; quasi *nefrangentes*.

NE'GRO. See HOMO.

NEI'ÆRA, (from νειαρος, *farthermost*). See ABDOMEN.

NEIEM-EL-SALIB. See GRAMEN CRUCIS.

NELU'MBO. See FABA ÆGYPTIACA.

NEMORO'SA, (because it grows in woods). See ANEMONOIDES.

NE'NUFAR. See NYMPHÆA.

NE'PA. A CRAB, A SCORPION, and the name of the genista spinosa major.

NE'PA THEOPHRA'STI. See GENISTA SPARTIUM.

NEPE'NTHES, (from νη, *a negative particle*, and πενθος, *morning*, from its exhilarating qualities). The nepenthes of the Egyptians is supposed to have been a preparation of opium and Dutrary, both the produce of Egypt. It was, according to Homer, the draught which Helen prepared to dissipate the uneasiness of her husband. Schultz's Historia Medicinæ. See also BANDURA.

NEPE'NTHES DISTILLATORIA of Linnæus, Sp. Pl. 1354, is a singular plant of Ceylon, which has, at the extremities of its branches, a membranous cup, always in the morning covered with a lid, and full of water. The lid rises during the day, and the water is half evaporated; but restored before the next morning. See, says Linnæus, the true nepenthe for the exhausted botanist! The roots are said to be astringent, and the leaves are cooling. The water, in the urn, is used by the Indians in obstructions of urine.

NE'PETA, (from *nepte*, German). See MENTHA CATARIA.

NEPHRA'LGIA, (from νεφρος, *the kidney*, and αλγος, *pain*). Pain in the kidneys or ureters.

NEPHRA'LGIA CALCULO'SA. *Nephralgy*, from a STONE IN THE KIDNEYS. This differs from a nephritis from the same cause, as it consists in a fixed pain in the region of the kidneys or ureters, without any acute febrile affection, and seems to depend on a large stone fixed in either part. It seldom happens in both sides, and the pain usually extends along the track of the ureter in the abdomen towards the bladder, attended with a painful drawing up of the testicle of the same side, or with a stupor, or numbness of the thigh. In the violence of the pain, a nausea and frequent vomiting come on: by lying on the pained side the uneasiness is mitigated, but on that which is opposite, increased. The urine, in the beginning is watery, and small in quantity; afterwards turbid and copious, often extremely hot and bloody. The chief relief arises from bleeding, rest, diluting mucilaginous liquids, decoctions or infusions of linseed, marshmallows, barley and gum arabic, anodynes, camphor, oily medicines, the warm bath, and a thin cooling diet. See CALCULUS and NEPHROTOMIA.

NEPHRA'LGIA RHEUMA'TICA. See RHEUMATISMUS.

NEPHRELMI'NTICA ISCHU'RIA, (from νεφρος, and ἑλμινς, *a worm*). A suppression of urine from worms. See ISCHURIA.

NEPHRI'TICA, (from νεφρος, *the kidney*). A suppression of urine from inflammation in the kidneys. See ISCHURIA.

NEPHRI'TICA A'QUA. See NUX MOSCHATA.

NEPHRI'TICUM LI'GNUM, (from νεφρος, *the kidney*); *peregrinum lignum*, NEPHRITIC WOOD, *guilandina moringa* Lin. Sp. Pl. 546; and probably the nux behen is a production of the same tree. (See BEN.) It is brought from America in large compact pieces of a whitish or pale yellow colour without, and of a dark brownish or reddish colour within. If bruised, and macerated in water, it imparts a deep tincture, appearing, when placed betwixt the eye and the light, of a golden colour; but in other situations, of a fine blue; a property by which it differs from all other known woods. Other woods are often mixed with it, which only give a yellow tincture. With rectified spirit of wine the same blue tincture is procured, becoming yellow by adding an acid, but again blue by an alkali.

To the taste it is slightly bitter, and the raspings have a faint aromatic smell. A strong infusion in water is gently astringent, recommended in dysury, nephritic complaints, and all disorders of the kidneys and urinary passages. It does not, like the warmer diuretics, increase inflammation; but it is seldom employed. See Raii Historia; Lewis's Materia Medica.

NEPHRI'TICUS, (from νεφρος, *a kidney*). Belonging to the kidneys; and applied to the disorders of the kidneys or their remedies.

NEPHRI'TIS, (from νεφρος, *a kidney*) *Inflammatio renum*. An INFLAMMATION IN THE KIDNEYS, placed by Dr. Cullen in the class *pyrexiæ*, and order *phlegmasiæ*. He defines it a febrile affection, attended with pain in the region of the kidney, often following the course of the ureter; frequent micturition, voiding water either thin and transparent, or very red; vomiting, numbness of the thigh, and retraction or pain of the testicle on the same side as the kidney affected. The pain is seldom very acute unless combined with rheumatism. The true species he calls *nephritis vera*: the symptomatic are; 1. *Nephritis calculosa*;—2. *Ne-*

phrálgia calculósa;—3. *arenósa*;—4. *purulénta*;—and 5. *arthritica*; from the various causes.

The general causes are, whatever obstructs the circulation in these vessels; as a wound, contusion, abscess, tumour, long-continued defluxion, spasm, or a small stone; any impediment to the conveyance of the urine into the pelvis, ureters, and bladder; violent riding; excessive heat; a plethora; acrid diuretics, and poisons. When these vessels are inflamed, the constriction is so great that no urine can be discharged, or only in a small quantity. If this is pellucid, it is unfavourable. Pains and convulsions are often produced in the stomach, intestines, and uterus, from the irritation of the neighbouring nerves; and from hence arise eructation, nausea, vomiting, diarrhœa, iliac passion, retentions of urine, stupor, immobility of the legs, and preternatural heat in the loins.

A stone in the kidney usually excites inflammation in its internal membrane, and in the tubuli uriniferi.

Inflammation in the kidneys is distinguished from the gravel, or a stone obstructing the ureter, by the fever and the acute inflammatory pains; from an inflammation of psoas muscle, or other adjacent parts; by the pain which attends erecting the body, and the difficulty of putting either leg forward, which attend psoas inflammation, and the absence of the distinguishing signs of nephritis; from the colic, and other inflammatory and spasmodic pains in the intestines; by the seat of the pain.

If the disease is protracted beyond the seventh or eighth day, and there is a stupor or heaviness of the part, with frequent returns of chilliness and shivering, &c. there is reason to suspect that an abscess will ensue.

If the urine becomes higher coloured, is secreted in a larger quantity, and at last is copious, thick, and mixed with mucus, a gradual relief follows, and the cure is effected by effusion. It may also terminate in an abscess, a mortification, or pass off by a metastasis. Mortification is however uncommon, and more frequently the kidney gradually wastes. Inflammations in this part often suppurate on the fourth day, but an abscess may begin so late as the fourteenth. The pus may be discharged into the pelvis of the kidney, the abdomen, or externally through the integuments and the skin: in the first or last case a cure sometimes follows; the second is fatal.

When the inflammation is violent, bleeding in large quantities is absolutely necessary, though the pulse is seldom full or hard. Copious and repeated discharges from the bowels by means of the purging salts, or the oleum ricini, are indispensable. Relaxing, and occasionally anodyne clysters, are highly useful. With the same views a semicupium is often serviceable.

Decoctions of parsley roots, infusions of lintseed, or the Arabic emulsion, with a double quantity of the gum, are proper as common drink; and to prevent their palling the appetite, a little lemon-juice and sugar may be added.

In case of a suppuration, the treatment is nearly the same as in a suppuration of the liver. After the abscess is burst, the patient should drink freely of diluting and mucilaginous liquors, taking the bark freely.

If pains are excessive, opiates may be allowed; but care must be taken to prevent constipation. If the vomiting is troublesome, saline draughts in a state of effervescence, with a few drops of laudanum, will relieve it. Small doses of nitre largely diluted are useful; and the camphor might perhaps be a serviceable remedy. The disease however is rare.

If a gangrene takes place it is known by the violence of the cause and of the symptoms, the want of relief from medicine, and the sudden remission of the pain without apparent cause, cold sweats, a weak intermittent pulse, hiccoughs, urine black, fetid and foul, or retained, with a sudden and considerable loss of strength. In those cases, no cure can be expected.

See Boerhaave's Aphorisms, and Van Swieten's Commentary; Fordyce's Elements, part the second; Cullen's First Lines, edit. 4. vol. i. p. 387.

NEPHROLI'TICA ISCHU'RIA, (from νεφρος, *the kidney*, and λιθος, *a stone*). A suppression of urine from the stone in the kidneys. See ISCHURIA.

NEPHROME'TRÆ, (from μητρα, *womb*). See PSOÆ.

NEPHROPLETHO'RICA ISCHU'RIA. ISCHURIA, q. v. from a plethora.

NEPHROSPA'STICA. ISCHURIA, q. v. from a spasm.

NEPHROTHROMBOI'DES. ISCHURIA, q. v. from grumous blood.

NEPHROPY'ICA. ISCHURIA, q. v. from purulent matter in the kidneys.

NEPHROPHLEGMA'TICA. ISCHURIA, q. v. from pituitous or mucous matter.

NEPHROPLE'GICA. ISCHURIA, q. v. from a paralytic state of the kidneys.

NE'PHROS, (from νεω, *to flow*, and φερω, *to bear*, as conveying the urine). See REN.

NEPHROTO'MIA, (from νεφρος, and τεμνω, *to cut*). NEPHROTOMY, the extraction of a stone from the kidneys by an operation. Rouset first advised this operation, and in Mezeray's History of France there is an instance of its having succeeded on a convict; but from the course of the renal artery it does not appear to be possible, without destroying the patient. (See RENES). Heister has indeed told us that wounds in the kidneys are not mortal; and if a stone or an abscess can be felt externally, so as to be opened without exposing the cavity of the abdomen, there is no reason why the operation should not be attempted. See Avicenna, Serapion, Wedelius, Meckren, Heister; Medical Musæum, vol. ii. p. 370; Bell's Surgery, vol. ii. p. 144; White's Surgery, p. 368.

NEPO'NES. See BARONES.

NERA'NTIA. See AURENTIA HYSPALENSIS.

NE'RIUM, (from νερος, *humidus*, because it grows in moist, generally maritime places). *Rhododaphne, rhododendron, oleander, laurus rosea*. The DWARF ROSE BAY, *nerium oleander* Lin. Sp. Pl. 305. Its flowers resemble a rose, and its leaves the bay; and it is rather a tree than a shrub. The branches are divided and subdivided by threes, and the leaves grow three together. The leaves and flowers are poisonous; the muscles of the pharynx become paralytic; and vomiting with purging soon comes on. Vinegar is said to be its antidote. See Raii Historia.

NE'RIUM ANT'IDYSENTE'RICUM. Lin. Sp. Pl. 305. The plant which probably affords the conesi or codagapala bark.

NERO'LI O'LEUM. See AURANTIA HISPALENSIA.

NERONIA'NA. See PHLEBOTOMIA.

NERVA'LIA O'SSA, (from *nervus, a nerve*). See ARCUALIA OSSA.

NERVE'A SPONGIO'SA, (from the same). See CORPORA CAVERNOSA PENIS.

NE'RVI, *neuri*, (from νευω, *to extend*, because originally applied also to the tendons and sometimes even to the ligaments). Nerves are the prolongations of the medullary substance of the brain; and, though in their progress their whole bulk seems to be greater than the nervous cord, when it escapes from the cranium, this is apparently owing rather to the separation of the nervous by cellular, substance, than any addition to their medullary portion. We shall find however some sources, from which additions may accrue.

To take a more distinct view of the nervous system than any anatomical author will afford, we must examine it comparatively, in the different animals of a lower order. In the human body we have described the brain, and found the spinal marrow a vast trunk, arising as from a root, from which the nervous filaments are the branches; and have seen another system, the sympathetic or great intercostal. This we shall term, for the sake of convenience in expression, the ganglionic system; for in this alone are the nerves united in ganglia, which are subsidiary masses of medulla with its attendant cineritous substance, or communicate freely in a net-work, styled a *plexus*. The ganglionic system is destined to the vital organs. The sensations it conveys are indistinct, and its activity, though subject to remissions, constant; while the cerebral system destined to the organs of sense, and to the voluntary muscles, conveys distinct sensations, requires repose, and is disposed in a regular order. As we descend in the scale of animated beings we find the cerebral system gradually lessen, till it disappears, and the ganglionic alone remains. As the former disappears, the functions of nutrition and generation are more active, while those of sensibility and intelligence diminish in the same proportion. There are consequently two nervous systems in vertebral animals, and one only, with some slight exceptions, in those without vertebræ, which are, at the same time, without voluntary loco-motion. If zoophytes have no visible nervous system, their sensibility shows that they contain nervous molecules, which may be compared to isolated ganglions.

Animals which have the ganglionic system only possess no centre of vitality, but are often propagated like vegetables by buds. Each ganglion is to a certain extent independent, and each can apparently supply the place of the other, in reproducing any part which has been lost.

In man, the ganglionic system begins in the neck by the superior cervical ganglion, the largest of the whole body. It is this which supplies the place of a brain in animals which have none. Below is the inferior cervical ganglion, which is often double. In the breast, the grand sympathetic nerve forms almost as many ganglia as it meets with nerves; and the nervous fibres scattered in every direction form two or three cords which descend to the abdomen, and there assume the appellation of the *splenic nerve*. This forms a considerable ganglion near the diaphragm. In the lower orders the ganglia are equally numerous in the abdomen.

The substance of the nerves appears, at first sight, a pulpy mass, but, if examined with a microscope, each nerve is found to consist of fibres in a parallel direction. Dr. Monro thought the fibres convoluted; a circumstance which no anatomist has since confirmed, owing apparently to optical illusion. When spread in the organs of sense, the fibres are no longer discerned, but the whole becomes a nervous membrane of peculiar delicacy. We have no reason however to suppose the structure changed, but the fibres discovered by the microscope are probably only fasciculi of more minute ones covered with a proper coat; and when this is deposited the fibrous structure eludes our sight. It is estimated, from the angle which the least visible object subtends, that the fibre which becomes sensible of a visible impression must be less than the thirty-two thousandth part of a hair. Every nerve is covered at its passage through the cranium by coats of the dura and pia mater, and tunica arachnoidea; the two latter are said to accompany the nervous fibrils in their course. This is however probably true only to a certain extent, for the nerves have also a fine coat from the cellular membrane, which may be expanded by inflation so as totally to obscure the nervous fibres: these shrink also in drying, and almost disappear. The strong dura mater is absolutely necessary to enable them to bear the pressure of the bones, in passing through their foramina, and the shocks they are subject to in the extremities. Anatomists have however in general supposed, that the pia mater accompanies the nerves in their minuter ramifications; but, whatever the membrane may be, Reil thinks that he has discovered it by dissolving the medullary substance in an *alkaline* lixivium, and, on the contrary, has separated the nervous fibre by dissolving the coat in an *acid*. It is at least certain that we do not see the nervous substance distinct from its coverings, but in the retina, and the nerve dispersed on the cochlea, vestibulum, and semi-circular canals of the ear. The nerves are probably in the same state when dispersed on the muscular fibres.

The arteries of the nervous cord are very numerous, and, as hinted in the article MUSCULUS, are necessary perhaps to give that tone or tension which is consistent with the due discharge of their functions; but it is sufficient in this place to remark, that the arteries are so numerous as with the usual fine injection to render the nerve of an apparently uniform colour. Though we have however employed the term tension, we mean not to insinuate that the nerves convey sensations as musical chords. They are incapable of *such* tension, and the term is rather used analogically, than strictly. The arteries are accompanied by veins, and probably also by lymphatics.

The ganglions have thicker coats, more numerous, and larger blood-vessels than the nerves. They are larger than the nerves which form them; and, in general, when nerves unite, they are larger at their union than the cords of which they are composed. In the ganglion, the fibres are united, crossing each other in different directions, and the consequences have been already noticed.

We need not now stay to record the experiments which show that sense and motion depend exclusively on the nerves, or rather on the nerves as accompanied

by their arteries. It is not only certain, that to tie the artery will render a muscle paralytic, or destroy the sensation of an organ, but that a more active circulation will increase both tone and sensibility. Yet the latter has its bounds; and, in the organs of sense particularly, an increased fulness of the vessels will compress the nerve, and destroy its functions. May we not however distinguish between a more active circulation, and distention from fulness, in consequence of less irritable fibres? This is probable, and merits consideration, as it will influence the practice; but it is not our present object. Compressing however the nerve will not immediately destroy the sensibility or irritability of a part, unless the pressure be near the organ. If at a distance, motion at least will remain some time, and be more quickly lost in proportion as the pressure advances nearer. The first Monro relates a similar experiment more pointedly. Grasp the phrenie nerve somewhat above the diaphragm, and draw the other hand along it, with some pressure towards the muscle. It will contract, and the experiment may be repeated; but the effect will soon cease, unless the pressure from the hand above be removed. If the pressure however, at whatever distance, is long continued, the power of the muscle is not recovered. In the organs of sense, pressure has a more rapid effect; we allude particularly to the amaurosis from plethora, which may perhaps arise from its acting so near the extremity of the nerve, divested of its defences. Independent however of pressure, various vegetable and animal substances will destroy the functions of the nerves, by an action wholly distinct from any change in the organisation, and, so far as we can perceive, from any chemical affinity: some gases will have a similar effect. Substances also which affect only the simple solid, as warm water astringents, or will give increased mobility or tone.

Affections of the medullary substance of the brain will, of consequence, affect the nerves. Irritation will increase their action, pressure destroy it, deleterious substances acting on any sensible organ, whose sympathy with the brain is strong and well established, be equally fatal to it. Disputes have arisen, whether any injury on the brain is felt in the nerves on the same or on the opposite side, for authors have imagined that the fibres of the brain cross each other within the cranium. This argument has been supported by some facts; and in the eye, by the fibres of the optic nerve evidently crossing each other in fish. In the human body, however, the rule is by no means without exception, even in the eye. Minute anatomists have however traced the fibrils of a nerve far beyond the spot, from whence it separates in a cord; and Soemering has traced the roots of the nerves, particularly those of the organs of sense, to the eminences in the parietes of the ventricles. We shall however speak of them in the common language of anatomists, as arising from the spot where they first appear distinct from the cerebral mass. They however separate from the brain at very acute angles, and can, for a time, be easily traced within its substance, and indeed all their divarications are equally at acute angles.

Is sympathy between nerves of distant parts owing to this connection within the brain? This has been the opinion of many authors; and, as it is wholly inexplicable in any other view, there is less reason for rejecting it. We shall soon return to the subject.

Before we speak more particularly of the functions of the nerves, and the source of their energy, we shall enumerate the principal branches, and in this part we shall chiefly follow the first Monro, and Viq. d' Azyr, in the order of Willis.

From the encephalon ten pair of nerves proceed. The *first pair* are the OLFACTORY, arising from the corpora striata, but by the older anatomists said to arise from the processus mamillares; because in brutes these points projected, and from the extension of the lateral ventricles they were hollow; consequently, in their opinion these nerves were designed to convey the mucus from the cold, moist, brain. They become larger as they pass under the anterior lobes of the brain, and are joined, at the os ethmoides, by a branch of the fifth pair. They are very tender, and, suddenly expanding on a large surface, cannot be traced far. These tender nerves are defended from the weight of the anterior lobes of the brain, by being sunk in hollows, which give them a triangular shape, and, from the varied depth of either sulcus, one nerve seems occasionally larger than the other. Towards the forepart, these nerves expand into an oval lobe containing cineritious matter, which lies on the bone. They are apparently the organs of smelling. The branches of the fifth pair appear to supply the arteries and the mucous glands; the first pair only conveying the sensation.

The *second pair*, the OPTIC NERVES, arise from the thalami nervorum opticorum, or more directly, according to Sabatier, from the tubercula quadrigemina, and after a long curve under the brain, unite at the forepart of the sella turcica, apparently blended. They then divide, and each running forward and outward, passes at its proper foramen into the orbit, to expand in the retina. It is, as we have said, sufficiently certain, on the whole, that the fibres do not decussate, though this certainly, in some instances, takes place. We have ourselves seen from a blow on the head an affection of the opposite eye. With the optic nerve the ocular artery enters the orbit, and occasions an insensibility at that point, which may be ascertained by an easy experiment. It is however equally probable that the nerve is not fitted for sensation till it is expanded in the very delicate web, the retina. This membrane is, as usual, plentifully supplied with arteries, and the active circulation, through them, greatly increases its sensibility, while distention, for any time, destroys it.

The *third pair*, MOTORES OCULORUM, first appear at the anterior part of the processus annularis, and going out, at the foramen lacerum, are dispersed on the muscles of the globe of the eye. In a more minute examination, they seem to arise from the internal margin of the crura cerebri, and the perforated medullary matter, between them; and they pass between the posterior artery of the cerebrum, arising from the division of the basilar artery, and the anterior artery of the cerebellum. Each diverges, passing under the anterior part of the tentorium by the cavernous sinus. The situation of this nerve, near the artery, accounts, in the opinion of Sabatier, for the weight on the eyes at the approach of sleep; in fevers and states of inebriation.

The *fourth pair*, PATHETICI OR TROCHLEARES, are the smallest of the encephalon, not exceeding in

size a common thread. They arise from the base of the testes, and running half round the root of the crura medullæ oblongatæ, adhere, by a membrane, to the anterior lateral part of the processus annularis, pass through the foramina lacera, and are spent on the musculi trochleares, the superior oblique muscles of the eye. They are called *pathetici* from their rolling the eye with violence or fury. The origin of the trochleares is however various, and they seem to have a more intimate connection with the brain than any other nerves; yet no part of their office shows such a connection, or appears important.

The *fifth pair*, TRIGEMINI, arise from the annular process, where the medullary processes of the cerebellum are joined to the tuber. This nerve seems to arise in two portions: the anterior is small, and somewhat elevated above the other; the posterior originates a little lower. These portions are connected by cellular membrane in which a little artery often creeps. In fact, though in a few individuals connected with the cerebrum, this is truly a nerve of the cerebellum. It enters the dura mater, near the point of the petrous process of the temporal bone, and sinking close by the receptacula at the sides of the sella turcica, each becomes thicker, forms a distinct ganglion, and passes from the skull in *three great branches*; one to the orbit of the eye and forehead, through the foramen lacerum; one to the upper jaw and face through the foramen rotundum; and another to the lower jaw and tongue, through the foramen ovale.

The *first*, the *ophthalmic*, before it passes through the foramen lacerum, sends off a branch to the intercostal, and forms the first connection between the two systems. It is then distributed to the glands, fat, membranes, and muscles of the eye, with a twig to the forehead, sending a considerable branch through the internal anterior orbitar hole to the brain, in order to join the olfactory nerve. These very extensive connections explain various morbid phœnomena, as the watering of the eyes, from a stimulus to the nerves of the nostrils, the effect of sneezing from a strong light, and stopping the same convulsion, by a pressure on the internal canthus, or indeed why sneezing itself, a convulsive action of the muscles of respiration, is occasioned by a stimulus to the nostrils.

The *second* branch, *maxillaris superior*, passes out at the foramen rotundum of the sphenoidal bone, and gives nerves to the palate, sphenoidal sinus, and nostrils, supplies the antrum maxillare, and the upper teeth. It comes out at the external orbitar foramen, previously sending a branch through the substance of the os maxillare, which comes out at Stenos duct, to be distributed on the fore part of the palate. The remainder, which passes through, is lost on the orbicular muscle of the eyelids, the nose and upper lip, where it seems to unite with some branches of the seventh pair.

The *third*, *maxillaris inferior*, goes out at the foramen ovale of the sphenoidal bone, and supplies all the muscles of the lower jaw, and those between it and the os hyoides. It sends a branch to the tongue, where it meets the ninth pair, and from the root of this last branch the chorda tympani is reflected, or rather the chorda is added to the lingual nerve. It then supplies the salivary glands, the tonsils, the external ear, where it joins a branch of the portis dura of the seventh pair, the teeth of the lower jaw, and from thence the chin and under lip. From these connections, convulsions of the lower jaw are attended with salivation, angina, with a pain of the ear and teeth, and the senses of smelling and tasting are probably related. If true, that compressing the nostrils will destroy the sensation of the palate, the reason will be sufficiently evident from this description, and we shall equally see why the tooth-ach produces convulsions, as well as why cauteries to the external ear, or blisters behind it, sometimes relieve pains of the teeth.

The *sixth pair*, the ABDUCENTES, the smallest, except the fourth, arise from the fore part of the corpora pyramidalia; and, in their passage below the dura mater, where they are contiguous to the carotid, appear to send off a reflected branch, and when joined with some from the ophthalmic branch of the fifth pair, to form the original of the intercostal. The sixth pair, somewhat enlarged, now pass through the foramina lacera to be lost on the abductor muscle of the eye. A dispute has been maintained with obstinacy whether the sixth pair sends or receives this branch from the sympathetic; but anatomists have not decided the fact, and the knife probably cannot decide. The eye, of all the external organs, is however the only one whose motions are sometimes involuntary, and the intercostal system is exclusively destined to those muscles which are not under the influence of the will. It is singular that this circumstance, though so obvious, and useful in determining the controversy, should not have occurred; but the distinction is in a great measure new. We may add, at this place, that the third, fourth, fifth, and sixth pair of nerves, pass a considerable way under the dura mater, along the sides of the sella turcica; surrounded with a reticular plexus of vessels, and very near the large trunks of the internal carotid, before they pass through the foramina of the cranium.

The *seventh pair*, the AUDITORY, appear to come from the side of the root of the annular process, behind the conjunction of the medullary processes of the cerebellum with the tuber, accompanied by an artery of an unusual size, and entering the meatus auditorius, divides into two branches, the *portio mollis* and the *portio dura*. These two branches however, on a minute examination, seem to have two distinct origins, the portio dura from the crus cerebelli, and the portio mollis from the striæ in the fourth ventricle. Prochaska indeed observes, that he has not been always able to trace their origin so far as these striæ; and, though many former anatomists of credit have supported this source, he thinks the striæ in the fourth ventricle by no means essential to the auditory nerve. The portio mollis soon loses its firm coats, and from this circumstance it is denominated. It enters the petrous bone, and in this softer state is disseminated on the internal ear. The other, supported by its harder coats, passes through Fallopius' aquæduct, in its passage by the side of the tympanum, where a nerve, sent to the lingual branch of the inferior maxillary nerve, along the outside of the Eustachian tube, and across the cavity of the tympanum (chorda tympani), is joined to it. The portio dura comes from the encephalon between the styloid and mastoid processes of the temporal bone, giving branches to the smaller muscles, and then passing through the parotid gland, supplies the muscles of the face, neck, and cranium, including the external ear. Its branches having thus a connection with the three branches of the fifth, and, as we shall see, of the second cervical, occasion numerous instances of sympathy, obvious to every one who reflects on their distribution.

The *eighth pair*, which from its principal branch is styled PAR VAGUM, rise from the superior and lateral part of the medulla oblongata, near the bases of the corpora olivaria, in distinct fibres. Strictly speaking, this pair of nerves consists of three distinct ones. The uppermost fibres, which may be traced separate from their origin, to their passage from the skull, is the *glosso pharyngeal nerve*, which supplies the tongue and the pharynx. The chief medullary substance is the *par vagum*, and there is an additional portion, from the spinal marrow, the *nervous accessorius*. The par vagum, after its escape from the encephalon, gives nerves to the larynx, pharynx, and the ganglion of the intercostal nerve. Then separating from the ninth and intercostal, which seemed to accompany it, merely to receive additional branches for the superior cardiac plexus, it runs down the neck, at the outer side of the carotid, between it and the jugular vein. As it enters the thorax, by passing before the subclavian artery, it divides into two. The principal nerve accompanies the trachea to the root of the lungs, while the right branch turns round under the subclavian artery, on the left, under the arch of the aorta, and ascends behind the trachea to the larynx. This ascending branch is styled the *recurrent*, and on the right side is sometimes double. It ascends behind the carotid, and sometimes passes round the root of the thyroid artery. On the left, which is lower, in consequence of its running round the arch of the aorta, it gives off filaments, which go to the lower cardiac plexus, after having united with the branches of the sympathetic. Branches are also sent to this plexus from the recurrent, under the subclavian of the right side; and, on both, communicating branches are observable from the recurrent to or from the intercostal, for it will be recollected, that the functions of the lungs are not wholly voluntary. When the recurrent has turned round the artery, it ascends in a direction to pass between the trachea and œsophagus, giving branches to each, but its final distribution is to the larynx; though Sabatier describes a branch, which sometimes ascends and joins the sympathetic, high in the neck. Cutting the recurrent, and internal laryngeal nerves, it was supposed, would destroy the voice; but, in consequence of the numerous nervous communications, it is weakened only. When the latter is cut, the voice is weaker, but acute; when the former, which chiefly supplies the cartilages, it is graver and hoarse. The par vagum, in its progress downwards, forms the posterior pulmonic plexus, and, passing into the abdomen, with the œsophagus, supplies the stomach, particularly its upper part, and is at last lost in the numerous plexuses of the abdomen. In this extensive course it almost rivals the intercostal; but its functions are not so distinctly appropriated. We must regard it however as the great link between the cerebral and the ganglionic system, between the voluntary and involuntary functions of the body.

The last portion of the eighth pair is the *accessory nerve* of Willis. It arises from the cervical nerves, passes up through the foramen magnum, and comes out with the par vagum, like a nerve of the brain. When it has escaped from the encephalon it leaves the par vagum, and attaches itself to the ninth pair, sometimes by a filament, passes behind the jugular vein obliquely downward and backward, perforates the mastoid muscle, giving branches to it, and then, as if still wishing for support, entangles its branches with the third and fourth cervical nerves, terminating in the posterior part of the trapezius muscle of the scapula. This peculiar distribution of the eighth pair will contribute to explain the reason, why tickling the fauces excites vomiting; the connection of vomiting and coughing, particularly in the hooping cough; the sensation of a ball in the throat, from distension of the stomach, perhaps the shrugging of the shoulders; and reply to the problem of Sabatier, why the more violent passions excite involuntary gesticulations.

The *ninth pair*, the LINGUALES, appear, first, at the inferior part of the corpora pyramidalia, between these and the corpora olivaria, rise in fasciculi, and in this disgregated state pass through the dura mater. They then unite and come out of the skull, by the condyloid foramen of the occipital bone, are connected with the eighth pair, and the ganglion of the sympathetic nerve. From its vicinity to the internal jugular vein, it is supposed to be compressed by it when full, as in paralytic, apoplectic, and even in drunken persons, occasioning a fulness and indistinctness of speech; for, as the name imports, it is at last dispersed on the tongue, united with the branch of the fifth pair, already mentioned as going to the tongue. When it comes out from under the occipital branch of the internal carotid, it gives off a branch called *descendens noni*, which passes over the trunk of the carotid, and under the thyroid vein. Two slender twigs, from the second and third cervical nerves, sometimes from the first origin of the phrenic nerve, unite to this descending branch, together forming a ganglion, or plexus, from which many slender nerves go to the neighbouring muscles. Thus the ninth pair of nerves appears to have most extensive connections with the eighth pair, the spinal accessory, the sympathetic, the cervical, and the phrenic nerves. Shall we prove from this, that "out of the abundance of the heart the tongue speaketh?" At least we know, that the motions of the tongue are sometimes involuntary. This nerve seems to supply the motions of the tongue, while the sense of taste, which is by no means confined to the tongue, is derived from the branch of the fifth pair. It will be evident however, that tremors of the tongue, and a loss of voice, often occasioned by hysteria, paralysis, and fevers, may, in a great degree, be accounted for, from these connections.

The *tenth pair*, or SUBOCCIPITAL nerves, which modern anatomists style the first of the cervical nerves, rise by two roots from the medulla spinalis, differing in many minute respects, which need not detain us in this place. The roots of this nerve are connected with the spinal accessory nerve, but seldom form a ganglion with it, and rather unite with the posterior roots of the second cervical nerve. The suboccipital nerve, passing transversely, and a little obliquely upward, goes out under the vertebral artery between it and the first vertebra of the neck. The trunk then rises a little way upward, swells into a kind of ganglion, and divides into two branches; the latter goes to the muscles of the head, the former chiefly adds to the ganglionic system. The following verses, from an old anatomist, comprehend the principal uses of each pair of nerves in their order.

Olfaciens Cernens, oculosque Movens, Patiensque,
Gustans, Abducens, Audiensque, Vagansque, Loquensque.

We shall add a table of the synonyms of all these nerves, for which we are indebted to Mr. C. Bell.

1st pair—Olfactory nerves.	*Carunculæ mamillares Math.* de Grad. *Processus ad nares.* Gonth d'Andernac. 8um par, Spigel. 1st pair of Willis.
2d pair—Optic nerves.	*Nervus visivus, seu visorius.* Carpi. 1^{m} *par antiquorum.* 2d pair of Willis.
3d pair—Motores oculorum.	2um par, Fallopii et Vesalii. Nerfs moteurs communs des yeux.—Winslow. 3d pair of Willis.
4th pair—Trochleares.	*Minor propago* 3^{ii} *Paris, id est* 5^{i} *recentiorum, Fallopii.* *Gracilior radix* 3^{ii} *Paris, id est* 5^{i} *recentiorum.* Vesalii. *Nervus qui prope nates oritur.* Eustach. 9um par Cortes; et Columb. 4th pair; or, pathetic nerves of Willis.
5th pair—Trigemini.	*Nervus anonymus trigeminus multorum.* 3um par Fallopii. et Vesalii. 5th pair of Willis. Trijumeaux of Winslow.
6th pair—Abductores.	4um par Fallop. *Radix gracilior* 5^{i} *Paris, id est* 7^{i} *recentiorum Vesalii.* *Par oculis prospiciens.* 8um *par* Casp. Bauhini. 6th pair of Willis. Nerfs oculo-musculaires, ou moteurs externes de Winslow.
7th pair — Auditory nerves.	2um par Alexand. Benedict. 4um par Carol. Stephan. 5um par Vesal. et aliorum. 6um par V. Horne. Portio mollis, of the Moderns.
7th pair — Nervus communicans faciei.	*Distinctus a molli nervus.* Fallop. *Portio, ut præcedens,* 5^{i} *Paris, id est* 7^{i} *recentiorum.* Vesal. Portio dura, of the Moderns. Le petit sympathique, of Winslow. Facial nerve.
8th pair — Glosso-pharyngeus.	*Qui ad musculos linguæ et faucium tendet. Fallop.* Le rameau lingual de la 8^{e} paire of Winslow. 8th pair d'Andersch. Superior fasciculus of the 8th pair of Willis. *Glosso Pharyngeus.* Haller.
8th pair — Par vagum.	*Nervus sextus* Galeni *et aliorum.* 5^{a} *conjugatio* Carol. Stephan. 7um par Alex. Benedict. 6um par Casp. Bauhini. 9um par Bidloo et Andersch. 8th pair of Willis. Le moyen sympathique of Winslow.
8th pair — Spinal accessory nerve.	The spinal nerve.
9th pair—Lingual.	7um par Fallop. Vesal *et aliorum.* 11um par Bidloo. 10um par Andersch. *Par linguale medium, vel nervus lingualis medius.*—Haller. Soemmering *et aliorum.* The hypoglossal, *sublingual,* or gustatory. The 9th pair of Willis.
10th pair—Suboccipital nerve.	10th pair of Willis. 1st spinal, or cervical nerve, of Haller.

The general course of the intercostal we have already described. To make however the view of the nerves more complete, we shall add a somewhat more particular account from the first Monro.

When the intercostal has escaped from the os petrosum it is joined by branches from the eighth, ninth, and tenth, and from the first and second cervical, to form the largest ganglion in the body, from which the nerve goes out to descend down the neck with the carotid artery. We have remarked, however, that this supposed origin is rather a branch sent upward, to it; but minuteness is here unnecessary. The intercostal, in its course down the neck, supplies the flexor muscles of the head and neck, and communicates with the cervical nerves; nor will it escape observation, that the motion of the head is often involuntary;

E'en mitred Rochester would *nod* his head.

As it is about to enter the thorax it again forms a ganglion, from which nerves are sent to the trachea arteria, and to the heart: those designed for the heart joining with the branches of the eighth pair, and passing between the two great arteries and the auricles to the substance of that muscle. The intercostal then runs down on the side of the vertebræ of the thorax, having additional nerves constantly sent to it from between these vertebræ. Where the addition is made to it from the fifth dorsal nerve, a branch goes off obliquely forward, which joined with others from the sixth, seventh, eighth, and ninth, forms the anterior trunk which passes through its own proper hole in the diaphragm, when it again forms a ganglion immediately above the cæliac artery, into which the eighth pair enters. From this, the nerves of the intestines, liver, spleen, pancreas, kidneys, and glandulæ renales, are derived. The posterior trunk continues in its straight course downward, communicating with the inferior dorsal and lumbar, and sending off branches to the kidneys and testicles. Some of its branches join with others, from the anterior trunk to form a ganglion, close to the inferior mesenteric artery, to supply part of the colon and rectum. The extremity of this nerve is even sent to the pelvis, to furnish the other parts there. In this progress the plexuses are numerous.

The SPINAL NERVES seldom rise in cords, but in separate fibres from the front and back part of the spine. They soon run into a ganglion, which is however chiefly formed by the posterior fibres, and they then acquire the firm coats peculiar to the other nerves. They are distinguished by the numbers of the vertebræ through which they pass, and the foramen is in the vertebra above. Seven come from the cervical vertebræ, twelve from the dorsal, five from the lumbar, and six from the false vertebræ.

The *first cervical pair* come from between the first and second vertebræ, and its branches are immediately connected with the tenth pair of the head, the second cervical and intercostal. It supplies the flexors of the neck; but its larger branches are sent to the extensors, though not lost on them, as a few pass through them, and are spent in the teguments of the occiput. Some of its fibres are connected forward with the fifth pair of the head, and the portio dura. Thus a pain in the neck is sometimes felt in hysteria; and, in tetanus, the first of the voluntary muscles affected are those of the neck.

The *second cervicals* unite, by branches, with the ninth of the head, the intercostal, and the first and third of the neck; and, by a large branch which comes out at the outer edge of the sterno mastoideus, with the accessory nerve. It is afterward distributed to the muscles and glands of the head and neck, as well as the external ear, where it is connected to the portio dura, sometimes to the first cervical. The remainder passes to the levator scapulæ, and the extensors of the head and neck; but, at this place, another branch is usually sent off to join the accessory, near the superior angle of the scapulæ. These connections occasion the pain to extend to the clavicle in inflammations of the parotid, and the head to be drawn toward the shoulder of the affected side.

The *third cervical*, on its passing from between the vertebræ, unites with the second; and a branch passing down, uniting with the fourth cervical, forms the *phrenic nerve*, which enters the thorax, between the subclavian artery and vein. It passes by the pericardium, in a sulcus, and is lost on the diaphragm. The last phrenic goes outward, to pass over the apex of the heart. From this circumstance, palpitations of the heart are often attended with an acute pain, which is referred to the left orifice of the stomach. The other branches of this nerve are distributed to the muscles and teguments of the lower part of the neck, and top of the shoulder. The consequence is, that any disease of the diaphragm, or the parts immediately contiguous, if they irritate this muscle, are attended with pain on the top of the shoulder. This is particularly the case in inflammations of the liver.

The *fourth cervical* sends off a branch, as we have said, to join with one of the third, to form the phrenic, and sends filaments to the neighbouring parts. It then runs to the armpit, where it meets the fifth, sixth, and seventh cervicals, and the first dorsal. These unite and again separate in a complicated plexus, supply the teguments of the thorax, and then divide into different branches to the muscles of the upper extremity. These groups we shall describe.

The first of these, the *scapularis*, passes to the semilunar cavity of the upper costa of the scapula, a hole formed by a ligament passing between the angles of the scapula. It next supplies the supra spinatus and the muscles at the back of the scapula.

The *articularis* sinks in the axilla to avoid the head of the os humeri, to rise again at the back part of it, and is dispersed on the muscles which draw the arm back or elevate it. The name is derived from its surrounding the joint.

The *cutaneus* runs, superficially, down the fore part of the arm, giving branches to the skin, and divides on the inside of the fore arm to supply the teguments and the palm of the hand. The branches of this nerve are sometimes injured by opening the basilic vein.

The *musculo-cutaneus* passes through the coraco-brachialis muscle, supplies the biceps cubiti and brachiæus internus; and passing behind the tendon of the biceps, and over the cephalic vein, is distributed on the teguments of the outside of the fore arm and hand. This is the nerve sometimes hurt in opening the cephalic vein.

The *muscularis* runs in a spiral direction from the axilla, under the os humeri, and backward to the external part of the bone supplying the extensors of the fore arm. A branch from the upper part of the fore arm, accompanying the supinator longus to the wrist, proceeds obliquely over the radius to supply the muscles on the back of the hand and fingers. The principal part, however, penetrates the supinator radii brevis to reach the extensors of the hand and fingers; and one part is sent to the ligament of the wrist.

The *ulnaris* extends along the inside of the arm to supply the extensors of the fore arm and the teguments of the elbow. At the lower part its course is somewhat oblique, that it may pass out at the groove behind the internal condyle of the os humeri, through which it runs to the ulna, supplying the neighbouring muscles and teguments till it reaches the wrist, when a branch is sent obliquely over the ulna to the back of the hand and the outside of the fingers. The largest portion of the nerve goes to the os pisiforne on the internal side of the wrist, where it sends off a branch which passes through the tendons to supply the interossei and lumbricales, terminating in the muscles of the thumb and fore finger. The remainder supplies the little finger, and divides into three branches, two of which pass with the sheath of the flexor tendons of the little finger to furnish its inside; while the other is disposed in the same way on the side of the ring-finger. Some of the branches, however, from the last cervical and first dorsal run distinct to the ring and little finger, since these are sometimes affected independent of the other fingers, and a pain or a violent paralysis of these, when they are exclusively affected, has been removed by a caustic at the internal angle of a scapula. A numbness of the fingers often arises from leaning on the internal condyle, and a blow on it gives a tremulous sensation through the fore arm and hand.

The last bundle, the *radialis*, passes with the humeral artery to the elbow, supplying the flexors of the cubit in its way. It then pierces the pronator teres, supplies the muscles on the fore part of the fore arm, and continues its course to near the wrist, giving branches to the muscles in its way. Near the wrist it sometimes gives off a nerve to the back of the hand and fingers, instead of a branch of the muscularis. The larger part of the nerve, however, passes behind the annular ligament of the wrist, supplies the thumb, and sends a branch on each side of the sheath of the tendons of the flexors of the thumb, fore finger, and middle finger, and one to that side of the ring-finger next the middle one. In each instance of these groups passing through muscles the action of these do not seem to affect the sensibility of the nerve, and we have already stated that the action of the muscles consists of contraction in length only.

The *twelve dorsal nerves* send each a branch to the intercostal, and others to the muscles behind. The principal trunk passes outward to the furrow in each rib, where they pass between the external and internal intercostals to supply the muscles and integuments of the thorax. The first dorsal having contributed its branch, forms with the two branches of the intercostal, as they come down the thorax, a considerable ganglion. The six lower dorsal nerves give branches to the diaphragm and abdominal muscles. The twelfth joins with the first lumbar, and gives nerves to the quadratus lumborum and iliacus internus.

The *five lumbar nerves* on each side communicate with the intercostal and with each other, giving branches backward to the loins. The first joining with the last dorsal supplies the abdominal muscles, the psoas, iliacus, and the teguments of the fore part of the thigh, while its principal branch, with other nerves, forms the crural nerve. The second passes through the psoas, and is distributed like the former. The third has a similar distribution. Branches of the second, third, and fourth make up the *obturator or posterior crural nerve*, which passing through the pelvis, goes to the thigh at the notch of the foramen magnum, between the pubis and the ischium, and is lost on the adductores and the teguments on the inside. The *anterior crural* is formed by united branches from the first, second, third, and fourth lumbar nerves, runs along the psoas, and escaping with the iliac vessels under the tendon of the external oblique, supplies the muscles and teguments on the fore part of the thigh. One branch of this nerve runs down on the inside of the leg, near the vena saphæna to the upper part of the foot; and is sometimes wounded in opening this vein, near the ancle. The remainder of the fourth and fifth lumbar join in composing the sciatic nerve. From this distribution we see the reason why a stone passing through one of the ureters, which crosses the psoas obliquely, will occasion pain when the body is erected; a paralysis of the thigh; a swelling, and a convulsive retraction of the testicle.

The *six pair*, which come from the *false vertebræ*, are composed of small nerves sent posteriorly to the hips, and larger branches anteriorly. The three first joining with the fourth and fifth of the loins, form the sciatic nerve; which, after sending large nerves to different parts of the pelvis, organs of generation, and the thighs, passes behind the great tuber of the os ischium, and over the quadragemini muscles, down the back part of the thigh, close to the bone, supplying in its way the teguments and muscles. When it approaches the ham it has the name of *poplitæus*, and sends off a considerable branch, which passes over the fibula, and sinking among the muscles on the outside of the leg, goes to the foot, and is lost in the upper part of the larger toes, having supplied the muscles and teguments in its passage. The larger branch of the sciatic, after having been equally liberal to the muscles, &c. sends a large cutaneous nerve down the calf of the leg to supply the outside of the foot, and upper part of the lesser toes. It then sinks below the gemellus, and distributes nerves to the muscles of the back of the leg, continuing among them till it passes behind the inner ancle: in the internal hollow of the os calcis it divides into the external and internal plantar nerves, of which the first is divided among the sole of the foot and toes, nearly as the ulnar nerve is distributed on the concave side of the hand; and the second is distributed nearly as the radial nerve.

The fourth, fifth, and sixth nerves from the false vertebræ are much smaller than the others. The fourth is soon lost in the vesica urinaria and rectum; the fifth is chiefly distributed to the levatores ani. The sixth, which may be considered as the substance of the ligamentum denticulatum, advances forward, and is

lost in the sphincter ani and the neighbouring teguments.

In general, the size of the nerves sent to the extremities are proportionally larger than those distributed to the different viscera; and the nerves of the inferior are larger than those of the superior extremities. We see, from the distribution of the nerves in the former, the cause of the numbness from sitting on one side, and why, in sciatica, the limb is not only weakened but wasted.

Such is the distribution of the nerves and the observations which they suggest. The nerves themselves, we have often hinted, do not differ from the simple solid, so far as chemical analysis has ascertained their nature; and the brain is apparently the same. When kept from the air it scarcely undergoes any spontaneous change; but in the air it soon becomes fetid, of a green colour, exhaling copiously ammonia. It contains phosphat of lime, of soda, and ammonia, though together in a very small proportion. The rest is apparently albuminous, though different in some of its affinities from albumen, and its real nature has hitherto eluded chemical investigation.

In our examination therefore of the NERVOUS INFLUENCE we must be guided by observation. We see cords extended from a common sensorium, consisting of pulpy matter, apparently fibrous, confined or defended by firm strong coats. These cords evidently convey impressions to the brain, and derive from it an active power, which a principle residing in the brain can direct to a determined end. Yet, for the purposes of mere animal life, a brain seems unnecessary, and what is a subordinate system in the human body, alone supplies the lower orders of animals: in them there is no common sensorium, apparently in the lowest, no volition. They seem to obey a principle which in the middle ranks of animated nature we call instinct, probably a necessary consequence of given stimuli in a system suitably organised. We must look then to the nerves themselves for the principles of sensation and of motion; for the brain is only a common centre, the residence of volition.

The phenomena of sensation and motion require a rapid communication from the extremities to the brain, or to that origin of nerves which supplies its place. The nerves are not elastic, and the idea that they convey impressions by tremors similar to those of a musical chord is consequently improbable. We acquire our ideas of solidity from resistance, and it may be said that this resistance which, variously modified, gives some information of the nature of the resisting body, may be the mean of conveying the impression to the mind. The numerous modifications, however, conveyed by the nerves, particularly by the nerves of the eye and the ear, are wholly incompatible with this system, and except, perhaps, the simple resistance, we obtain our knowledge of the nature of the resisting body by the medium of some fluid. It is at least generally agreed that the nervous power is a fluid. Dense fluids are incapable of rapid motion, so that it must be one of peculiar rarity; and as the effect continues for a short time after the object is removed, it is equally certain that this fluid is elastic. When we pursue the nerves to their extremities, where their peculiar functions are exerted, we find them depositing all their coats, so that the peculiar properties of nerves cannot reside in these; on the contrary, as they do not appear in their course, it is highly probable that this fluid, whatever it may be, is confined by the coats. We may perhaps adduce as an argument for the opposite nature of the nerve and the coat the experiment just mentioned of Reil, who found the one soluble in an alkali and the other in an acid. Again, when we compare the appearance of the nervous cords in the best microscopes with the delicate pulpy membrane in their sentient extremities, we are led to suspect, as already hinted, that the fibres, which appear in the greatest magnifiers, are in reality fasciculi of more delicate ones; and that, therefore, it is highly improbable they should be hollow, or contain, within cavities, any fluid. Yet the fluid adheres to the nerves with some force. The language of the first Monro respecting the phrenic nerve is, that it must be "*griped*" with one hand, and with the other "*stripped*" down in a direction below. Mr. Caverhill gives an equally strong representation of the necessary force; yet we must add, that these were applications to the nerves through their dense coats, the resistance of which it was necessary to overcome.

Every fact, every observation, as well as the most careful deductions from both, seem to show that the nerves are fibrous, that their power resides in a subtile, elastic fluid inherent in them, permeating freely through them, and confined by their coats, either from waste or an improper direction. This is no peculiar phenomenon in nature. The magnetic fluid is confined to iron in a peculiar state, and its direction is preserved by an armature of brass; the electric passes freely through metals, but is confined by glass or wax. Suppose, then, we now speak analogically, a metal divided into the minutest fibres, each coated with wax, and that coating deposited at one extremity: If the superior extremity is charged, the fluid will be conveyed with undiminished, possibly with increased, energy, to the lower. This analogy is realised in the torpedo. The galvanic shock, we have said, is of the nature of the electrical; it is peculiar to the nerves, which are disposed so as to confine it, and the principal nerves pass, in the electrical ray, commonly called the *torpedo*, under a muscle, which can check its influx. When the muscle is relaxed, apparently at the will of the animal, the whole force is directed to a given point. Like the nervous power, it is more active in proportion to the vigour of the animal; its activity is diminished by exertion, and is lost by death. We have said, that this is analogy only, but we may be allowed to add, it is analogy so close that it may assume a better name, and reason cannot revolt at its being styled a probable theory. Once more: electricity in activity excites the powers of a nerve following its fibres, equally confined by their coats. In a kindred fluid it will probably excite a similar activity, and the effect is the same with that of all inordinate stimuli, exhaustion, with a loss of irritability, which we commonly perceive from excessive excitement, or from deleterious miasmata; that it arises from excess of excitement is evinced by its causing pain and muscular contraction when not immediately fatal. See ELECTRICITAS and GALVANISMUS.

Whence then does this principle originate, how is it continued, how supported, and in what manner destroyed? These may be styled unfair questions, when we have professed to step, but a little way, beyond the confines of analogy. Yet we have no scruple to answer them. We consider then this fluid inherent in the nerves in their original germ, excited by the action which gives life, supported by the natural stimuli of food, warmth, &c. exhausted by too great excitement, or causes which at once destroy its activity, and ceasing finally to act when the solid which it accompanies loses its organisation by the gradual diminution of its arteries. When we speak of the natural stimuli we may be accused of using the jargon of Brown. But, in his system, life itself is a forced state: we contend only that the *support* of life depends on causes of excitement, a fact rather than an opinion; and these stimuli appear to act exclusively by supporting the circulation, while the decay of old age arises from the obliteration of the arteries. The arteries, however, not only give activity to the nerves in their extremities, but seem to have a considerable influence on them in their origin. The brain, we have seen, is coated to a certain depth with cineritious substance, a colour derived from numerous minute vessels; but in various parts of the substance of the brain, in the ganglionic system, even in the nerves themselves, striæ of a similar colour are discoverable. This circumstance has led to the idea that the brain was a gland, and the nervous a secreted fluid. The glandular apparatus appeared to Dr. Cullen so striking, that while he would not admit a secreted fluid for the purposes of sensation and motion, he thought it assisted NUTRITION: vide in verbo.

There is, however, another view to be taken of this subject. We allowed the fibrin of the blood to be the most highly animalised of our fluids; we admitted its contraction by the Galvanic stimulus, and gave its full force to the argument, though we disclaimed the conclusion that contraction was the result of such organisation. May it not then be said that the brain, a fibrous mass, is supplied with blood in vessels so exceedingly minute, that the circulation must be languid and the fibrin strongly disposed to separate; that if animalisation be connected with a fibrous structure, the cause will here be found adequate to the effect? It cannot, however, escape even a superficial inquirer that the animation of the fibre must be previous to the circulation; and every view which we have hitherto been able to take of the subject seems to show that the primordial germ is fibrous, and that it is animated in the moment of conception. If this be true, the separation of the fibrin is an effect only. But may it not supply nervous substance once lost? The question will arise, is nervous substance *ever* supplied with its original powers and functions? We think not. Nerves are united like any other simple solid; but from the experiments of Fontana, and his microscopical views of the united nerve, it seems to be only joined by a dense cellular substance. If the sensation below is not destroyed it is weaker, and we have every reason to believe that neighbouring nerves, when one is destroyed, acquire additional powers to supply its place. The fact recorded by Santorini is a very strong one, that the origin of the portio mollis was particularly large in a blind man, whose hearing was peculiarly acute.

We have seen various communications between the nerves after escaping from the encephalon, and the influence of these communications in exciting what have been styled sympathetic motions. Many others (see SYMPATHIA,) cannot be explained by any known nervous connection, and physiologists have supposed with great reason that the nervous fibres communicate in the brain. We have seen that such communications are very extensive.

The sensibility and importance of a part must not be estimated by its proportion of nerves. Those of the heart are few and small, and some parts of the body, particularly the more compact ones, are acutely sensible when inflamed, though very inconsiderable fibres have been traced to them. This has appeared so striking to some physiologists, that they have been inclined to believe a nervous aura, from neighbouring organs, could give sensibility. Such is the opinion of Reil, but a highly improbable one. Many animals, as leeches, were said to be destitute of a nervous system, till they had been more accurately examined; and some parts of the body equally so, till the small nervous branches had been more minutely investigated. It is not at present asserted that the generation of mosses is equivocal because the fructification of some kinds has not been indisputably demonstrated. We may be allowed in this place to sum up very shortly the whole doctrine which we have endeavoured to establish on this subject; though it will lead to some repetition, we are now by the additional steps enabled to give a complete view of the whole.

The primordial germ exists seemingly in the female. It is animated by the male, who certainly influences the form, the habits, the temperaments, and constitutional diseases. This germ contains in embryo the fibrous parts of the body only, convoluted into a form so minute as to escape for a time the assisted sight, and of this fibrous germ the principal part is the brain and nervous system, the *carina* of Malphigi. This animated nervous system gives vigour and activity to the other fibrous portions, the muscles, which soon impel a fluid, received from the maternal part of the uterus, and gradually evolve the rest of the body in succession. While the nervous power animates the arteries it receives from them in turn a greater degree of vigour and activity. Inorganic matter is gradually added between the fibres, which is either loose in a cellular substance, or compacted with the fibres into membranes. Thus the body by degrees acquires a bulk. Its shape and form depend on that of the original fibrous, or more strictly the nervous, germ; for the body cannot expand beyond the point to which the convoluted nerves are able to extend, without death ensuing. That they will occasionally admit of a somewhat greater extent we see from painful tumours, which are supplied with arteries at times apparently of recent formation. If there is a power in the constitution to form new arteries, probably it is limited to the power of extension in the nerves. If it was unlimited, deformities and irregularity of figure would destroy the peculiar dignity of the human frame, and we should be justified in attributing all to chance.

Man thus slowly expands, and successive organs of peculiar structure, destined for their varied functions, are gradually evolved. The arteries, however, after a certain period begin to lose their energy; the blood is accumulated in the veins, the smaller vessels are obliterated, sensibility and irritability proportionally decrease, till the animation of the brain can be no longer supported, or some important vital function be discharged. The whole machine is then no longer in action, and the affinities of unanimated matter reduce it again to earth, to oil, to salts, and air!!

See Winslow's Anatomy; Monro's Dissertation on the Nerves, annexed to his Osteology; Steno, Vieussens, Willis, Ridley, Leuwenhoeck, and Ruysch; Whytt on the Sympathy of the Nerves and Nervous Disorders; Kirkland's Dissertation on the Brain and Nerves, and on the Sympathy of the Nerves; Monro's Observations on the Nervous System; Vicq. d'Azyr Anatomie du Cerveau; Soemering de Cerebro et Nervis; Scarpa Tabulæ Neurologicæ.

NE'RVI VA'GI, NERVI SYMPATHE'TICI MEDII, NERVI STOMA'CHICI. See PAR VAGUM.

NERVI'NA, (from *nervus, a nerve*). See NEUROTICA.

NERVO'SA FE'BRIS; *morbus cardiacus.* Nervous fever is the milder typhus of Cullen, and might perhaps with propriety have been referred to that head; but it is also so nearly connected with those slow fevers which sometimes arise from a sedentary life, from internal obstructions, and other causes, that it can, perhaps, be more advantageously considered in this place.

NERVOUS FEVER, the typhus mitior of Dr. Cullen, is defined, a contagious disease, in which the heat is not much increased; the pulse small, weak, and *generally* frequent; the urine little changed; the functions of the sensorium much disturbed; and the strength greatly diminished. In the early stages there is no particular symptom to distinguish it from nervous diseases with fever, except the constitution of the patient, the existence of an epidemic, or occasionally a marked attack. In general, nervous fever comes on slowly, with occasional chilliness, so slight as often to elude the attention and escape the recollection. It is, however, from the beginning attended with giddiness, or a mist before the eyes by day, and a want of sleep by night. A great lassitude, frequent yawnings, with flying pains, increased greatly towards the evening, want of appetite rising even to loathing and nausea, sighing, oppression at the region of the stomach, with dyspnœa, in succession come on. This gradual increase of symptoms, with the peculiar pale, sunk countenance attending fever, will give the alarm, even when other nervous diseases with which the earlier symptoms have been confounded are present. The tongue continues for a time with little change, but is occasionally rough and dry, and after a few days white, at last assuming a browner hue. The pulse are usually quick and small from the beginning, and perhaps Dr. Cullen has been too cautious in stating it only, as "for the most part" frequent. The skin is generally dry, though profuse, clammy, debilitating sweats come on about the third day, and the heat is at no time considerable. After about the tenth day the weakness increases considerably; the tremors become convulsive; with despondency and alienation of mind, at first observable only in the night, but soon continuing with little intermission. It is, however, only the mild delirium of pathologists; wandering rather than phrensy.

The disease is often protracted to the twenty-first day, and often to even a longer period. It seems seldom to have a regular crisis, but gradually proceeds to a fatal termination in debility and convulsions, or a gradual restoration to health, evinced by more natural sleep, a more favourable appearance of the look, the tongue more florid at the edges, the mind more collected, the nausea disappearing or changing to an appetite, often whimsical and unsteady, but still distant from the former loathing.

We have stated sufficiently the distinction of *nervous fever* from *nervous diseases with fever.* If the chilliness is not observable, the look and the evening exacerbation will generally decide, for purely nervous diseases are easier towards night. Another distinction is not less striking. Though in nervous diseases the appetite is capricious, yet food of a proper quality, and in moderate quantities, is borne with ease and even advantage. In fever it always overloads. In the former, wine cheers; in the latter, it heats and oppresses. Yet in the beginning of nervous fever, error is often unavoidable.

Nervous fever is seldom sporadic, and when epidemic usually proceeds from the common causes of epidemic fevers, viz. miasmata; nor is there any doubt of its being occasionally contagious. The form of this fever arises probably from the constitutions it affects, viz. the languid, the studious, and the sedentary. What in a crowded jail, in a camp, or in a besieged town, would be typhus petechialis, in a city where the air is free but the constitution debilitated, is probably typhus mitior or nervous fever. The disease is not, however, essentially different, and every cause of weakness predisposes to it.

The cause of fever we have endeavoured to show is debility, perhaps more strictly a debility of the sensorial power, attended with irregular action of the whole muscular system, and its consequences internal congestion, particularly, for the reasons stated, in the liver and the brain. We should not have repeated this opinion were it not to show how nearly it approaches to that of Dr. Clutterbuck, which in the moment of writing has reached us. He supposes fever a local disease, and to consist in inflammation of the brain, which, from its connection with the whole system, induces the various disorders in the vital, the animal, and the natural functions. We mean not to urge, in contradiction to his fair and well-drawn inductions, that the intercostal system is distinct from the cerebral, and not likely to be affected by it, for this at present is untried ground, but to remark, that in his argument he seems not to have attended to the distinction between active inflammation and congestion. He distinctly proves the latter, but not the former. The best practitioners at this time will not admit of any practical distinction between membranous or parenchematous inflammations, but no doubt can arise respecting the greater or less degree of inflammatory action. If this object had been in our view, we could not have pursued the distinction more closely than we have done in the article INFLAMMATION, q. v. and in the various parts of this

work where we have pointed out the effects of congestion as distinct from inflammation. The real difference arises first from age, where the congestion is chiefly venous; secondly, from the degree of the vis a tergo, excited by the obstruction. In the brain the limits in the first case are the apoplexies in advanced life, and those cases which Hoffman calls *hæmorrhagiæ cerebri*; in the second, the languid inflammation from CONCUSSION, q. v. and the active ones which produce phrenitis. To come nearer the present point, the state of the brain in violent delirium from inflammatory fever, and in the mild delirium of the nervous, seems to be equally at the extremes of the beam; and though the former approaches phrenitis, the latter is far distant from it. With these distinctions we fully agree with Dr. Clutterbuck in his ideas of the state of the brain during fever; nor do we wish for more able supports of our opinion than the facts which he has so industriously collected, or so ingeniously applied.

There is, however, yet another view which we have taken of the subject, and which we think requires equal attention, viz. the state of the epigastric region, and particularly of the liver. This seems in the treatment of every fever to require a very particular attention, nor will the arguments which show the influence of the brain on the digestive organs explain the fulness, the tension of the region of the liver, or explain the necessity or the good effects of laxatives. In the disease before us the epagastric région is generally tense; and stools are easily borne. The affection of the head is the delirium mite only of pathologists. In fact, the debility is so great that the alteration in the balance of the circulation is less obvious, and the practice has been generally feeble and inefficacious; or mistaken and ill-directed.

We might refer in general to the observations on the remedies of fever (see FEBRIS); but some modifications are necessary. Even when *bleeding* was considered as indispensible, the lancet was dreaded, or employed in this disease with a timid caution. Practitioners have since found it injurious, and even fatal; nor is there any period when it appears truly indicated. *Emetics* are useful in the beginning, but the active exertions of vomiting prevent their frequent repetition, as they seem to exhaust the strength and diminish the excitability: nauseating doses of antimonials exhaust it still more, and are highly injurious. *Purgatives* seem also to have been forbidden, as lowering the strength and lessening the vital powers; yet, at a time when in more active fevers clsyters were chiefly trusted, and we were told with the most frigid caution that if stools were necessary they must be procured by their means only, we shall not be surprised to find that in cases of such great debility the increase of the alvine discharge was dreaded. Nervous *epidemics* are, however, peculiarly rare, nor have we had an opportunity of bringing the use of purgatives to the test. In the last we saw they appeared injurious; but in the sporadic cases of this nature we have found them rather beneficial: but in such the practitioner must be "with caution bold."

The Peruvian bark would appear to be strongly indicated, and it has had powerful recommendations. Yet the period at which these recommendations appeared give us some room for doubt. It was when fevers of the continued kind were supposed to consist of repeated paroxysms, and to be as easily checked by this remedy as intermittents. Practitioners too often see what they wish, and medicines always appear to answer a preconceived opinion.

The management, in which all seem to agree, is to *check colliquative sweats*, which often arise, by free cold air and cold drinks; to give wine with caution, according to the state of debility, and *opiates*, with or without stimulants, which alone seem to act as cordials. Yet to these we would add *blisters*, which are certainly necessary to lessen the accumulation in the brain, and *laxatives* at least to such an extent as will prevent or lessen the infarctions of the liver, which are inseparable from every fever which we have seen. The power of the laxative should be adapted to the patient's strength; but his feelings and his pulse, after every evacuation, should be carefully examined, for from thence we should draw our indications for their repetition. We strongly suspect that the bark would have been found a more useful medicine had laxatives been properly premised; but in the use of this remedy practitioners have been peculiarly timid.

Camphor is a medicine which has been spoken of differently, according perhaps to the nature of the epidemic, or the prejudice of the practitioner. In general, it promises to be effectual; and the ether, which seems never to have had a fair trial, is a remedy of equal, apparent, value. While the colliquative sweats have been often a troublesome symptom, practitioners have greatly feared the semicupium or warm fomentations; yet, in a low temperature, when the sweats do not come on, they may be useful. They should never be higher than 96° nor below 92°. The cold affusion has not been tried, though sponging the body with cold water, or water and vinegar, was no uncommon remedy among the ancients. The heat of the body is, however, so inconsiderable, that sponging only can be admitted, and this should be employed with caution.

When convulsions come on, either camphor, castor, or opium, are necessary; and these in combination are often highly useful. In this state also, mosch and the fetid gums have been employed with considerable advantage. Whatever be the inconveniencies of the bark during the fever, it greatly assists the recovery of the strength during convalescence. The debility is often considerable, nor have we seen any fever where the mind is reduced to more infantine weakness.

NERVOSI MORBI, the *neurodes* of Dr. Cullen, may seem to require some particular notice. These, however, occur under their respective heads; but a term so generally employed may be sought for in a dictionary, and we shall endeavour, on the foundation of our nervous pathology, to give some general and more distinct views than may be found in former authors, in the most concise, comprehensive, form.

The two great divisions of the morbid states of the nervous system are increased or diminished sensibility, connected with increased mobility and torpor in the moving fibres, with tenderness or firmness in the simple solid. The deranged state of the nervous system is chiefly considered in the article MANIA, q. v.

Nervous diseases, in the common meaning of the term, chiefly consist in the former state, in which, to

prevent prolixity, we shall constantly include its connections. This constitutes the hysteric constitution, and indeed, in imagination, "all the evils flesh is heir to." In hysteria, we considered that marked definite affection, distinguished by its appropriate symptoms; but there are many complaints depending on excess of excitement, sometimes within the limits of health, though occasionally stepping beyond the first boundaries of disease. As they are so numerous, we must pursue them in the different functions, distinguished as *vital*, *animal*, and *natural*.

The vital functions suffer numerous inconvenient deviations from their natural regularity. The circulation is usually rapid, but often greatly accelerated and irregular, not only in the synchronism of the action of the heart, but in the direction of the circulating fluids. We thus find, from the slightest excitement, the pulse unusually rapid; the heart fluttering with irregular beats; the face flushed, while the extremities are cold, or a sensation of cold water pouring down the back is felt. The respiration is equally irregular; the lungs are ineffectually expanded, and inspiration repeated, to relieve the anxiety thus occasioned. At times, the respiration and circulation cease, and a death-like faintness, attended occasionally with convulsions, supervenes.

These symptoms recur at irregular intervals, and sometimes vanish spontaneously, leaving the usual delicacy of infirm health, but no particular inconvenience. They are induced and carried off by causes equally slight, and leave the patient subject to the charge of caprice, fancy, or dissimulation. Thus they are brought on by a sharp noise, a fetid odour, a disagreeable object, and carried off by similar means. To rouse the attention, to keep it suspended by anxiety and expectation, in fact to take the patient from herself, since the morbid affection is almost peculiar to females, furnishes the best plan for relief. To bring on misfortunes is not the province of the physician, but accidental ones raise her above herself.

In the animal functions, the tendency to disease is no less conspicuous. The sensibility is extreme, and the "Miseries of Human Life," overcharged perhaps in the modern popular publication, are wholly the patient's own. The wind blows with too suffocating or too chilling a breeze; the birds chirp with too shrill a sound; the odour of new-mown hay is offensive; and the glaring sun blinds the too tender eye. As the Indian is all face, the nervous patient feels in every organ as if that organ had no defence.

The affections of the *natural functions* are mixed with those of the vital and animal. The muscles, in general, are susceptible of sudden and violent contractions, no longer obedient to the will. These arise to hysteric, sometimes to epileptic, paroxysms. The appetite is capricious, irregular, and occasionally depraved; the stomach often distended with flatulence, and disturbed with borborygmi; the bowels unequal in their exertions; the kidneys occasionally yielding to the impulse of the blood, and secreting a serous fluid with little change, sometimes resisting the usual impulse, or obeying it, after some delay, when the urine is highly charged with its animal salts and oil.

Nervous patients, in this way, suffer acutely with little commiseration, and few attempts at relief. They are told that they must be their own physicians, and are left to the pity, often to the ridicule, of the world. Yet, though not diseased, they nearly approach disease; and the only remedies are those which blunt too great sensibility, and those which restore the balance of the circulation.

To begin with the latter. An equable warmth is necessary, and every means by friction, by rubefacients, and by exercise, of keeping the lower extremities in a due temperature, are highly salutary. Exercise, however, should be employed with caution. If so violent as to fatigue, and a little *will* fatigue, it is injurious; nor can nervous patients often endure the requisite degree of bodily exercise without inconvenience. A carriage, or a horse, are therefore required, but, in each, the mind preys on itself, and it may be literally said, *post equitem sedet atra cura*. No general rules can be therefore laid down: the prudent physician will adapt his advice to the circumstances and the disposition of his patient; but, in general, a journey, cheerful company, a change of scene and of engagements, will best succeed. Thus do the fashionable watering places, the chalybeate springs, triumph.

Another mode of keeping up the due balance of the circulation is by the use of laxatives. The convulsive motions of the muscular organs take place in the stomach, and distension of this organ, followed by eructations, are often a most distressing symptom. It is necessary then to keep up the peristaltic motion of the bowels, which, while it contributes to carry down the flatulence, relieves the fulness of the vessels above. The medicines which succeed most effectually for this purpose are the stimulant cathartics, which increase the action, the peristaltic motion of the intestines, particularly the aloes and the rhubarb, and the effects of these are greatly increased by uniting them with the fetid gums.

Too great sensibility is blunted by various narcotics and carminatives. The complaints of the stomach are relieved by the fetid tinctures, by the warmer carminatives, and by every stimulus. It is painful to be obliged to add, that what was first resorted to as a medicine is often continued from habit, and the officinal tincture is exchanged for common spirits. Let therefore every nervous female be cautious in this respect, for thousands have been thus incautiously enticed to their ruin—the ruin of their constitutions and of their moral character. Let them recollect that aqua ammoniæ is less dangerous than brandy, and that infusions of pepper-mint, of rosemary, or the warmer aromatics of the east, though injurious in excess, are far less so than what are styled indirect stimulants, which lull rather than relieve pain, which intoxicate the senses, instead of removing the disease. In such cases, for this purpose, opium is often an useful remedy, but it should be confined to medical exhibition. In excess it acts only as a dram, and we fear, like spirit of lavender, is often used as such, under the name of medicine; many a patient "*prætexit nomine culpam*."

Other narcotics are the henbane, the cicuta, perhaps the bayberries, and the narcotic bitters. The two former have been recommended as not producing costiveness, and the henbane seems particularly useful. The bayberries, though stimulant, unite the narcotic powers of the plant, and are often useful remedies. To restore the strength is rather to repress the mobility; and, in

this latter view, bitters appear chiefly useful. The narcotic ones are most effectual, and those which unite astringency often fail of producing the expected benefit. If the bark is ever useful, it is when combined with valerian. Acid in the stomach is corrected by lime water, by magnesia, often by the acid of vitriol, and sometimes even by columba root; occasional spasms by the fetids and carminatives. The metallic preparations, particularly iron, often recommended, are too powerfully astringent; and zinc, lately introduced in union with columba, often injurious. We have lately learnt from Dr. Bardsley that the oxide of bismuth is highly useful in these complaints, and that it calms the irritability of the stomach more effectually than any other medicine. This medicine was originally recommended by Dr. Odier, and communicated to the public by Dr. Marcel. (See BISMUTHUM). It is particularly adapted, however, to the increased irritability in consequence of a schirrous pylorus; and perhaps before we arrive at the article SCHIRRUS, we may be able to communicate the result of our own experience. Free air and large rooms are indispensable; and sea bathing often gives tone without increasing the inflammatory tendency. To discharge accumulations of phlegm, emetics are occasionally necessary, but should not be too often repeated.

What may be styled the moral treatment of such complaints requires a steady hand. While to ridicule fancies, not in the patient's power, is inhuman, to humour them is an indulgent cruelty. Every imagined feeling is to them a reality, every whim a want. Reason is often unavailing, authority is harshness, and a cold indifference cruel insensibility. Their own reason is inadequate to the task of correcting their wanderings, for they are truly such, nor will they hearken to that of others. In general a kind indulgence in trifles, and a steady firmness in opposing the wilder eccentricities, is useful; and to point out with an affectionate mildness the errors, and their apparently certain consequences, will often succeed. Much however must be left to the prudence and judgment of the attendant, which must be regulated by the patient's temper and habits. The attendant should however have the confidence of the patient, which she should never forfeit by unnecessary harshness, or abuse by injurious indulgences.

Nervous diseases of the opposite kind are, we have said, those of torpor. Less varied in their forms and symptoms, we need not so studiously distinguish the functions affected, though we shall silently follow the same order. In these diseases, then, the circulation is slow, and sometimes sufficiently regular; but the equilibrium is by no means properly balanced. The liver and the brain, as usual, when the fluids are not properly distributed to the surface, have a large share; and as the muscular fibres are with difficulty excited to action, congestions, in each, take place. In the brain these appear by all the marks of compression, languor, inactivity, and insensibility: in the liver, by costiveness, indigestion, and a dark yellow hue on the skin. "Thick coming fancies" disturb the mind; the sleep is interrupted, or a torpor resembling sleep, in all but its refreshing power, succeeds. The appetite is inconsiderable, but sometimes voracious and indiscriminate, and the bowels generally torpid. It is the disease, as we have had occasion to remark, of the sedentary and the studious, who are found by the midnight lamp, and cheer or instruct the world at the expence of their health and constitutions; for the mind is often vivid, when the body is depressed. The divinæ particula auræ will often appear then to burn with peculiar lustre; nor is this, when properly considered, an objection to our former opinions.

The remedies of this state are exercise, blended with some interesting occupation; an attention to the state of the bowels; and, above all, every method of keeping up the balance of the circulation, particularly directing it to the extremities. In general, the conduct in cases of MELANCHOLIA, q. v. of which this is a less degree, will be proper. The tepid bath, for reasons which will be readily understood, is a valuable remedy.

For nervous fever, see Huxham, Gilchrist in the Edinburgh Medical Essays, and Sydenham.

For nervous diseases, Whytt, and the authors referred to under the article HYSTERIA.

NERVO'SUS, (from *nervus*, a term in botany), applied to a leaf whose vessels extend in lines from the base to the top without meeting. Nosologically, an epithet annexed to fever, and other diseases, where the nerves are supposed to be chiefly, and often primarily, affected. See NERVOSA FEBRIS and NERVOSI MORBI.

NERVO'RUM RESOLUTIO'NES, (from *resolvo, to loosen*). See COMATA.

NERVO'RUM TUM'ORES, are discovered by the pain being felt only in the direction of the nerve, particularly below. They may be extirpated without danger; but it is safer to divide the nerve than to run the risk of inflammation, unless it is large or highly important. See Home, in the Transactions for the Improvement of Medicine and Surgery.

NERVO'RUM VULN'ERA. Wounds of the nerves are often attended with very troublesome symptoms, and trismus or tetanus have been the consequence. The general opinion has decided, that if the nerve be wholly divided, the effect may be avoided or lessened, and, with the remedies proper for these spasms, a division of the nerve is also necessary. In bleeding, the nerves, as we have shown, may be easily wounded; and when it is seen which vein has been cut, the injured nerve is immediately known, and it may be readily traced by dissection, so as to divide it above the wound. Mr. Pott supposes, that, as the wound must be at the upper or under angle of the orifice, it may be sufficient to enlarge it either above or below. In fact however the injury first produces inflammation, probably from the external air being admitted into the sheath of the nerves, and it will be therefore preferable to divide it above. Mr. Bell thinks a transverse incision above the original wound a sufficient security; but the dissection and division of the nerve above is the preferable plan. See TRISMUS.

NE'STIS, (from νε, *non*, and εσθεω, *to eat*). See JEJUNUM.

NEU'RI. See NERVI.

NEUROCHONDRO'DES, (from νευρον and χονδρος, *a cartilage*). A hard, round, cartilaginous ligament; sometimes a substance harder than a cartilage, and softer than a ligament. CASTELLI.

NEUROLO'GIA, (from νευρον and λογος). NEUROLOGY. A description of the nerves.

NEUROMETO'RES, (from νευρον and μητρα, *matrix*). See PSOÆ.

NEURO'SES, (from νευρον, *a nerve*), Nervous Diseases form the second class in Dr. Cullen's nosology, comprehending preternatural affections of sense or motion without fever, as a primary disease; and those which do not depend upon a topical affection of the organs, but upon a more general affection of the nervous system, and of the powers on which sense and motion more especially depend.

NEURO'TICA, vel NERVI'NA, (from νευρον, or *nervus*). By nervous medicines are meant those suited to relieve the diseases or correct disorders of the nervous system. The obscurity which still attends the mode of the operation of medicines upon the nervous system might excuse this term; but it is too general, and the whole subject will continue in obscurity until more precision is attained.

NEUROTO'MIA, (from νευρον and τεμνω, *to cut*). An anatomical dissection of the nerves.

NEUROTRO'TOS, (from νευρον and τιτρωσκω, *to wound*). A person who has received a wound of a nerve.

NEU'TRALIS, (from *neuter, neither*). Neutral. Salts, formed of such proportions of acid and alkalies that neither predominates in the compound. They are in general *evacuants*, i. e. cathartics, diaphoretics, and diuretics; refrigerants or anti-emetics. Those which are formed of an acid and an earth, or an acid and a metal, are less strictly neutral, since they admit of very different portions of acid without materially altering their qualities.

NHA'MBI BRASILIE'NSIBUS, Lin. Sp. Pl. 1457? A plant in Brasil, whose leaves, when chewed, taste like mustard or nasturtium, and, if rubbed on a bubo, presently remove it. See Raii Historia.

NHA'MBU GUA'CU. See Cataputia.

NHA'NDU, *piper caudatum*, a small shrub which grows in the woods in Brasil, and bears a species of katkins, full of round blackish seeds, as large as those of the poppy, and with a taste resembling that of pepper. The plant is little known, but it seems to be a cubeb, and by later authors has been referred to the genus *piper*, with the trivial name of Cubeba, q. v. See Raii Historia.

NI'CKEL. See Chemia.

NI'CON. See Helleborus.

NICOTIA'NA, (from Nicot, the name of the man who first brought it to France). *Petum; tabacum; hyoscyamus Peruvianus; picelt; nicotiana tabacum* Lin. Sp. Pl. 258; a plant with alternate leaves and monopetalous tubulous flowers, divided into five sections, followed by an oval capsule, which opening longitudinally sheds numerous small seeds. It is an annual, sown in spring, and flowers in July.

Nicotia'na America'na. American or Virginian tobacco, hath large sharp-pointed, pale, green, short leaves, about two feet in length, joined immediately to the stalk without pedicles. First brought from the island of Tobago about the year 1560, and from thence called *tabacum*, now cultivated in many parts of Europe. Sir Francis Drake first brought it into England, and Sir Walter Raleigh rendered it fashionable. M. Thevet disputes with Nicot the honour of having introduced it into France.

The history of tobacco is singular. The production of a little island, or a little district in America, it has fascinated the whole world. The Arab cultivates it in the burning desert; the Laplanders and Esquimaux risk their lives to procure this delicious refreshment; the seaman endures every privation while he can obtain this luxury; and the financier collects from it a copious revenue. Yet its fame has not been without occasional diminution. It has been opposed by physicians, proscribed by governments, and yet the fashion long prevailed; nor, until men were more humanised by female society, was the custom of smoking at least less prevalent.

The leaves have a strong disagreeable smell, and a burning acrid taste, yielding their active parts both to water and to spirit, but most perfectly to the latter; a very small proportion of its virtues however rise in distillation from either; but the watery extract is less pungent than the leaves, and the spirituous not greater. The American tobacco is stronger than that raised in England, and affords a more pungent extract, though in less quantity. This plant is evidently a narcotic, as is evinced by its botanical analogy, and effects. Small quantities snuffed up the nose have produced giddiness, stupor, and vomiting; and in a larger quantity there are instances of its being even a poison. But with these narcotic qualities it is said to stimulate, especially in the stomach and intestines, so as readily, in no great doses, to prove emetic and purgative, occasioning extreme anxiety, vertigo, stupor, and disorders of the senses: in proper quantities it is, however, an effectual purgative in clysters. See Hernia.

The stimulus is however imaginary, for we have learnt that every narcotic will produce irregular action; and the vertigo and faintness, which always attends, when it produces vomiting, show it to be exclusively narcotic, except in the nostrils and mouth.

From its sedative power arises all the fascination of this plant. It gives that calm serenity always occasioned by the abstraction of stimuli, and, like tea, opium, and the betle nut, composes the mind under the greatest distress. It is necessary, however, to examine its effects in all the varieties of its use.

It certainly stimulates the nostrils, for it produces a pungent sensation and a discharge of mucus; but, as we have remarked, stupor and vertigo, and, in those accustomed to it, a tranquillity and a pleasing delirium.

Its stimulus to the salivary glands is more doubtful, for the action of chewing will alone excite their action. Yet it seems to produce the discharge more powerfully than the motion of the jaws will explain; and the tobacco, thus dissolved in the saliva, is always in some degree, and often copiously, swallowed. It then acts on the stomach, producing all the inconveniencies of a narcotic poison, acidity, flatulence, indigestion, depraved appetite, &c. The same symptoms follow taking snuff, as a portion of the tobacco generally falls through the posterior fauces into the stomach. The advantages of each mode are nearly the same. The discharge of phlegm which they produce relieves accumulations in the head, and all the diseases depending on them. See Errhina and Sialagoga.

In *smoking*, the oil of the tobacco is separated, rendered empyreumatic by the heat, and of course applied to the fauces and lungs in its most active state. Musing over a pipe assists, it is said, reflection: its smoke accompanied Newton's "patient thinking," and added

to the wisdom of the politician; but it is now forbidden in the drawing-room, as well as the dining-parlour, and confined to the ale-house. Like other forms of taking tobacco, smoking occasions a tranquillity, a freedom from care, a slight and harmless intoxication, increasing also the discharge of saliva.

Smoking generally produces a considerable discharge of this fluid, and from it, as well as the warmth, has been occasionally useful in pains of the teeth, in rheumatic affections of the head and jaws, and in asthmas both serous and spasmodic. It lessens however the appetite, blackens the teeth, and renders the whole person most offensive to those who possess the slightest delicacy of smell, or to whom a clean appearance is acceptable. The advantages of tobacco, in each mode, may be attained by errhines, sialagogues and expectorants of less equivocal nature, and of more certain operation.

If considered as a medicine it will be found a valuable one, though its emetic power often defeats the benefits we expect from it. In the form of infusion and of smoke it is introduced into the rectum, and is often effectual as an enema, when every thing else has failed. Its smoke probably penetrates farther than any liquid, and is more useful on this account, as well as from the oil acting in its separate state. Its operation is however generally attended with faintness, and therefore peculiarly useful in ileus and hernia, less so as a means of reviving those in asphyxy from drowning, or any other cause. Ascarides also, in the same form, it certainly kills. It is seldom employed as an emetic, as its sickness is peculiarly distressing; yet, in nauseating doses, we suspect, from its other qualities, that it may be equally effectual with, and less dangerous than, the digitalis, which stands very near it in the natural systems of the botanists. Its emetic power prevents it from acting as a laxative, except in clysters, and as a diuretic, except in the form of its alkali, after burning. The oil which remains adhering to the salts, adds to the diuretic power of the alkali, and it has been supposed useful in dropsies. In the days of its fashion we used it, but without such decided success as tempted us to continue it. Though boiling lessens this emetic property, it is not destroyed; and, though it is nearly lost in the extract, there is much doubt whether its virtues are not diminished in the same proportion. This extract and a syrup of tobacco appear in the foreign pharmacopœias, which are said to have cured epilepsy and mania. Twenty-five grains of powdered tobacco diluted with wine are said to have cured even quartans. The Edinburgh Pharmacopœia has preserved a vinous tincture.

The tobacco is in its purest state in the *segars*, which are only the leaf when in perfection, rolled up for the purpose of smoking. When in rolls, it has undergone a slight change from fermentation, and is probably rendered more acrid by some additions. In the manufacture of snuff numerous additions are probably made, which are kept secret. The varied acrimony of different snuffs are in part owing to the leaf being in greater or less perfection, in part to its having undergone some fermentation. The additions are common salt, for the purpose probably of increasing its weight, and it is said urine, to add to the pungency.

Tobacco is sometimes used in lotions and unguents for cleansing foul ulcers, and destroying cutaneous insects. It is destructive to all insects, whether in the vegetable or animal world; on the skin, in the hair, or the intestines; beat into a poultice with vinegar, and applied to the hypochondria, it is said to have discussed tumours. Bergius recommends a fomentation of it in paraphymosis. Cullen's Materia Medica.

NICOTIA'NA MI'NOR, *hyoscyamus luteus; priapeia*, YELLOW HENBANE, ENGLISH TOBACCO. *Nicotiana rustica* Lin. Sp. Pl. 258. Its leaves are short, sharp, and set on pedicles. It resembles the American tobacco, but is weaker. See Raii Historia; Lewis's Materia Medica; Neumann's Chemical Works; Edinburgh Medical Essays, vol. ii. art. 5.

NI'DI CYNI'PIDIS. See GALLÆ.

NI'DOR, (from *nideo, to give a savour*). The smell of burnt animal substances. Eructations, which resemble in smell and taste rotten eggs, are called *nidorous*.

NIGE'LLA, (from its black seed). *Nigella sativa* Lin. Sp. Pl. 753, is a plant whose root is annual, leaves capillaceous, and flowers rosaceous. It was formerly used as an expectorant and a deobstruent, a diuretic and a carminative. The species employed were *nigella damascena* Lin. Sp. Pl. 753.

NIGE'LLA ARVE'NSIS, *melanthium; nigella arvensis* Lin. Sp. Pl. 753. WILD FENNEL-FLOWER.

NIGE'LLA ROMA'NA, *gith, git, melaspermum*, from its black seed. FENNEL-FLOWER.

NIGELLA'STRUM, (from its resemblance). *Pseudomelanthium, lychnis segetum major, gethago, nigella officin. lychnoides segetum*, COCKLE, or CORN-CAMPION, *agrostemma cœlirosa* Lin. Sp. Pl. 624. The seeds are said to be useful in flatulent disorders, but are never given. The plant grows amongst corn, and flowers in June and July. See Raii Historia.

NIGRI'TIES OSSIUM, (from *niger, black*). See CARIES.

NI'GRUM PIGME'NTUM. See CHOROIDES.

NI'GUS. The worms which burrow under the toes of the Indians, and which are destroyed by the oil from the shells of cashew-nuts.

NI'HIL A'LBUM, NI'HIL GRI'SEUM. See ALBUM GRÆCUM, and POMPHOLYX.

NI'IR-NO'TSJIL. A kind of shrub in Malabar, the leaves of which, when eaten with rue, are said to cure the lues venerea; but no such plant occurs in the systematic botanists. See Raii Historia.

NI'IR PONGE'LION. A tree of Malabar, resembling the pear-tree. The seeds are used, with other ingredients, for making an antispasmodic liniment. See Raii Historia.

NIL. See INDICUM, and COLINIL.

NINZIN. The *sium ninsi* of Linnæus, Sp. Pl. 361, inferior but similar to the GENSING, q. v.

NI'RLES. See MORBILLI.

NIRUA'LA. A large tree in Malabar, whose leaves externally applied are diuretic; probably a species of *phyllanthus*. See Raii Historia.

NI'TRAS. NITRAT, NITRIS, and NITRIT. Salts formed by nitrous and nitric acid with different bases.

NI'TRI PU'LVIS COMPO'SITUS. See DYSURIA.

NI'TRO DE PI'LULÆ. See DIACOLOCYNTHIDOS PILULÆ.

NI'TRUM, or NATHAR; Hebrew terms. NITRE. *Sal petræ, halinitrum*, and SALT-PETRE; a neutral salt,

formed by the vegetable fixed alkali with the nitrous acid. It has a sharp though cooling taste, is soluble in seven times its weight of temperate, and an equal weight of boiling, water. The crystals are octagonal prisms, solid and not deliquescent, terminating in similar pyramids, sometimes dihedral. In a moderate heat it melts, and, when heated to ignition, deflagrates on the contact of any inflammable substance, with a bright flame, and a considerable hissing noise; leaving, after detonation, its fixed alkaline salt, the acid being decomposed in the process. Oxygen and nitrogen gas are produced, and the result is the *nitrum fixum* of the older chemists; in fact, the kali.

The origin of the acid of nitre has not been long known. When animal and vegetable substances, mixed with absorbent earths, have been exposed to the air till they are thoroughly decayed, they are found to contain a small portion of nitre, or to give out a little nitre to water, on being supplied with the proper alkaline basis. On this foundation nitre is prepared in several parts of Europe; where they expose earth, wet with urine, or animal dung, with every kind of animal and vegetable substance, open to the air, but covered from rain: on the surface of these heaps a nitrous crust is found. The greatest quantities are brought to us from Persia and the East-Indies, crude and of different colours; but the best is blackish, as it requires only solution and crystalisation. When mixed with sea salt it is purified as follows:

Filtre a solution of nitre, evaporate, and set it to crystalise in a cool place. The crystals will remain sufficiently pure, for the sea-salt remains dissolved after the greatest part of the nitre hath crystalised.

Nitre, according to Mr Kirwan, when dried at the temperature of 70°, consists of forty four parts of nitric acid, fifty-one of kali, four and a half of water. It is decomposed by the sulphuric acid, by barytes, by the muriat and acetat of barytes, and the vitriolated salts. See CHEMIA, vol. i p. 414.

Nitre is in part decomposed in the sal prunellæ, more completely in the sal polycrest; but in each it acquires different portions of the vitriolic acid, from the sulphur with which it is deflagrated. In the former preparation one half, and in the latter an equal part, of sulphur is employed, which makes the sal polycrest wholly a vitriolated kali.

The nitrous acid, formerly called *Glauber's spirit of nitre*, is made by adding to sixty ounces of nitre twenty-nine of a vitriolic acid. The mixture is then distilled. If two parts of nitre are added to one of oil of vitriol, the remaining alkaline basis of the nitre will be completely saturated with the acid, forming the vitriolated kali. If more nitre is used, part of it will remain blended with the vitriolated salt; if less, the residuum will not be neutral, but very acid. See CHEMIA.

The vitriolated nitre, *ducis holstatitiæ sal, sal de duobus; panacea duplicata; arcanum duplex; kali vitriolatum*, is usually made by decomposing the acid in the residuum, after the distillation of nitrous acid. It is the same with the sal polycrest.

The simple *aqua fortis* of the shops is made by mixing nitre and green vitriol, not calcined, of each three pounds, with a pound and a half of calcined green vitriol. This mixture is distilled with a strong fire, while any red vapours arise. The product is a spirit of nitre, containing so much more water than Glauber's spirit, as the vitriol employed does more than an equivalent quantity of the oil of vitriol, and is liable to an admixture with the vitriolic acid, some of which generally passes over. For this the college order nitrous acid and distilled water, a pound of each, to be mixed together, and call it acidum nitrosum dilutum. Ph. Lond. 1788.

In the *aqua fortis duplex*, the green vitriol is calcined, and in equal quantity with the nitre, but is used only in the arts.

The *nitro-muriatic acid*, called *aqua regia*, sometimes *aqua stygia*, and by Van Helmont, *chrysulea*, is made by adding gradually to an ounce of crude sal ammoniac in powder four ounces of the spirit of nitre. They should be mixed in a large cucurbit, and stand in a sand heat until the salt is entirely dissolved. Or, the salt may be powdered and gradually added to spirit of a middle strength, between single aqua fortis and strong spirit of nitre.

The acid obtained from common nitre contains some of the marine and vitriolic acids: the first is discovered and separated by dropping in a little solution of silver; the latter by a solution of chalk, in the pure nitrous acid; the silver absorbing the marine acid, and the chalk the vitriolic, forming, with those acids, indissoluble compounds. The solutions may be slowly dropped in, until no more milkiness appears. If the spirit is required pure, it must be re-distilled.

The *cubic nitre* is a combination of the nitrous acid with soda, and is prepared according to the following process. Dissolve chalk or lime in purified aqua fortis, and add the solution, by degrees, to a solution of natron vitriolatum in water, while each fresh addition produces any milkiness. A white powder will be precipitated, which must be separated by a filtre, and the fluid set to crystalise.

The *nitrum flammans* of the elder chemists is the nitrated ammonia of the moderns. It is very pungent, and dissolves in rectified spirit of wine.

Solutions of calcareous earths in the nitrous acid are bitterish and pungent, crystalise with difficulty, and are deliquescent. The nitrous acid dissolves zinc, iron, copper, lead, bismuth, mercury, and silver, the most readily of all the acids, tin imperfectly, and it only corrodes the regulus of antimony, though the latter most readily. When diluted with spirit of wine, it produces a light fluid called ÆTHER, q. v.

The nitrous acid agrees in its tonic power with the other mineral acids, but, from its oxygen being more loosely connected with the other component parts, or from the acid being more easily borne on the stomach, it has lately been preferred to the vitriolic and marine, in cutaneous complaints, and other cases where a larger proportion of oxygen appears to be wanting (see MORBI FLUIDORUM) in the system. Its virtues in syphilis we have already noticed. See LUES.

Nitre is a very useful refrigerant, in the language of late pathologists as a powerful antiphlogistic. It restrains the too rapid current of the blood, reduces the pulse and heat of the body, and is not only a very valuable medicine in INFLAMMATORY FEVERS, and in INFLAMMATIONS, but also in HÆMORRHAGES, q. v.

In active inflammations of the throat and fauces, nitre, held in the mouth, will soon relieve. It is styled

diuretic, but it has this property only in a slight degree; and when the dose is increased, it often produces a difficulty and pain in making water. The inconveniencies felt in the stomach from a large dose prevent it also from being used as a laxative. It seems to add to the virtues of camphor in removing pains in the head, and in the more violent fevers of the inflammatory kind; and, thus united, they have been celebrated, perhaps with little reason, for curing ulcers of the legs. In large doses it occasions violent pains in the stomach, bloody urine and stools, convulsions, and death. Pure nitre in solution is not affected by nitrats of silver and barytes. It should seldom be given in larger doses than fifteen grains; about ten grains is the most common and most effectual.

See Hoffmann de Salium Medicorum, et de præstantissima Nitri Virtute; Stahl de Usu Nitri Medico; Neumann's Chemical Works; Lewis's Materia Medica.

NI'TRUM ANTIQUO'RUM. See ANATRON.

NI'TRUM ARTIFICIA'LE HOFFMA'NNI is made of the spirit of sal ammoniac and spirit of nitre. It perfectly dissolves in rectified spirit of wine.

NI'TRUM CALCA'REUM VE'RUM, a solution of calcareous earth in the nitrous acid. See also ACTON.

NI'TRUM FACTI'TIUM, and NATI'VUM. See BORAX.

NI'TRUM STIBIA'TUM, *anodynum minerale*, the salts collected by washing the residuum after making the calx of antimony. They contain but little of the antimony.

NIX. SNOW, a name given to substances which resemble snow in their colour and lightness.

NIX FU'MANS. See CALX.

NIX ANTIMONI'ALIS. See ANTIMONIUM.

NOCTAMBULA'TIO, (from *nox, night*, and *ambulo, to walk*). See SOMNAMBULO.

NOCTUI'NI O'CULI, (from *noctua, the owl*). GREY EYES, like those of the owl.

NOCTILU'CA TERRE'STRIS, (*quia noctu luceat*). See CICINDELA.

NODOSA, (from *nodus*). KNOTTED. In surgery an epithet for a suture, for various bandages, and for gout, as attended with knots in the joints, in consequence of calcareous depositions. See ARTHRITIS.

NO'DULUS, (from *nodus*). A knot tied on a rag, including some medicinal ingredient with which an infusion or decoction is intended to be impregnated, as well as a bag, in which such ingredients are included.

NO'DUS, (from the Hebrew term *anad, to tie*). See GUMMA. A protuberant joint in the stem of some plants, particularly in corn and grapes, in order to strengthen their hollow culms.

NOE'LA TA'LI. The INDIAN BARBERRY TREE, with an orange leaf. It grows in Malabar; its fruit resembles barberries in their taste and virtues. See Raii Historia.

NO'LI ME TA'NGERE. *Formix*. TOUCH ME NOT. In botany, the *persicaria siliquosa*, or the *mimosa*. In surgery, a species of ulcer, and a kind of wart on the eyelid, which appears blackish, and, if touched, mortifies. Sometimes it means a cancerous sore, exasperated by medicines, or a species of *schirrus* and *herpes*. See HERPES, POLYPUS NARIUM.

NO'MA, NO'ME, (from *νεμω, to eat away*). A phagedenic ulcer, sometimes a species of *herpes*. See HERPES.

NOMENCLA'TURA. It was the opinion of a poet of the middle ages, *Nomina si pereunt, perit & cognitio rerum*; and the history of science shows, in the strongest light, that no impediment has so powerfully arrested its progress as a vague, imperfect, or a fanciful nomenclature. The list of synonyms has been thus unreasonably extended; and the student, misled by a name, has often found it difficult to recover the proper track. As this subject has lately engaged the particular attention of philosophers, a somewhat fuller account of their improvements, than would otherwise be necessary, may be required.

The nomenclature of a science implies its peculiar and technical terms. These have been generally kept distinct from the language of common life, perhaps at first from a wish to preserve an air of mystery, and give to the author a fancied preeminence above the world in general. There are, however, better reasons. In medicine we thus avoid the indelicacy of common appellations, and, in general, we escape the varying caprices of fashion; *quem penes arbitrium & jus & norma loquendi*. Some authors have adopted arbitrary appellations, particularly Van Helmont and Paracelsus, as we have seen in various articles; though it is not improbable that they had some fanciful allusion to the sources and action of the diseases and the remedies they designated. Later and more rational pharmaceutists have sometimes also adopted these arbitrary terms. Modern botanists, in their appellations of new genera, have equally employed them in honour of different cultivators of their science, though probably without giving that perspicuous lustre to it which an opposite conduct might have afforded. How much superior, for instance, is the generic term *epilobium*, επι λοβον ιον, a violet on a siliqua, to Linnæa, Thunbergia, and Commersonia. Mineralogists have in general preferred announcing the quality and appearance by an euphonous appellation; and we hope to make some advances in the same way in the neglected doctrine of nosology. Such descriptive appellations have been preferred by anatomists, though not always formed with the most accurate precision, and more lately in the improved nomenclature of the chemists.

The object of a scientific nomenclature is to convey in one word a sufficiently distinct idea of the body or organs, to preclude a repetition of the description whenever it is mentioned. When, however, objects are numerous, and the discriminating points with difficulty seized, one word is not sufficient. This induces us, in botany, to adopt the first natural associations, styled genera, and the appellation of the genus must accompany that of the species. In nosology it is generally less necessary; in pharmacy it would be perhaps useless, as the form itself supplies the place of a genus, which in anatomy is understood from the part described.

As nomenclature has received the last polish from philology, in the chemical department, we shall first notice the improvements in its language lately introduced. We there find, among some absurdities, the descriptive language laboured with no common care, and the numerous synonyms of former systems are only retained as keys to the works of the elder chemists. The

genus is, in this case, preserved in the epithet. It is vitriolated kali, arsenical soda, sulphurated ammonia; and though we may dispute the propriety of some terms, as hydrogen or azot, they must be considered as constantly discriminating substances of distinct properties. One great difficulty arises from some of these being indeclinable. There is a want of euphony in oxygen gas, which disgusts the nicer ear; and these harshnesses pervade every branch of pneumatic chemistry. Another error in this part of the subject is a want of uniformity: thus the azot generally implies a substance in a gazeous form; but though we use the term azotic gas, oxygenated or nitrogenated gas are not allowable. Was chemistry more peculiarly our object, we might point out other anomalies which require correction. It is enough to notice those already adduced to lead chemists to a still farther reform. Dr. G. Pearson has laboured successfully in this field, and to his attention we would willingly leave it. The subject cannot be in better hands.

The improvements in the nomenclature of pharmacy have not kept pace with those of chemistry. The awkwardness arising from the indeclinable substances, kali and natron, might have been easily avoided by adopting the terms lixiva and trona; the former adopted in one of the older editions of the Edinburgh Dispensatory, and the other by Dr. Black. Many errors in nomenclature might be noticed, of which a prominent one is the *aquæ*, when applied to salts and earths in a liquid form. These are strictly solutions; and a distinction is necessary between these and the distilled waters, which are properly aquæ. The wines are also anomalies which should have been avoided. They are properly infusions or solutions; but if a distinction was necessary, the old word elixir would have been applicable. Botanists employ single names as genera, and very generally a single epithet as a trivial distinction. These, as we have remarked, are sometimes descriptive, and the latter generally such. Single words strike the mind at once, and convey the idea unimpaired. When such single words, therefore, are sanctioned by custom, and readily understood, science is, we think, injured by a change. Thus philonium, theriaca, cinnabar, and some other appellations which had become denizens in the language of pharmacy, might have been, like alcohol, ether and some others, properly retained, or at least, if changed, might have received euphonous titles, *græco fonte parce detorta;* nor is it easy to say why we should deny to the pharmaceutists what has been so liberally granted to the botanists, the honour of giving an appellation from a name. We might consequently have retained the confectio Fracastorii and the pillulæ Rufi, when the nature of these compositions are generally understood, without any injury to science. The Edinburgh College, peculiarly eager and zealous in reform, have made their titles descriptions. We in general want only the vehicle and the proportions to supply the whole formula from them; and we have sometimes not only the nature of the formula, but often the means of preparing it. Another redundance in their nomenclature is, the introduction of the trivial as well as the generic names of plants. In pharmacy, the pharmaceutical term is only necessary. The botanical appellations are taught in other systems. The London College seems also to have refined too far, in adopting the genitive case of the substantive instead of the adjective, according to the sound principles of the new chemical nomenclature, as tinctura scillæ, instead of tinctura scillitica. It is, in fact, a tincture possessing the nature and qualities of squills. Pharmacy is, however, a science in which method has not been introduced; but its objects are so few that arrangement is less necessary. We may, however, make some attempts to give it a more regular form in that article.

In anatomy the nomenclature is still very defective, and the synonyms, particularly of the muscles, consequently numerous. The terms superior and inferior, anterior and posterior, are fixed with little precision, and their meaning varies in different systems. Muscles are named from their shape, from their action, or the occupations in which they are used. Were the whole of the nomenclature reformed, much of minute and uninteresting description might be avoided. Vicq. d'Azyr made some unsuccessful attempts to attain greater accuracy. Chaussier's improvements were more judicious, and in osteology they merit great, though not unreserved, commendation. The same principle, however, viz. expressing by the terms the relations of proximity and connection, does not succeed so well in the myology; and the nomenclature of Chaussier, and his coadjutor Dumas, when applied to the muscles, exhibits an inelegant unharmonious combination of unpleasing sounds. The error is not in the principle, but in the authors' pursuing it with too great rigour. If they had aimed at less exactness they would have succeeded better.

Our countryman, Mr. Barclay, has attempted to reform the anatomical nomenclature with more success; and though the change cannot be rapidly made, we trust it will be gradually introduced. We at first intended to have employed it in the present work; but language so singular to the student would have perplexed, and might have misled him.

The terms superior and inferior are generally used with relation to the different parts of the human body in an erect position. Their force is, however, lost in a reclined one, and neither is peculiarly applicable to the relative organs in other animals. In the TRUNK, therefore, for these Mr. Barclay proposes the terms *atlantal* and *sacral*, from the two extremities of the spine; for anterior and posterior, which are subject to similar ambiguities, *sternal* and *dorsal;* for internal and external, *dermal* and *central;* or, with respect to an organ, *peripheral* or *central.* When external and internal signify the side and middle of a surface, suppose a plane, styled *mesion*, to pass along the middle of the neck, the *mediastinum* and *linea alba*, through the body parallel to the surface, then *lateral* and *mesial* may be the terms employed. Instead of right and left, Mr. Barclay employs *dextral* and *sinistral*, as less equivocal in some parts of comparative anatomy, or, when there is no occasion for distinction, *lateral* will be sufficient. In the HEART, what anatomists have styled the right and left ventricles are neither; and the terms anterior and posterior, though more correct, are not always applicable to comparative anatomy. Mr. Barclay's distinction in this case, perhaps less simple than the others, is to term the vessels which convey the blood *from* the lungs to the whole body, viz. the pulmonary veins, the left sinus, auricle, and ventricle, with the aorta and its branches,

systemic; those which carry it *to* the lungs, the *pulmonic;* and in marking their relative situation to the trunk, or to each other, the terms *atlantal, sacral,* &c. already mentioned, may be employed.

The EXTREMITIES are termed *atlantal* or *sacral;* the ends of the bones nearest or farthest from the trunk, *proximal* and *distal.* In the *atlantal* extremities the two lateral parts are, with Winslow, styled *radial* and *ulnar,* the two others *anconal* (from *ancon,* the Greek word for *olecranon*) and *thenal* (from *thenar,* the Greek appellation of the *palm*); but the peculiar term for the palm, in Mr. Barclay's system, is *vola.* The distinguishing aspects of the sacral extremities will, by similar reasoning, be *proximal* and *distal; dermal* and *central; tibial* and *fibular; popliteal* and *rotular.* Planta is the term for the sole on the popliteal side of the foot.

The usual terms of superior and posterior, &c. when applied to the HEAD, become very equivocal in those general discussions where the heads of animals, as well as men, are described. Mr. Barclay, therefore, proposes that the axis of the vertebral column should be, in imagination, prolonged till it meet some bone in the head or face. This bone he would call the *atlantal;* those opposite to them, at the basis of the skull, *sacral.* The terms *sternal* and *dorsal,* when applied to the *head,* are those parts in the same plane, or in planes parallel to the sternum and dorsum. Where these are parallel, the planes on the sternal side will always be *sternal,* and the contrary. In the human species the whole face and lateral sides of the head will be sternal; in sheep and oxen the maxillary curves will be so only; and in frogs and serpents the basis of the skull will be sternal, and the maxillary curves dorsal.

With respect to the particular bones of the FACE, *dermal, central, distral, sinistral,* and *mesial,* are applicable; but five new ones are required; for the base and crown, the hind fore part of the cranium, and for the face. The two first are to be styled the *basilar* and *coronal* aspects; the occiput, the *inial,* from *ινιον,* its Greek name. The opposite side to the inial, where the bones of the nose are united to the os frontis, he styles *glabellar,* from its Latin appellation *glabella.* The part of the face, at the greatest distance from the occiput (*inion*), in a straight line, is styled the *antinion.* If lines are drawn through these aspects, or from the right and left, they will form the *corono-basilar;* the *inio-glabellar,* the *inantilial,* and the *dextro-sinistral* diameters. The measure of these different diameters will show the varying proportions of the heads of different animals, of the same species, or of others in the lower scales. The facial angle and its variations we have already noticed. (See CRANIOLOGIA.) These terms, by altering the termination, may be used adverbially so as to signify a direction towards either aspect, and this termination is in *ad,* instead of *ab* and *ar;* and by changing it to *en,* it may express connection. Thus a radial artery or muscle may be either with a radial aspect, while a radien artery enters the radius itself.

Such is the plan of Mr. Barclay, which, it may be observed, is in embryo only, neither co-extensive with what anatomy has demonstrated, nor with the great variety of animated nature in its different branches. Yet, in its present state, this nomenclature merits particular commendation; and, if divested of some refinement, particularly the mesion, which should perhaps be rendered more simple and familiar, might with great advantage be adopted. We know nothing less easily comprehended by the untutored mind than the doctrines of planes.

The nomenclature of muscles he has only slightly noticed in his introduction. We have already remarked, that the fixed point is named the origin, and the muscle is "*inserted*" into the bone to be moved. This, however, is at times with difficulty ascertained; nor is the motion usually performed by a single, or by a few, muscles. Many concur in fixing the origin; others in giving force and direction to the motion. Mr. Barclay proposes that the muscles should be classed from their origin and their insertion, and the name fixed from the most obvious distinction, neglecting the origin of the minuter bundles of fibres. Thus the sterno-humeral can mean nothing but the pectoralis major, which, in the nomenclature of Chaussier, is the *sterno-costo-clavio-humeral.* In the blood-vessels he points out the necessity of an uniformity of language; for the appellations of arteries often differ, as the names of the organs to which they are distributed vary. This, of course, requires an uniformity in the appellations of the organs themselves. The same name is at present often employed also to express two different relations, as the artery which runs along the humerus, and that which enters it is equally called *humeral.* Branches of arteries, and often minute branches, are sometimes honoured with a name, while the trunk from which they proceed is not distinguished by any. Such anomalies require a remedy; and we should be happy to find the language of anatomy freed from its great uncertainty and barbarous language.

Nosology, yet in its infancy, has had the advantages of the attention of Linnæus and Cullen, who have laboured to render its language euphonous, without greatly departing from the received appellations. They had, indeed, before them the Greek terms, which they could easily reduce to the Latin orthography, and they wanted no more. Selection was alone necessary, and we find no proofs of defective taste. In generalising the inferior groups, it has been sometimes necessary to employ terms in a new signification, in the nosological sketch offered in the present volume. We trust that they have been selected with sufficient care.

See Barclay's New Anatomical Nomenclature; Chaussier's Tabular View of the Skeleton; Pearson's Chemical Nomenclature; Dickson's Essay on Chemical Nomenclature, with Kirwan's Observations; Linnæi Critica Botanica; Culleni Nosologia.

NONA'NA, (from *nonus, the ninth*). An erratic intermittent, returning every ninth day.

NON-NATURA'LIA. The NON-NATURALS. A fanciful term given to functions or accidents not strictly belonging to man: as, air; aliment; exercise and rest; passions and affections of the mind; wakefulness and sleep; repletion and evacuation.

See Dr. Fr. Clifton's Translation of Hippocrates on Air, Water, and Situation; Wainwright on the Non-naturals; Sanctorius's Medical Statics; Keil's Animal Economy; Mackenzie on Health.

NO'NUS HU'MERI MU'SCULUS PLACENTINI. The ninth muscle of the shoulder. See CORACO-BRACHÆUS.

NORLANDICÆ BACCÆ. The cooling subacid fruits of the *rubus arcticus* Lin. Sp. Pl.

NORTHAW, or NORT-HALL WATER, is of the purging kind, and similar to that of Epsom, but not so strong or so nauseous. It contains a little calcareous earth, selenite, with a small proportion of sea-salt, and is slightly purgative.

NOSOCO'MIUM, NOSODO'CHIUM, (from νοσος, *a disease*, and κομεω, *to take care of*, or δεχω, *to receive*). AN HOSPITAL.

The institution of hospitals, coeval probably with the era of Justinian, was the first effort of Christian charity, taught by its great master, who commanded us to love one another, and that HE was our neighbour who showed mercy. It is impossible to conceive a more pure philanthropy than the institution of a receptacle where the only claim to admission is the immediate necessity of relief; where to want is the only requisite to demand a supply. Ancient philosophy offers nothing so exalted; and even the benevolent host of Homer, who sat by the way-side to assist travellers, παντες γαρ φιλεεσκε, can scarcely exceed it. With regret, however, we learn, that the mortality of hospitals exceeds even the calculation that can be made from the state of the objects admitted. We allude not to the mortality of the Hotel-Dieu, which may literally be said to contain the victims of the Almighty, but to modern institutions, where perhaps ancient regulations are still too strictly followed. To consider the subject carefully, we shall first add some remarks on the construction of hospitals generally, and then apply them with those modifications which their particular object may seem to suggest; nor will this attempt be thought presumptuous in one who has been physician in a large hospital for thirty-three years.

Were a situation to be chosen for an hospital, it should be an elevated, dry spot, facing, as near as possible, east and west, for the sake of alternate changes of air and warmth. The building, at least the wards, should be single, so as to admit of transverse ventilation, and the windows should be from the top to the bottom, open at either extremity, carefully secured, however, at the bottom, to prevent air from crevices. The length of the ward should not exceed thirty feet, and it should be rather more than half that breadth. The beds should be placed at right angles to the wall, and there should be a window between every second bed. If the door is at one end, and the fire-place at the other, one fire will be sufficient: if in the middle, there should be two. In this way the ventilation will be complete. The windows may be opened on either side, in different degrees, according to the state of the wind or weather, either above or below. The under windows should be opened for a short time every day, on either, or on both, sides, according to external circumstances; for carbonic acid gas is heavy. A ward, when opened, cannot always smell fresh and pure; but it should not be offensive or close. If the beds are parallel and close to the sides, the floor cannot be ventilated; if more numerous, the air cannot be admitted to each patient. We have not mentioned ventilators on the top; for if the temperature be moderate they will be useless, and they cannot be applied to a ground floor.

The privies should be at each extremity of the ward; but if that is impracticable there should be one in each, and always separated from the ward by a short passage, in which there should be a ventilator or a window. If possible, each should be a water closet; but the dressings and the contents of the night boxes should be always immediately immersed under water.

The separate apartments for particular complaints should not be small, but should never contain more than two beds on the opposite sides of the room, while the door and the window on the two other sides will contribute to the ventilation. The chimney, if one is necessary, may be in the angle. If required for patients who may be occasionally in violent pain, in convulsive paroxysms, and delirium, they should be separated from the ward by a short passage. For the sake of attendance, they must be contiguous.

The offices containing the baths, the brew and bake-houses, the elaboratory, &c. should be separated from the principal building, that they may not render it too warm; and the apartments for hectic and asthmatic patients should be also separated. These may be in pavilions, joined to the house by a colonade, which the architect may render ornamental, though this is of less importance. If any apartments are connected with the offices, it should be those adapted for chronic rheumatism, for syphilis, and for amœnorrhæa. The colonade may furnish covered walks open to the north and south, and over these the apartments just mentioned may be situated. From this sketch it will be easy, we think, to construct an hospital, which will unite every advantage to be expected from such an institution.

In the arrangement of the house every impurity should be immediately removed, and every noxious matter immediately immersed in water; and, after the dressing of the sores, the upper and lower windows should in turn be for a short time opened, while the patients are secured from their effects by their bed-clothes. The linen should be changed, not from the regulations of time, but of circumstances, under the directions of a judicious apothecary. Air and cleanliness will make all aspersions with vinegar and all fumigations useless.

Ointments afford an offensive smell; for the axunge cannot be long preserved free from rancidity. It is, therefore, highly proper that those plasters only which are employed in peculiar circumstances should be spread in the ward; and Dr. Percival's advice of using mucilage with neatsfoot oil, occasionally united with Gowland's extract instead of the common plaisters, is judicious. If lintseed meal be used, even the oil will be unnecessary.

The diet of hospitals is regulated by custom, which it is heresy to attack; nor is it indeed necessary to notice it particularly, since any occasional errors may be corrected by the physician. Perhaps, according to Dr. Percival's advice, salep may be occasionally substituted for rice, and malt infusion for beer; but his other observations in this respect rest too strongly on a disputable foundation, experiments out of the body.

Iron bedsteads will neither retain infection nor bugs; and their upper ends should be raised with a screw. It would be always proper to have supplementary wards; for nothing should hinder each ward from being white-washed, thoroughly cleaned, and the window-frames painted, *in distemper*, every year. The beds also should be repeatedly ripped, and their contents aired.

See Percival's Thoughts on Hospitals, and the Memoirs de la Societé Royale de Medecine.

NOSOLO'GIA, (from *νοσος, a disease*, and *λογος, a discourse*). NOSOLOGY. When the numerous advantages of arrangement were so conspicuous in the advancement of botany, it was soon extended to many other branches of natural knowledge; and as the great end to be obtained from it was a ready and accurate distinction of species, it was soon suspected that it might be highly useful in sciences where discrimination was equally difficult and important. Yet, except in the arrangement of the vegetable kingdom, method has seldom been found singularly useful. In zoology it has connected animals of a nature very discordant, and living in elements essentially different: in mineralogy it has been obliged, till lately, to borrow assistance from the elaboratory; and in medicine it has connected the most trifling with the most important diseases, and maladies of a nature very dissimilar. Even in botany, where its utility is acknowledged, the endless disputes which have arisen respecting the principles of arrangement have at last subsided in the establishment of an artificial system, chiefly because it has been extended with the rapidly increasing bounds of our knowledge. Many of these difficulties, as well as their source, are easily understood. Systems are the work of our own minds; for nature advances by almost imperceptible shades; and where we can point out the termination of one family, and the commencement of another, it is only confessing that the intermediate link is unknown: thus when our knowledge advances the advantages of our systems lessen, for our limits are lost.

This disadvantage is felt even at the first step of our analysis of the objects of nature, namely, in our discrimination between the animal, vegetable, or mineral kingdom, and follows, with equal inconvenience, every subordinate distinction. It is felt less in artificial arrangements, and affords a strong argument in their favour; so as, in the opinion of many naturalists, even to counterbalance the advantages of a natural method. It is very inconvenient in mineralogy, where the component parts and the obvious qualities often differ very strikingly.

What, however, was so useful an assistant in botany, what was at least not injurious in zoology, and advantageous in the lower orders of animated nature, was tried with very unequal effect in mineralogy and diseases; but of mineralogy we have already spoken. The arrangement of diseases is still in a very imperfect state. To the inconveniencies which attended the arrangement of minerals, some difficulties, apparently insurmountable, were added. If the forms, the hues, and other properties of the mineral forbade us to expect uniformity, the infinitely more fleeting, the more minutely varied forms of diseases seemingly mocked every attempt to bring them within the limits of a definition. If a foundation could be obtained, it was apparently by considering the disorder as connected with an internal change, which would then afford what might be styled an object, whose properties we might examine. This, however, increased the difficulty, for few would agree respecting this change; and the system must vary with the opinion, perhaps the fancy, of physicians respecting what we now call the immediate or proximate cause. To this must be added, that, in a strict systematic view, the error would not be less than in classing minerals from their component parts, in other words, their chemical nature, as we have already observed. (See CAUSA and MORBUS.) It was necessary then to consider each disease as a concourse of symptoms, in general fixed, leading to an injured function, and to some permanent change in the system, whatever it might be. In this way the disease is the unknown algebraical quantity designated by a letter; but this letter, in the hands of the mathematician, may be managed as readily as a determined object. It may have powers and proportions ultimately depending on the value to be discovered; but, at the same time, independent of it. Thus we can speak of a fever, its degree, its changes, and cure, without attempting to examine in what it consists. We can distinguish an unknown change by symptoms, and can arrange it from these alone. The importance of distinction will be at once obvious, when we recollect the extensive disquisitions in which every practical author engages under the head of diagnosis. Sydenham, certainly no friend to fanciful refinements, was seemingly the first author who suggested this method; and Gaubius, who had seen the systems of Sauvages, of Linnæus, and probably of Vogel, hopes that an attempt so happily began will soon be perfected. Since the time of Dr. Cullen, we have witnessed few attempts of this kind; and the neglect certainly has not arisen from the degree of perfection his arrangement has attained.

Nosology is seldom mentioned, but to be ridiculed or despised Some late authors who have pretended to oppose it have, in their arguments, shown not only their ignorance, but the necessity of the study; and those who have adopted systems of arrangement have demonstrated that they have little attended to its principles. If nosology does not render the distinction of diseases easy and comparatively obvious; if, by bringing disorders of a similar nature together, it does not elucidate them as well as the method of treatment, it is useless, and will be deservedly neglected. We shall endeavour to show that each end may be readily obtained.

The reasons which have impeded the advancement of nosology are numerous; but it is needless to examine them minutely: even Linnæus, by whom method had been so much improved, has wholly lost sight of his own rules, when applied to the arrangement of diseases; and Dr. Cullen, who has formed a system imposing from its simplicity, elegance, and perspicuity, has erred in the threshold, by his first separation of general from local diseases. Yet no distinction appears more clear, more obvious, or on a more secure foundation: the difficulty is felt only in the application, and is soon perceived when we find the same disease sometimes general, sometimes local, and varying, with almost undistinguishable shades, from one to the other. To connect the feverish disorders into one class is equally judicious in appearance; but a similar objection recurs. The same disease is often attended with fever, and is occasionally without it, and this in almost every degree. Even in the genus *cynanche*, which he laboured with no common care, and in which he thought himself peculiarly successful, he has erred against his own principles; and formed, as we have

seen, vide in verbo, an association wholly discordant, merely from the vicinity of the parts affected.

It is singular that even in botany Linnæus began with establishing classes and orders; Ray and Jussieu in their more natural systems did the same, and perhaps it is unavoidable. The mind catches at the larger associations, and captivated with their simplicity, or their theoretical connections, makes the subordinate parts bend to their powerful influence. The error is probably unavoidable: the fault consists in continuing to wear the fetters, when their weight and inconvenience is felt. Dr. Cullen, for instance, had an order of profluvia, which he placed in the class *pyrexiæ*, and thus limited the genera, omitting the catarrhus vesicæ, gonorrhœa, leucorrhois, and many similar diseases. When this inconvenience was felt, he should perhaps have rejected the class. If he retained it in order to have an association strictly natural, his system was defective; for the nature of the other complaints was the same, the treatment in many respects similar.

The great difficulty which has, however, been felt by every systematic author, is to ascertain what individuals are species, and what varieties. Even in botany, where the species are now clearly distinguished, it was once so difficult, that in the system of the accurate Tournefort one third of the species have been found varieties. In mineralogy the species are not yet clearly fixed; and, for obvious reasons, many fluctuations in the arrangement must take place before these can be ascertained. This difficulty is peculiarly felt in nosology, and it will be advantageous to consider the subject more fully.

Linnæus has justly observed, that the species are in number equal to the individuals created. Yet this remark affords little assistance to the systematic botanist. If he finds a plant differing in bulk and size only, with the more essential parts in some degree imperfect, he will readily suppose it to be a variety, changed in consequence of a less genial climate. In any greater difficulty he sows the seed, and finds, by degrees, the variations less. Though the botanist has many other resources in ascertaining the distinction between species and varieties, yet these are the more important methods, and peculiarly applicable to the present subject. Thus the erysipelas, which in the north assumes a phlegmonous appearance and nature, in a crowded metropolis must be treated with cordials and tonics. The remittent fever, which chiefly requires evacuations, with a moderate proportion of bark in temperate climates, soon proves fatal without a very different treatment within the tropics. The diseases are confessedly the same, and these are consequently varieties. The erysipelas and the remittent fever are therefore species.

Again: the small-pox is a disorder propagated by infection. The seminium may be consequently considered as the seed of a plant. We know that the most distinct kind, in a bad constitution, and, by experiments probably not strictly justifiable, that the worst matter in a good one, will produce respectively a bad and good kind. Similar instances occur in the epidemic measles. These are cases analogous to the mode in which the botanist distinguishes species from varieties, and the variola and rubeola are consequently species.

If a botanist meets with a plant to him unknown, he at once supposes it a new species, or a variety of one formerly known. If it does not agree with any known group of species, for these constitute a GENUS, q. v. he supposes it a new one, or at least the fixed point to which others may be referred. It is a common error to say that a naturalist has discovered a new genus; for a genus is an association. If this be true, and we fear no contradiction, the real source of nosological error and difficulties is at once cut off, and we may proceed with the same steadiness and success which has crowned the labours of the botanist. The difference only is that the sub-species or the varieties are of more importance than in other departments.

The great advantage of nosology is distinction, and the discussions connected with arrangement are so many points of discrimination, which the proper order has suggested. If the place of a disease cannot be ascertained, it is evident that the symptoms have been inaccurately described. One circumstance is however still wanting; the accurate discriminate language of description so useful in botanical arrangement. We still want a delineatio morbi in imitation of the delineatio plantæ in Linnæus.

The first attempt at classification of diseases was made by Sauvages. It was published in a more abridged form in octavo, before that vast mass of medical erudition, his two quarto volumes, were completed. It was first styled *pathologia*, and the name was changed to prevent its being confounded with a branch of the institutions of medicine. His first class was VITIA, slight cutaneous diseases, or such as require chirurgical assistance. The second, FEBRES; the third, PHLEGMASIÆ; the fourth, SPASMI; the fifth, ANHELATIONES, (difficult respiration); the sixth, DEBILITATES; the seventh, DOLORES; the eighth, VESANIÆ; the ninth, FLUXUS; and the tenth, CACHEXIÆ. Linnæus brought to this office all his comprehensive accuracy, with a quaintness of language which, when explained, is no longer unpleasing. The EXANTHEMATICI are eruptive; the CRITICI, common fevers; and the PHLOGISTICI, fevers attended with inflammation. The DOLOROSI are painful diseases; MENTALES consist in the abolition of judgment; the QUIETALES of motion; the MOTORII in involuntary motions; the SUPPRESSORII in obstructions of the natural passages; and the EVACUATORII in evacuations. The DEFORMES are changes in the solids, and the VITIA those of the surface. The classes of Vogel, whose work appeared in 1764, are, FEBRES, PROFLUVIA, EPISCHESES, (suppressions); DOLORES, SPASMI, ADYNAMIÆ, (debilities); HYPERÆSTHESES (more acute or depraved sensations); CACHEXIÆ, PARANOIÆ (aberrations of mind); VITIA, superficial, and DEFORMITATES, more solid deformities.

Sagar, who published his nosology in 1776, has divided diseases into thirteen classes; VITIA; PLAGÆ (wounds); CACHEXIÆ; DOLORES; FLUXUS; SUPPRESSIONES; SPASMI; ANHELATIONES; DEBILITATES; EXANTHEMATA; PHLEGMASIÆ; FEBRES; and VESANIÆ. Dr. Cullen's classes are few: PYREXIÆ, NEUROSES, CACHEXIÆ, and LOCALES.

The last general work on this subject is the philosophical nosography of Pinel, differing little in its out-

lines from the common systems, but with too great refinement, and we think useless minuteness in the sub-divisions. The classes are FEVERS, INFLAMMATIONS, ACTIVE HÆMORRHAGES, NEUROSES, LYMPHATIC DISEASES, with an indeterminate class. The existence of the last shows a want of those comprehensive views which every systematic author should possess; but as the work is not generally known, we shall pursue our account of it in the more subordinate divisions.

The first class of FEVERS contains six orders; the *angi-stenic* (inflammatory); the *meningo-gastric* (bilious); the *adeno-meningeal* (pituitous, containing the hectic and intermittents); the *adynamic* (putrid); the *ataxic* (malignant); and the *adeno-nervous* (the plague). We need scarcely observe, that in this arrangement fevers of the same type, of similar appearances, which are relieved by the same remedies, are scattered in different orders, from the occurrence of an accidental symptom: the genera are consequently, in many instances, varieties only. The plague is perhaps properly a fever; but it should have been arranged among the ataxic or adynamic diseases of our author.

The *inflammations* are divided into five orders; 1. the inflammation of *mucous membranes*; 2. of *diaphanous* ones; 3. of the cellular substance, the glands, or the parenchyma of the viscera; 4. of the muscles; 5. cutaneous inflammations, including the exanthemata.

The active hæmorrhages are those *common to both sexes*, and *uterine* hæmorrhages.

The nervous diseases contain four orders; 1. the *vesaniæ*, not febrile; 2. *spasms*; 3. *local anomalies of the nervous functions*; and 4. *comatous* affections.

The fifth class contains three orders; 1. *cutaneous diseases*; 2. *diseases of the lymphatic glands*, including phthisis, lues, and rachitis; 3. *dropsies*.

The undetermined class contains the *jaundice* of new-born children: *diabetes*; *worms*; the bites of insects and serpents.

We need not add any remarks on this arrangement. Its imperfections will be at once obvious, nor is it one of the least, that often the general, frequently the subordinate, divisions rest on the uncertain foundation of a theory; of theory at least not generally admitted in this country.

Were we to proceed to the genera we should find them badly arranged, imperfectly distinguished, with numerous omissions. Indeed for many diseases the author's system has no place.

A more limited system is that of Selle, whose Rudimenta Pyretologiæ Methodicæ was the subject of his thesis, and re-published at Halle in 1770, under the title of the Methodi Febrium Naturalis Rudimenta, and afterwards in a more extensive form, under the first title, at Berlin in 1786. As it is highly commended, and often quoted, we shall give a somewhat more extensive view of it than of the former systems.

The first order of fevers is styled *continentes*, divided into two genera, the *inflammatory continent*, and the putrid. The second order contains the *remittentes*, divided into the *gastric* or *bilious*, the *bilious inflammatory* fever, the *bilious putrid*, and the *pituitous fever*. The last is sub-divided, as it is combined with α a wormy colluvies, β a metastasis of milk to the abdominal viscera, γ internal ulcer, δ obstruction of the viscera.

The third order is styled the *atactæ*, viz. the nervous and putrid fevers; and these are divided into the *sporadic, nervous fever*; the *epidemic from contagion*; and *the slow nervous fever*.

The fourth order is entitled *intermittentes*; and the genera are, the *inflammatory, bilious, pituitous, wormy*, and *nervous* intermittents.

The active inflammations are included under the inflammatory continent fever; and to these are added, in separate sub-divisions, *erysipelas* and *rheumatism*. Under the same genus we find the complications of *catarrh, dysentery*, and *exanthemata*. Many of these are repeated under the putrid continent fever, and under the different genera of remittents, with little accuracy of distinction.

Under the acute sporadic nervous fever we find as species, *phrenitis, hydrophobia*, and *febris soporosa*; and, under the contagious nervous fever, the *plague*, which in its mildest form is placed as a variety of putrid nervous fever.

To the last edition Selle has added natural classes of diseases. These are INFLAMMATORY, PUTRID, BILIOUS, PITUITOUS, WORMY, MILKY, NERVOUS, PERIODICAL, OBSTRUCTIONS, GOUTY, RICKETY, SCROPHULOUS, CANCEROUS, VENEREAL, SCABIOUS, SCORBUTIC, POISONOUS, and ORGANIC. This is evidently only an outline, for the genera are not filled in, and it will be obvious that they depend almost exclusively on causes, and are consequently theoretical. They approach nearly in the manner of their formation the natural orders of plants by Jussieu.

These are the chief systems founded, or pretended to be founded, on symptoms; for the arrangement of Macbride into universal, local, sexual, and infantile diseases, scarcely merits our attention in this place. If we were to examine each system, it would appear that, except in those of Linnæus and Cullen, there is no arrangement of classes, no traces of what in the article botany we have styled a *methodus*. The methodus of Linnæus is somewhat fanciful, that of Dr. Cullen into universal and local diseases, as we have remarked, injurious. In all, the fundamental error appears of forming classes without having ascertained species; so that in reality the classes are orders, and the orders in general claim no higher rank than the first associations of species, *genera*. In general we may remark, that there are some associations so obvious that they at once seize the attention of every nosologist, for no one thinks of separating fevers or inflammations, and, except Dr. Cullen, the passive hæmorrhages and profluvia from the active. Each slides into each other by such insensible shades, that we know not where the one begins and the other ends.

Another error, which seems to pervade every system, consists in the definitions. The symptoms are seldom scientifically arranged so as to facilitate investigation. In botany either the character of the sections, or the first part of the character, at once informs the student whether the plant belongs to that species or to one far below. The nosologists have collected their symptoms with little care, and in their anxiety to distinguish diseases have rendered their definitions almost complete descriptions. This is particularly the error of Vogel and Sagar. To render their works also complete, they

have included the minutest deviations from the natural appearance, forgetting that it was an arrangement of diseases, the essence of which consists in injured functions.

Reflecting on these natural groupes, and having established in our minds the distinctions between varieties, species, and genera, it occurred to us whether diseases might not be arranged in imitation of the natural orders of the botanists; and having succeeded at least to our own satisfaction in this attempt, we laid the foundation of it in what may have appeared the disproportioned or inapplicable inquiry into the foundation of natural methods in BOTANY, q. v. We shall therefore add a new, and what appears to us an improved, classification of diseases on the same principles.

The orders in this arrangement are twelve: PYREXIÆ, PHLEGMASIÆ, ERUPTIONES, PROFLUVIA, SUPPRESSORII, SPASMI, ADYNAMIÆ, PARANOIÆ, CACHEXIÆ, INTUMESCENTIÆ, ECTOPIÆ, PLAGÆ. In this arrangement there is a concealed methodus, which as it is not an object of importance we need not explain farther than by adding, that feverish complaints, increased and diminished evacuations, increased, diminished, and irregular nervous excitement, diseased fluids, appearing either in increased or diminished bulk, the displacements and solutions of continuity, follow in order.

Order I. PYREXIÆ.

Genus I. INTERMITTENS.
Sp. 1. Quotidiana.
2. Tertiana.
3. Quartana.
4. Erratica.
5. Complicata.

Genus II. EXACERBANS.
Sp. 1. Mitis.
2. Maligna.
α *Autumnalis.*
β *Icterodes.*
γ *Asthenica.*
3. Hectica.

Genus III. CONTINUA.
Sp. 1. Synocha.
2. Typhus.
α *Carcerum.*
β *Neurodes.*
γ *Gastrica.*
3. Synochus.

Order II. PHLEGMASIÆ.

Genus I. INFLAMMATIO.
Sp. 1. Phlegmon.
2. Ophthalmia.
α *Epidemica.*
β *Sporadica.*
γ *Tarsi.*
3. Phrenitis.
4. Cynanche.
α *Faucium.*
β *Tracheæ.*
γ *Parotidea.*
5. Pneumonia.
α *Pleuritica.*
β *Peripneumonica.*
γ *Diaphragmatica.*
δ *Hepatica.*
ε *Rheumatica.*
6. Hepatitis.
7. Carditis.
α *Mediastina.*
β *Pericarditis.*
8. Gastritis.
9. Enteritis.
α *Mesenterica.*
β *Epiploitis.*
γ *Peritonitis.*
δ *Rheumatica.*
10. Nephritis.
11. Cystitis.
12. Hysteritis.
13. Odontalgia.

Genus II. PHLOGOSIS.
Sp. 1. Erythema.
2. Phrenitica.
3. Anginosa.
4. Pneumonica.
5. Puerperalis.

Genus III. CATARRHUS.
Sp. 1. Coryza.
α *Contagiosa.*
β *Senilis.*
γ *Arthritica.*
δ *Trachealis.*
2. Dysenteria.
α *Epidemica.*
β *Sporadica.*
3. Phthisis.
4. Cœliaca.
5. Leucorrhæa.
6. Cystirrhæa.
7. Gonorrhœa.
8. Leucorrhois.

Genus IV. ARTHRITIS.
Sp. 1. Rheumatismus.
α *Lumbago.*
β *Ischias.*
γ *Pleurodyne.*
2. Arthrodynia.
3. Podagra.
4. Hydrarthus.
α *Coxarius.*
β *Genu.*

Genus V. EXOSTOSIS.
Sp. 1. Periostea.

Order III. ERUPTIONES.

Genus I. EXANTHEMA.

§ I. *Epidemicum.*

Sp. 1. Variola.
α *Confluens.*
β *Crystallina.*
2. Vaccina.
3. Rubeola.
α *Maligna.*
β *Variolodes.*
4. Varicella.
5. Milliaria.
α *Purpura.*
β *Alba.*
6. Scarlatina.
α *Cynanchica.*
7. Erysipelas.
8. Pestis.
9. Pemphigus.
10. Aptha.
α *Maligna.*

§ II. *Sporadicum.*

11. Urticaria.
12. Strophulus—Infantum.
13. Achor.

Genus II. EFFLORESCENTIA.
Sp. 1. Psora.
2. Prurigo.
α *Pudendi.*
β *Senilis.*
3. Lichen.
4. Petechia.
5. Vibex.
6. Phlyctena.
7. Herpes.
8. Tinea.
9. Eczema.

Order IV. PROFLUVIA.

Genus I. HÆMORRHAGIA.

Sp. 1. Epistaxis.
2. Stomacace.
3. Hæmoptysis.
α Febrilis.
β Asthenica.
4. Hæmatemesis.
5. Melæna.
6. Hæmorrhois.
7. Mænorrhagia.
8. Hæmaturia.
α Febrilis.
β Senilis.
9. Vicaria.
α Narium.
β Pulmonum.
γ Ventriculi.
δ Venarum Hæmorrhoidalium.
ε Vesicæ.
ξ Gingivarum.

Genus II. Apocenosis.
Sp. 1. Vomitus.
α Cholera.
β Pyrosis.
γ Atonica.
2. Diarrhœa.
α Lienterica.
β Aquosa.
3. Diabetes.
α Mellitus.
β Mucilaginosus.
4. Diuresis.
α Chronica.
β Spasmodica.
5. Ephidrosis.
6. Plica.
7. Epiphora.
8. Ptyalismus.
α Hydrargyratus.
β Paralyticus.
γ Mellitus.
9. Exoneirosis.

Order V. SUPPRESSORII.

Genus I. Constrictoria.
Sp. 1. Dysphagia.
2. Obstipatio.
α Pylori.
β Intestinorum.
γ Recti.
3. Polypus.
α Narium.
β Cordis.
γ Uteri.

Genus II. Anhelatio.
Sp. 1. Asthma.
α Spontaneum.
β Plethoricum.
γ Senile.
2. Dyspnæa.
α Catarrhalis.

β Terrea.
γ Aquosa.
δ Organica.
ε Venenata.

Genus III. Epichesis.

§ I. *Sanguinis.*

Sp. 1. Amænorrhæa.
2. Dyslochia.
3. Dyshæmorrhois.

§ II. *Excretorum.*

4. Icterus.
α Calculosa.
β Biliosa.
γ Spasmodica.
5. Ischuria.
α Renalis.
β Ureterica.
γ Vesicalis.
δ Urethralis.
6. Dysuria.
α Ardens.
β Spasmodica.
γ Compressionis.
δ Irritata.
7. Sitis.
8. Dyspermatismus.
α Organicus.
β Spasmodicus.
9. Agalaxis.

Order VI. SPASMI.

Genus I. Tonos.
Sp. 1. Trismus.
α Infantum.
β Traumatica.
2. Tetanus.
α Opisthotonus.
β Emprosthotonus.
γ Catochus.
3. Contractura.
α Colli.
β Artuum.
4. Priapismus.
5. Strabismus.

Genus II. Clonos.
Sp. 1. Epilepsia.
α Cerebralis.
β Sympathica.
γ Irritata.
2. Convulsio.
α Idiopathica.
β Irritata.
3. Hysteria.
α Asthenica.
β Irritata.
4. Chorea.
5. Raphania.

6. Palpitatio.
α Hysterica.
β Irritata.
7. Pertussis.
8. Colica.
α Stercoraria.
β Venenata.
9. Hydrophobia.
10. Pandiculatio.
11. Beriberia.

Order VII. ADYNAMIÆ.

Genus I. Coma.
Sp. 1. Carus.
α Catalepsis.
β Ecstasis.
2. Apoplexia.
α Sanguinea.
β Serosa.
γ Hydrocephalica.
δ Asthenica.
ε Suffocata.
ζ Metastatica.
3. Paralysis.
α Hemiphlegia.
β Paraplegia.
γ Partialis.
δ Venenata.
4. Syncope.
α Cardiaca.
β Metastatica.
γ Occasionalis.
δ Angens.

Genus II. Anepithymia.
Sp. 1. Anorexia.
2. Dyspepsia.
α Idiopathica.
β Metastatica.
3. Chlorosis.
4. Amentia.
5. Amaurosis.
α Intermittens.
β Nyctyalopia.
6. Agenesia.
7. Atrophia.

Order VIII. PARANOIÆ.

Genus I. Morositas.
Sp. 1. Bulimia.
α Helluonum.
β Syncopalis.
γ Convalescentium.
2. Pica.
α Chlorotica.
β Pregnantium.
γ Afrorum.
3. Hypochondriasis.
α Nostalgia.

Genus II. Hallucinatio.
Sp. 1. Satyriasis.
2. Nymphomania.
3. Erotomania.

Genus III. Vesania.
Sp. 1. Melancholia.
2. Mania.
α Mentalis.
β Metastatica.
γ Venenata.
Paraphrosyne. Auctorum.
3. Oneirodynia.
α Activa.
β Gravans.

Order IX. CACHEXIÆ.

Genus I. Impetigo.
Sp. 1. Scorbutus.
2. Syphilis.
3. Aurigo.
4. Phænigmus.
5. Melasma.
6. Rubigo.

Genus II. Macula.
Sp. 1. Echymosis.
2. Petechia.

Order X. INTUMESCENTIÆ.

Genus I. Tuber.

§ I. *Universi.*

Sp. 1. Polysarcia.

§ II. *Partium.*

2. Rachitis.
3. Exostosis.
4. Physconia.
α Hepatica.
β Splenica.
γ Renalis.
δ Uterina.
ε Visceralis.
ζ Mesenterica.
η Externa.

§ III. *Cutis.*

5. Elephantiasis.
6. Frambæsia.
7. Pellagra.
8. Lepra.
9. Verruca.
10. Ganglion.

§ IV. *Glandium.*

11. Sarcoma.
α Pterigium.
β Hordeolum.
12. Scrophula.
13. Encystis.
α Atheroma.
β Steatoma.
γ Testudo.
δ Meliceris.
14. Schirrus.
15. Cancer.
16. Parotis.

Genus II. Phlegmatia.
Sp. 1. Anasarca.
α Oppilata.
β Exanthematica.
γ Anæmia.
δ Dolens.
2. Hydrocephalus, (externus).
3. Hydrorachitis (Spina Bifida).
4. Hydrothorax.
5. Ascites.
α Asthenica.
β Metastatica.
6. Hydrometra.
7. Hydrocele.
8. Exomphalos.

Genus III. Cystis.
Sp. 1. Aneurisma.
2. Varix.
3. Mariscus.
4. Staphyloma.
5. Hydatis.
6. Abscessus.

Genus IV. Emphysema.
Sp. 1. Pneumatosis.
α Traumatica.
β Venenata.
2. Tympanites.
α Intestinalis.
β Abdominalis.
3. Physometra.

Order XI. ECTOPIÆ.

Genus I. Hernia.
Sp. 1. Enterocele. *Intestini.*
2. Epiplocele. *Omenti.*
3. Gastrocele. *Ventriculi.*
4. Hepatocele. *Hepatis.*
5. Splenocele. *Lienis.*
6. Hysterocele. *Uteri.*
7. Cystocele. *Vesicæ.*
8. Encephalocele. *Cerebri.*

Genus II. Prolapsus.
Sp. 1. Exophthalmia. *Oculi.*
2. Blepharoptosis. *Palpebræ.*
3. Hypostaphyle. *Uvulæ.*
4. Paraglossæ. *Linguæ.*
5. Exania. *Recti.*
6. Exocyste. *Vesicæ.*
7. Hysteroptosis. *Uteri, vel Vaginæ.*

Genus III. Luxatio.
Sp. 1. Calcis.
2. Capitis.
3. Carpi.
4. Claviculæ.
5. Coccygis.
6. Colli.
7. Costarum.
8. Digitorum.
9. Femoris.
10. Fibulæ.
11. Genu.
12. Humeri.
13. Malleoli.
14. Manus.
15. Maxillæ.
16. Metacarpi.
17. Nasi Ossis.
18. Olecrani.
19. Patellæ.
20. Tali.
21. Vertebrarum.

Order XII. Plagæ.

Genus I. Dialysis.
Sp. 1. Vulnus.
2. Ulcus.
3. Punctura.
4. Excoriatio.
5. Ruptura.
6. Sinus.
7. Fistula.

Genus II. Clasis.
Sp. 1. Fractura.
2. Fissura.
3. Rhagas.
4. Arthrocace.

Genus III. Diastasis.
Sp. 1. Symphysis Pubis.

Though from mature reflection we are convinced of the advantages of this plan, we have not ventured to disturb, through this work, the usual nomenclature, nor the received definitions. We have also, in general, avoided nosological disquisitions, as we wished to confine all our observations on these points to a single article; and consequently, if our ideas are rejected, we shall occasion no difficulty to the student, either by innovations of language or arrangements. We shall therefore now proceed to the definitions, and shall close this article with some remarks in defence of the present system, and the definitions now introduced.

Order I. PYREXIÆ. Heat, after coldness and shivering; debility; mind unsteady; tendons of the wrist tense; pulse either preternaturally quick or weak.

Genus I. INTERMITTENS. "Fever" returning after various and generally regular intervals, having each paroxysm apparently terminated by sweating.

Sp. 1. *Quotidiana.* Intermittent fever, returning after an interval of twenty-four hours.

2. *Tertiana.* Returning after an interval of forty-eight hours.

3. *Quartana.* After an interval of seventy-two hours.

4. *Erratica.* After intervals generally uncertain, but always longer than seventy-two hours.

5. *Complicata.* Irregularly returning paroxysms, from a complication of a tertian and a quartan, two tertians, or two quartans.

Genus II. EXACERBANS. "Fever," exacerbating and remitting, without ever disappearing; remissions distinguished by sweating, or a cloud in the urine; one paroxysm only occurring in twenty-four hours.

Sp. 1. *Mitis.* "Exacerbating fever," without remarkable debility or putridity.

2. *Maligna.* With great debility, often with putrefactive symptoms, rapid and usually fatal.

3. *Hectica.* Exacerbations distinctly returning every evening, terminated very commonly by sweating.

Genus III. CONTINUA. "Fever" with remissions less evident, and seldom marked by critical discharges; having usually two exacerbations in twenty-four hours.

Sp. 1. *Synocha.* "Continued fever," with great heat, frequent strong and hard pulse, urine red; mind but slightly affected.

2. *Typhus.* "Continued fever," with pulse and heat, in the beginning moderate, and remissions unusually distinct; mind very unsteady; debility considerable; urine clear; in the advanced stages, putridity, tremors, and convulsions.

3. *Synochus.* "Continued fever," commencing like synocha; in its progress resembling typhus, though more mild, and often attended with bilious discharges.

Order II. PHLEGMASIÆ. Local fixed pains, with a læsion of the functions of the diseased organ, an increased discharge from its vessels, usually attended with "fever." When external, the parts affected are floridly red, generally swollen; the tumour often circumscribed, ending in effusion, suppuration, or gangrene.

Genus I. INFLAMMATIO. Local "phlegmasia" with fever, usually inflammatory.

Sp. 1. *Phlegmon.* "Local inflammation" on the surface, pain generally throbbing.

2. *Ophthalmia.* Inflammation in the eye, or its lids; light painful, and the pain peculiarly acute.

Var. α *Epidemica,* Egyptian ophthalmy.

β *Sporadica,* accidental inflammation of the eye.

γ *Tarsi,* inflammation of the eyelids.

3. *Phrenitis.* Pain of the head; the pain from light and sound highly acute; face flushed; eyes red; synocha, with watchfulness and delirium.

4. *Cynanche.* Redness and pain of the fauces and throat; swallowing painful and difficult, often impossible; swelling in the tonsils, and sometimes in the neck; breathing occasionally difficult, and stridulous.

Var. α *Faucium.* Redness at the back part of the throat, conspicuous and considerable.

β *Tracheæ.* Redness less conspicuous, breathing difficult and stridulous.

γ *Parotidæa.* Tumours external, difficulty of swallowing slight, often alternating, with tumours of the testes; in females of the mammæ.

5. *Pneumonia.* Pain in some parts of the chest; cough, at first dry, afterwards attended with expectoration, often bloody.

Var. α *Pleuræ.* Pulse full and hard; pain violent; synocha severe; often without expectoration.

β *Pulmonum.* Pulse less hard, and pain less pungent; dyspnœa acute; suffocation on lying down; face purple; sputum glutinous, green, and yellow; towards the solution white and equable.

γ *Diaphragmatis.* Pain at the lower ribs, extending to the back; breathing interrupted and painful; hiccough, without expectoration.

ε *Hepatica.* Pain extending downward toward the right side; pulse less full and hard; sputum yellow.

ζ *Rheumatica.* Pulse hard and strong, without cough; side affected, externally sore.

6. *Hepatitis.* Tension and often soreness in the right hypochondrium, extending occasionally to the right shoulder; expectoration generally yellow.

7. *Carditis.* Pain under the sternum, sometimes

pungent; violent palpitation, with great anxiety; pulse small, and generally unequal

Var. α *Mediastina.* Pain more strictly confined to the middle of the sternum, with less palpitation and anxiety; without expectoration.

β *Pericarditis.* Pain more acute; palpitation violent.

8. *Gastritis.* Pain with frequently a circumscribed tumour, and soreness at the pit of the stomach; vomiting, even of the mildest fluids, incessant; pulse soft, weak, and sometimes fluttering.

9. *Enteritis.* Violent colic, with soreness of the abdomen; costiveness obstinate, often with vomiting, frequently with ischuria.

Var. α *Mesenterica.* Pain deeply seated, without soreness of the abdomen; costiveness and ischuria less violent.

β *Epiploitis.* Tumour more sensible; seldom with ischuria.

γ *Peritonitis.* External soreness, and pain extreme, increased on raising the body; without constipation or relief from stools.

δ *Rheumatica.* Great external soreness and acute pain, chiefly felt at the lowest ribs, and the spine of the ileum.

10. *Nephritis.* Pain shooting from the loins into the thighs; micturition painful and frequent, with a retraction of either testicle, and a numbness of the thigh on the same side; often with vomiting.

11. *Cystitis.* Inflammation, pain, and swelling of the hypogastrium; micturition painful or obstructed; frequently with tenesmus.

12. *Hysteritis.* Swelling and pain of the hypogastrium; micturition slightly affected; the os tincæ sore and painful.

13. *Odontalgia.* Pain of the teeth and jaws, extending to the ear, and often to every part of the head on the side affected; at first increased, afterwards relieved, by heat.

Genus II. Phlogosis. Inflammation; pain less violent; tumour inconsiderable; redness less florid, irregular, extending; with debility, often with typhus; terminating generally and rapidly in gangrene.

Sp. 1. *Erythema.* External "Phlogosis" of a pink colour, disappearing on pressure; pain bruning; terminating generally in branny scales, often in phlyctenæ or vesicles, at last in gangrene.

Var. α *Mitis.*

Pernio. From cold, generally in the fingers, toes, or heel.

Combustio. From violent heat.

β *Maligna.*

Anthrax. A hard deep-seated tumour with a burning heat, of a dark colour, rapidly hastening to gangrene.

2. *Phrenitica.* Pain of the head inconsiderable; face pale; restlessness, low delirium, with occasional fits of violence.

3. *Anginosa.* "Phlogosis" of the throat and fauces, frequently with ulcerations, deep and ragged at the edges; severe typhus; deliquium; often with erythema on the skin.

4. *Pneumonica.* Symptoms of pneumonia, but with the face pale, the features sunk, and a pulse, though apparently strong, stopped by a slight pressure; deliquium, particularly after discharges.

5. *Puerperalis.* Typhus, usually attacking on the third day after delivery; pain and soreness of the abdomen; face pale; eyes sunk; a tensive pain in the forehead, with a retrocession of the milk.

Genus III. Catarrhus. Inflammation of the glands of the mucous membrane, with an increased discharge of mucus, at first thin, acrid and discoloured, afterwards whiter and of a greater consistence.

Sp. 1. *Coryza.* Catarrhal inflammation of the membrane of the nose, fauces, and bronchiæ, with sneezing and coughing; occasionally epidemic and infectious.

Var. α *Contagiosa,* with typhus, and considerable depression of strength.

β *Senilis,* with fever slight and inconsiderable, but with great discharge of mucus.

γ *Arthritica.* From gout repelled or irregular, with a copious discharge of an acrid, greenish, mucus.

δ *Trachealis.* Great difficulty of breathing, with a stridulous sound, terminating in suffocation from a concreted effusion.

2. *Dysenteria.* Violent colic, with tenesmus; very frequent stools, mucous and often bloody, rarely, except in the decline of the disease, feculent; often epidemic; generally infectious.

Var. α *Epidemica.* With typhoid fever, great dejection of spirits, and loss of strength.

β *Sporadica.* With milder fever, and less debility; not epidemic.

3. *Cœliaca.* Colic generally without fever, except after some continuance; without tenesmus; the discharges mucous without infection.

4. *Phthisis.* Cough, at first short and dry, afterwards more violent, with a mucous, and at last a purulent, expectoration; great debiilty and emaciation; fever exacerbating in the evening, pulse unusually quick.

5. *Cystirrhœa.* A light, white, floculent discharge accompanying the urine, not fetid; micturation painful without tenesmus.

6. *Leucorrhœa.* A mucous discharge from the vagina, of a yellowish white colour, verging to green; without infection, or pain in mak-

ing water; disappearing during menstruation.

7. *Gonorrhœa.* A discharge resembling that of leucorrhœa, from the penis or vagina, generally with inflammation at the orifice of the urethra, and pain in making water; not disappearing during menstruation.

Var. α *Venerea.* From venereal infection; contagious.

β *Benigna.* With little pain in making water; not contagious.

8. *Leucorrhois.* A whitish discharge from the anus, often with hæmorrhoidal tumours, sometimes periodical.

Genus IV. ARTHRITIS. Inflammation usually confined to the joints, occasionally extending to the adjoining muscles; generally with fever; often with hectica.

Sp. 1. *Rheumatismus.* "Articular inflammation," chiefly of the large joints, with pain; synocha; generally increased heat of the part; not terminating in suppuration.

Var. α *Lumbago.* Rheumatic pain in the loins, not shooting down the thigh; chiefly felt on motion.

β *Ischias.* Pain in the hip joint; without peculiar debility, emaciation of the nates on the affected side, or elongation of the limb.

γ *Pleurodyne.* Pneumonia rheumatica, q. v.

2. *Arthrodynia.* "Articular inflammation," with little or no fever; limb cold and rigid, without swelling.

3. *Podagra.* Inflammation and pain, chiefly of the smaller joints, preceded by anorexia, dyspepsia, a dejection of spirits, or want of sleep; returning after intervals, sometimes regular, and alternating with atonic, occasionally with inflammatory, affections of the head, stomach, or bowels.

4. *Hydrarthus.* Deep-seated pain in the joints; swelling slight, without discoloration, often ending in suppuration, sometimes within the capsular ligament; attended with hectic.

Var. α *Psoadicus.* Pain beginning in the back, increased by stooping, or extending either leg; the suppuration pointing in the groin, the thigh, or the back; with hectic.

β *Coxarius.* Pain in the coxendix, at first slight and obtuse, afterwards acute; nates of the side affected extenuated; leg elongated, attended at last with hectic.

γ *Genu.* Hydrarthus affecting the knee, attended in the latter stages with acute pain and hectic fever; in favourable circumstances terminated by anchylosis.

Genus V. EXOSTOSIS. A swelling apparently of the bone, generally near the middle, painful in the heat of the bed and sore to the touch, generally from lues.

Sp. 1. *Periostea.* Chiefly confined to the periosteum.

Order III. ERUPTIONES. Erythematous or phlegmonous eruptions on the surface, or the fauces, generally distinct; the latter rising above the skin, circumscribed, roundish; generally containing a fluid, sometimes in the decline purulent.

Genus I. EXANTHEMA. Eruptions generally depending on specific contagion, often epidemic, usually with fever.

Sp. 1. *Variola.* Synocha, followed on the third day by the eruption of small phlegmons, completed on the fifth, suppurating, and forming crusts on the eighth, frequently leaving cuticular cicatrices or depressions.

Var. α *Confluens.* Phlegmons numerous and crowded, not rising in separate heads.

β *Crystalina.* Phlegmons filled with a clear watery fluid, seldom or imperfectly suppurating.

2. *Vaccina.* Phlegmon only on the part affected, from inoculation or infection in consequence of milking diseased cows; the phlegmon nearly round, with a dark brown depression in the middle; fever usually inconsiderable.

3. *Rubeola.* Catarrhus, with synocha; cough harsh; eyes inflamed and watery; followed by red papulæ, running together, scarcely rising above the skin; terminating in branny scales.

Var. α *Maligna.* Catarrhus with typhus; the papulæ dark, interspersed with dark coloured petechiæ; great oppression at the breast, without expectoration.

β *Variolodes.* Papulæ resembling phlegmons, catarrhal symptoms absent or inconsiderable.

4. *Varicella.* Pustules resembling the variolous, following a slight fever, after no definite period; seldom suppurating, but disappearing in branny scales.

5. *Miliaria.* Fever typhoid, with sighing, anxiety, and sweat of a sour smell; followed by numerous distinct papulæ, terminating in points.

Var. α *Purpura.* Apices of the papulæ purple; with typhus.

β *Alba.* Apices of the papulæ white, with slight synocha.

6. *Scarlatina.* Fever, often at night with delirium; on the fourth day a swelling, and a scarlet effusion on the face, with a similar effusion soon afterward on the breast, and in succession on the body and legs; the effusion often in large spots, frequently coalescing and terminating in branny scales.

Var. α *Cynanchica.* Scarlatina, "with phlogosis anginosa."

7. *Erysipelas.* After a fever of three or four days, phlogosis in the face, occasionally in other parts, accompanied, more often succeeded, by delirium; terminating in branny scales.

Var. α *Intermittens.* Erysipelas irregularly returning at distant intervals, chronic, with little fever.

8. *Pestis.* Asthenic fever, with great internal heat, terminating in bubos of the groin or axilla, sometimes in anthrax.

9. *Pemphigus.* Fever generally typhoid, terminating in vesicles filled with thin ichor; sometimes with a lighter-coloured serum.

10. *Aphtha.* Fever followed after a few days by a swelling in the tongue, and a purplish colour on the fauces, terminating in white, frequently distinct, sloughs on the fauces and palate; frequently with diarrhœa and cœliaca, sometimes with hæmorrhage.

Var. α *Maligna.* The sloughs of a darker colour, leaving, when abraded, a dark ragged ulcer.

β *Sporadica.* Seldom attacking numbers at the same time; the eruption more slightly connected with fever.

11. *Urticaria.* Exacerbating fever; eruptions after each attack, sometimes resembling the stinging of nettles, sometimes rising in small papulæ; seldom suppurating, but terminating in dry scabs.

12. *Strophulus.* After sickness and uneasiness in new-born children, an eruption of red papulæ, rising above the skin, frequently coalescing, though sometimes distinct, and filled with a serous fluid.

13. *Achor.* Swellings in different parts of the body, resembling phlegmons, discharging sebaceous, sometimes puriform, matter, from minute foramina; fever slight, often indistinct.

Genus II. Efflorescentia. Eruptions not rising, or rising slightly above the skin, without fever; not epidemic.

Sp. 1. *Psora.* Pustules, at first white, afterwards filling with serum, degenerating into little red inflamed papulæ, chiefly between the fingers; itching, particularly when warm in bed; contagious.

2. *Prurigo.* Itching in different parts, often without pustules, or with pustules not filling with serum; terminating in branny scales.

3. *Lichen.* An extensive eruption of papulæ, generally connected with internal disease, usually terminating in scurf; recurrent; not contagious.

Var. α Purpura chronica scorbutica Hoffmanni.

4. *Herpes.* Efflorescence, consisting of clusters of small red pustules, itching with a burning heat, and terminating in a branny crust.

5. *Phlyctena.* Vesicles pellucid, filled with a serous fluid, inflamed at the base; painful when burst.

6. *Petechia.* Spots not rising above the skin, resembling the bites of fleas, at first red, afterwards of a cinnamon colour, in succession brown and black, often with spontaneous hæmorrhage.

7. *Vibex.* Marks on the skin in stripes, of a dark brown colour, often mixed with petechiæ.

8. *Tinea.* Ulcers in the hairy scalp, pouring out a fluid concreting into a white friable crust; generally rounded in its figure.

9. *Eczema.* Small vesicles with considerable itching; vesicles scarcely distinguishable from papulæ, with often an erysipelatous swelling; from the use of mercury.

Order IV. PROFLUVIA. A flow of blood, or of secreted fluids, from their respective vessels or ducts; often with fever.

Genus I. Hæmorrhagia. A discharge of blood.

Sp. 1. *Epistaxis.* "Hæmorrhage" from the nose, preceded by headach, and often a burning heat in the nose.

2. *Stomacace.* Blood oozing from the gums, without fever.

3. *Hæmoptysis.* Blood thrown up by coughing, preceded by flushed cheeks, dyspnœa, a sense of weight in the head and breast.

4. *Hæmatemesis.* Blood thrown up by vomiting, preceded by sickness and faintness; seldom coagulated, generally in considerable quantity.

Var. α *Febrilis,* preceded or attended by fever.

β *Asthenica,* in weak or scorbutic habits.

5. *Melæna.* A discharge of a blackish substance from the stomach or intestines often foliated or filamentous, sometimes verging to a yellowish brown colour.

6. *Hæmorrhois.* Blood flowing from the anus, often preceded by pain and load in the head; frequently accompanied by painful, livid tumours near the verge of the anus, or a painful weight within the rectum.

7. *Mænorrhagia.* An unusual flow of blood from the vagina, often with a sense of weight in the loins, and occasionally with a sensation of weight forcing down on the os externum.

8. *Hæmaturia.* A considerable discharge of blood with the urine, often with violent forcing pains, felt at the extremity of the penis; tenesmus, without sickness.

9. *Vicaria.* Discharges of blood from different organs, in consequence of suppressed evacuations, or the natural ones not taking place.

Var. α *Narium,* from the nose.

β *Pulmonum,* from the lungs.

γ *Ventriculi,* from the stomach.

δ *Venarum hæmorrhoidalium,* from the hæmorrhoidal veins.

ε *Vesicæ,* from the urinary bladder.

ζ *Gingivarum,* from the gums.

Genus II. Apocenosis. Increased discharges from

glands, or the cavities into which their contents are usually poured; in general without fever.

Sp. 1. *Vomitus.* A discharge from the stomach, either bilious, mucous, or watery.

Var. α. *Cholera.* A discharge of bile, often with colic; when violent and incessant, attended with spasms of the legs.

β. *Pyrosis.* A discharge of cold water, generally preceded by acute pain.

γ. *Atonica.* Constant vomiting of whatever is taken in, with a large proportion of heavy mucus; often after repelled gout and eruptions, generally in old age; the consequence often of high living, and the abuse of spirituous liquors.

2. *Diarrhœa.* Frequent discharges by stool; often with colic; generally without fever.

Var. α. *Lienterica.* The discharge apparently chylous.

β. *Aquosa.* Without fæces or scybala.

3. *Diabetes.* An immoderate discharge of urine, with thirst, anorexia, and emaciation; without pain or fever.

Var. α. *Mellitus.* Urine sweet without any portion of the urea or animal matter.

β. *Aquosus.* Urine differing little from water; discharged often involuntarily.

γ. *Mucilaginosus.* Containing a large proportion of mucilage or gluten.

4. *Diuresis.* A discharge of limpid urine, returning at intervals, without emaciation.

5. *Ephidrosis.* An immoderate discharge of sweat without fever.

6. *Plica.* The hair twisted in cirrhi, in consequence of a discharge of blood or serum from the bulbs into the cavities of each hair; with fever; contagious; and in Poland endemical.

7. *Epiphora.* An increased discharge from the lacrymal glands.

8. *Ptyalismus.* An increased discharge of saliva.

Var. α. *Hydrargyratus.* In consequence of large doses of mercury, often continuing after the medicine has ceased to act.

β. *Asthenicus.* The driveling of idiots, or those affected with palsy.

γ. *Mellitus.* With a sweetness or mucilaginous taste in the mouth.

9. *Exoneirosis.* An involuntary discharge of semen during sleep, independent of lascivious dreams.

Order V. SUPPRESSORII. Obstructions of natural passages, and of natural or morbidly critical discharges.

Genus I. CONSTRICTORIA. "Obstruction" from organic disease.

Sp. 1. *Dysphagia.* Difficulty of swallowing from a sensible obstruction of the œsophagus.

2. *Obstipatio.* Obstruction in the track of the stomach and intestines below the œsophagus.

Var. α. *Pylori.* Food taken into the stomach, often returned by vomiting, eructations, loss of strength and flesh; with costiveness; frequently unconquerable, always obstinate.

β. *Intestinorum.* Bowels obstinately costive, without vomiting; fulness often in some part of the abdomen, to be felt through the integuments.

γ. *Recti.* A retention of solid feculent matter, with tenesmus, and a slight watery diarrhœa; a contraction often within the reach of the finger.

3. *Polypus.* Obstructions in the heart or other natural passages.

Var. α. *Narium.* Breathing through the nose difficult or impossible; sometimes with load in the head, or symptoms of hydrocephalus.

β. *Cordis.* Palpitation of the heart, with anxiety and dyspnœa.

γ. *Uteri.* Weight and bearing down of the uterus, generally with amænorrhœa, often with a serous discharge resembling leucorrhois; generally without pain.

Genus II. ANHELATIO. An obstruction to the passage of air into the lungs.

Sp. 1. *Asthma.* A difficulty of breathing, with a sense of constriction in the breast; hissing sound in respiration; cough, terminated by expectoration; temporary; recurrent.

Var. α. *Spontaneum.* Suddenly, often unexpectedly, recurring, without any other disease; seldom terminated by expectoration, or at least expectoration in any considerable quantity.

β. *Plethoricum.* From suppressed sanguineous discharges, or from plethora.

γ. *Senile.* Frequently recurring, with copious expectoration.

2. *Dyspnœa.* Difficulty of breathing constant, with a sensation of weight, rather than constriction on the breast; cough constant, with little or insufficient expectoration.

Var. α. *Catarrhalis.* Chronic catarrh of old people.

β. *Terrea.* Dyspnœa from calculous concretions, frequently discharged.

γ. *Aquosa.* With a scanty discharge of urine, in leucophlegmatic habits.

Genus III. EPISCHESIS.

§ I. *Sanguinea.*

Sp. 1. *Amœnorrhœa.* A deficiency or obstruction of the menstrual discharge, at the time of life, or the periods, when it should naturally take place.

Var. α. *Dolorifica.* A deficient discharge, attended with violent pain.

2. *Dyslochia.* A want or suppression of the lochial discharge.

3. *Dyshæmorrhois.* A suppression of the hæmorrhoidal discharge, attended with headach, dyspepsia, and fever.

§ II. *Excretorum.*

4. *Icterus.* An obstruction of the bile, known from unfrequent, white stools, and a yellowness of the skin; urine of a yellow red colour, tinging linen immersed in it of a yellow colour.

Var. α. *Calculosa.* With acute pain at the pit of the stomach.

β. *Biliosa.* In persons of a studious, sedentary life, often attended with hypochondriasis.

γ. *Spasmodica.* Following violent fits of anger.

5. *Ischuria.* An obstinate, and often a complete, suppression of urine.

α. *Renalis.* With a pain and weight in the loins, without tumour in the hypogastric region.

β. *Ureterica.* With a sense of weight in the lower part of the pelvis, without hypogastric tumour.

γ. *Vesicalis.* With a tumour in the hypogastrium, a frequent desire to make water; a pain felt at the extremity of the penis.

δ *Urethralis.* With a tumour in the hypogastrium, a frequent desire to make water, and a sense of obstruction in the urethra, not admitting the introduction of a catheter.

ε *Paralytica.* Without symptoms of accumulation in any part of the urinary track.

6. *Dysuria.* A painful, and in some degree an obstructed, discharge of urine.

Var. α *Ardens.* With pain, and often inflammation of the bladder and urethra.

β *Spasmodica.* From spasm in other parts, communicated to the neck of the bladder.

γ *Compressa.* From tumours in the neighbouring parts, compressing the neck of the bladder.

δ *Irritata.* From calculus.

ε *Arthritica.* In gouty habits, with a discharge of greenish mucus.

7. *Sitis.* An unconquerable desire for liquids, sometimes accompanying diabetes or fever.

8. *Dyspermatismus.* An obstruction to the excretion of semen, or a slow, painful, and insufficient discharge of it.

Var. α *Organicus.* From strictures of the urethra, or neighbouring tumours.

β *Spasmodicus.* From terror, apprehension, or sudden surprise.

9. *Agalaxis.* A suppression of milk, either when first expected, or after the secretion has come on.

Order VI. SPASMI. Violently continued or irregular action of the muscular fibres of different parts.

Genus I. TONOS. Muscular contractions, sometimes remitting, but not succeeded by complete relaxation.

Sp. 1. *Trismus.* A violent and continued action of the muscles which close the lower jaw.

Var. α *Infantum.* Trismus of newly born infants, with usually a retention of the meconium.

β *Traumatica.* From wounds, particularly lacerated ones in hot climates; sometimes from ulcers.

2. *Tetanus.* Tonic spasm of the voluntary muscles, beginning with pain and tension on the back of the neck, occasionally confined to one side, or, at least, a considerable portion of the body.

Var. α *Emprosthotonus.* Tetanus of the flexor muscles.

β *Opisthotonus.* Tetanus of the extensors.

γ *Catochus.* Tetanus gradually approaching without dyspnœa.

3. *Contractura.* Tonic spasm of particular muscles.

Var. α *Colli.* Of the sterno mastoid, producing the wry neck.

β *Artuum.* Of different limbs, chiefly from confinement or the irritation of abscesses.

4. *Priapismus.* Tonic spasm of the erectores penis, with violent pain.

5. *Strabismus.* Tonic spasm of the abductores, the adductores, occasionally of the other muscles of the eye, usually at first attended with double vision.

Genus II. CLONOS. Muscular contraction rapidly and repeatedly succeeded by relaxation.

Sp. 1. *Epilepsia.* Clonic spasm of all the muscles, generally with carus, returning after intervals, often regular.

Var. α *Cerebralis.* Without evident cause, or preceding symptoms, except sometimes a slight giddiness.

β *Sympathica.* Preceded by an obscure feeling in a distant part, and a sensation of cold air, rising from that part to the head.

γ *Irritata.* From irritation in different parts, particularly the stomach and the head, without the sensation of cold air.

2. *Convulsio.* Clonic spasm of all the muscles, without carus, seldom recurrent.

Var. α *Irritata.* From the stomach, injuries of the brain, teething, &c.

3. *Hysteria.* Clonic spasm, preceded frequently by a rumbling sound of the stomach, with a sensation of a ball in the throat, impeding deglutition; urine copious and limpid; temper variable.

Var. α *Asthenica.* In weak mobile habits, often without any evident cause.
β *Irritata.* From any sudden affection of the mind, or irritations in the stomach and bowels.
4. *Chorea.* Clonic spasm, particularly in the fingers, legs, and lips, producing strange gesticulations and grimaces; with a weakness of either leg; often insensibility.
5. *Raphania.* Chlonic spasm, with often a contraction of the joints; pain very violent; intermitting.
6. *Palpitatio.* Violent and irregular action of the heart.
α *Cardiaca.* From diseases of the heart, or larger arteries.
β *Hysterica.* Occurring in the mobile habits, subject to hysteria.
γ *Irritata.* From irritations chiefly in the stomach and bowels.
7. *Pertussis.* Cough violently convulsive; inspiration sonorous; recurring in paroxysms; contagious; at the end with expectoration.
8. *Colica.* Violent pain in the bowels, remitting and exacerbating, chiefly felt about the navel, with vomiting and costiveness.
Var. α *Stercoraria.* From accumulated contents of the intestines; preceded by costiveness or slight watery stools.
β *Venenata.* From poisons, often of lead.
9. *Hydrophobia.* Convulsions of the pharynx, excited by an attempt to drink water or any fluid, preceded by melancholy, and increased sensibility; in consequence of the bite of a mad animal.
10. *Pandiculatio.* The extension of almost all the limbs; involuntary, generally with gaping.
11. *Beriberia.* A convulsive retraction of the knees in walking, with tremor, a sense of creeping, and a hoarseness of voice.

Order VII. ADYNAMIÆ. A defect or a diminution of sensation, motion, or the natural functions; often with stupor.

Genus I. COMA. A deep and continued stupor, with a diminution or loss of muscular power; often with stertor.

Sp. 1. *Carus.* A continued stupor, and insensibility without stertor.
Var. α *Catalepsis.* Limbs flexible, continuing in the posture in which they were placed.
β *Ecstasis.* Limbs rigid, retaining the position in which the person was seized.
2. *Apoplexia.* Coma with stertor.
Var. α *Sanguinea.* After heat, violent exercise, or blows on the head; in the young and plethoric.
β *Serosa.* Coma gradually approaching in advanced life.
γ *Hydrocephalica.* Coma, with scanty urine, obstinate costiveness, and strabismus.
δ *Asthenica.* Coma, rapidly, often suddenly approaching in impaired constitutions; frequently with convulsions.
ε *Suffocata.* From noxious gases, hanging or drowning.
ζ *Metastatica.* From serous, excretory, or sanguineous obstruction, gout or repelled eruptions.
3. *Paralysis.* A loss of motion in some of the limbs, and impaired natural functions; without stertor; sometimes, without stupor.
Var. α *Hemiphlagia.* With loss of motion on one side.
β *Paraphlegia.* With loss of motion in the lower extremities, without stupor.
γ *Partialis.* With loss of motion in particular limbs, without stupor or stertor.
δ *Venenata.* From poison of lead, tobacco, or deleterious gases.
4. *Syncope.* A diminished motion of the heart and arteries, often with stupor; occasionally recurring.
Var. α *Cardiaca.* From some defect in the heart or larger vessels.
β *Metastatica.* From retrocession or repulsion, of exanthemata, or gout; sometimes from fever or scurvy.
γ *Angens.* With violent pain in the breast, shooting down to the arms, often with a sense of stricture, on the breast.

Genus II. ANEPITHYMIA. A diminution of power in the different functions.

Sp. 1. *Anorexia.* Loss of appetite, with languor, flatulence, and a sense of sinking in the stomach.
2. *Dyspepsia.* Flatulence with sour eructations; often with sickness, and a putrid taste at the back part of the fauces.
α *Idiopathica.* Without any previous disease.
β *Metastatica.* From repelled eruptions, obstructed discharges, depressing passions, atonic gout, &c.
3. *Chlorosis.* Languor and debility, with pale complexion, often dyspepsia; without fever; generally attendant on amœnorrhæa.
4. *Amentia.* Impaired mental functions from excessive evacuations, irregular living, or old age; generally with debility.
5. *Amaurosis.* Impaired sight, with an enlarged pupil, not contracting on the approach of a strong light.
Var. α *Intermittens.* Blindness sometimes recurring at night; at others only on the return of day-light, nyctyalopia auctorum.
6. *Agenesia.* The power of generation impaired.
7. *Atrophia.* Emaciation of the whole body,

often with hectica, frequently with a swelling of the abdomen.

Order VIII. PARANOLÆ. Violent or irregular exertion of the different corporeal or mental functions, often alternating with languor and depression of body or mind.

Genus I. MOROSITAS. Violent or irregular derangements of the appetite, occasionally of digestion.

Sp. 1. *Bulimia*. A craving appetite for a larger proportion of food than the stomach can digest, or oftener than the system requires.

Var. α *Helluonum*. From indulgence of gluttony.

β *Syncopalis*. From a sense of inanition.

γ *Convalescentium*. After fevers, or excessive discharges.

2. *Pica*. An aversion to common food, and an eager desire for substances not esculent or alimentary.

Var. α *Chlorotica*. Attending amænorrhœa, often about the age of puberty.

β *Pregnantium*. The pica of pregnancy.

γ *Afrorum*. Cachexia Africana, dirt-eating; a disease of negroes in Jamaica.

3. *Hypochondriasis*. Dyspepsia with costiveness, fancies irregular, mind desponding.

Var. α *Nostalgia*. Hypochondriasis, with a longing for home, when in a foreign country.

Genus II. HALLUCINATIO. Violent or irregular sexual passions.

Sp. 1. *Satyriasis*. Violent and excessive lust with priapism.

2. *Nymphomania*. Satyriasis of females, with inflammation of the nymphæ.

3. *Erotomania*. Chaste love in excess, when the object is unattainable; with melancholy, sleeplessness, and often hectic.

Genus III. VESANIA. Irregular exertion of the mental functions, occasionally with excess of excitement, sometimes of depression; without coma or fever.

Sp. 1. *Melancholia*. Depression of the mental powers, with erroneous judgment, though in general with correct perceptions, without dyspepsia.

2. *Mania*. Erroneous perceptions or judgment, often of both; with great violence.

Var. α *Mentalis*. Apparently from passions of the mind only.

β *Metastatica*. From repelled eruptions, gout, or obstructed discharges.

γ *Venenata*. From narcotic poisons, paraphrosyne auctorum. Van Helmont.

3. *Oneirodynia*. Disturbed sleep, sometimes with an imagination peculiarly active, at others, with a sense of oppression.

α *Activa*. Sonambulism.

β *Gravans*. Ephialtes, night mare.

Order IX. CACHEXIÆ. A change in the colour of the skin, generally from a chemical change in the nature of the fluids.

Genus I. IMPETIGO. A change of colour in the whole body.

Sp. 1. *Scorbutus*. Livid spots over the whole body, particularly at the roots of the hair, with great loss of strength, and bleeding from the gums; generally from food not alimentary.

Var. α *Nautarum*. The scurvy of sailors on long voyages, without a supply of vegetables.

β *Asthenica*. Occurring in besieged towns, or from poor living in confined apartments without exercise.

2. *Syphilis*. Spots sometimes level with the skin, but occasionally rising in small tubercles, particularly at the roots of the hair, degenerating into crusty ulcers; pains in the middle of the bones, particularly when warm in bed, with exostosis; generally after some local complaint of the genitals.

3. *Aurigo*. A dark yellowness of the skin, with dyspepsia, generally terminating in dropsy; stools natural; urine not tinging linen yellow.

4. *Phœnigmus*. Redness of the skin, either diffused or in spots; without fever.

5. *Melasma*. A dark blue or purple colour of the skin, generally with dyspnœa and palpitation, from the blood not flowing freely through the lungs.

6. *Rubigo*. A general redness of the skin; often with coma.

Genus II. MACULA. A partial change of colour.

Sp. 1. *Ecchymosis*. A blue colour in particular parts, sometimes black, changing to a brown and yellow; from fluids effused in consequence of a bruise.

2. *Nævus*. Irregular marks on the skin, sometimes of a bright red, at other times yellow or brown, absurdly attributed to the mother's longing.

Order X. INTUMESCENTIÆ. Enlargement of the whole body, or of particular parts.

§ I. Total.

Sp. 1. *Polysarcia*. General enlargement, usually from accumulated fat.

§ II. Partial.

2. *Rachitis*. Bones of the joints enlarged, head swollen, particularly in front; with physconia.

3. *Exostosis*. See PERIOSTEA.

4. *Physconia*. Enlargement of the abdomen, without fluctuation.

Var. α *Hepatica*. A hard tumour in the right hypochondrium, verging towards, and sometimes appearing at, the pit of the stomach.

β *Splenica*. A little below the false ribs, on the left side, and towards the spine of that side.

γ *Renalis.* Oblong; in the loins on either side, near the spine.

δ *Uterina.* In the hypogastrium on either side; hard, with unequal edges.

ε *Visceralis.* Filling more generally the abdomen.

ζ *Mesenterica.* In irregular masses, yielding to pressure.

η *Externa.* Distinct tumours, not referable to any other species, of very different degrees of hardness and size.

§ III. Cuticular.

5. *Elephantiasis.* Skin thick and rough; hair falling off; face deformed by hard tuberosities; insensibility in the limbs; voice harsh and nasal; contagious.

6. *Frambœsia.* Small tubercles resembling mulberries, chronic; often contagious.

7. *Pellagra.* Inflation of the skin, with tubercles, in parts exposed to the air except the face; at first remitting; preceded by melancholy and debility; at last constant, with increased irritability and an alienation of mind.

8. *Lepra.* Skin covered with hard, branny, white crusts; hair thin, or falling off; voice harsh and weak; contagious.

Var. α *L. Icthyosis.* Crusts imbricated like the scales of a fish.

β *L. Furfuracea.* Crusts branny, deciduous, leaving an inflamed, often an ulcerated, surface.

9. *Verruca.* Hard cuticular swellings, circumscribed and distinct; red at the base; painful when bruised.

10. *Ganglion.* Soft round swellings on the tendons, elastic.

§ IV. Glandular.

11. *Sarcoma.* Soft swellings of the consistence of flesh, frequently in the sebaceous glands.

Var. α *Pterygium.* In the canthus of the eye.

β *Hordeolum.* At the edge of the eyelids.

12. *Scrophula.* Swellings of the conglobate glands, chiefly in the neck; with a florid complexion, fair smooth skin; upper lip usually enlarged; tumours seldom suppurating, or the wounds with difficulty healed.

13. *Encystis.* A moveable soft swelling without pain or inflammation.

The varieties are not easily distinguished; or synonymous.

14. *Bronchochele.* A swelling of the glands in the fore part of the neck without inflammation or scrophula, never suppurating, sometimes occasioning dyspnœa.

15. *Schirrus.* A tumour of any gland, hard, and unequal to the touch.

16. *Cancer.* An ulcer in any glandular organ, sometimes in other parts, frequently following schirrus; swelling large and livid, veins full and dark, pains acutely lancinating.

17. *Parotis.* A large, hard, irregular swelling below the ear; suppurating with difficulty, forming a malignant ulcer, without much pain, generally with hectic.

Genus II. PHLEGMATIA. Increased bulk from accumulated fluids, generally with a dry parched tongue, and a diminished secretion of urine.

Sp. 1. *Anasarca.* A pale inelastic swelling at first in the legs, afterward extending over the whole body, generally serous.

Var. α *Opilata.* From compression of the veins, in consequence of tumours either natural, as in gravidity, or morbid, which prevent the return of venous blood.

β *Exanthematica.* After erysipelas or scarlatina, occasionally after other eruptions if suppressed.

γ *Anæmia.* In constitutions exhausted after long fevers.

δ *Dolens.* Tumour of one leg painful, inelastic; after parturition.

2. *Hydrocephalus.* A soft inelastic swelling of the head, with the sutures of the skull preternaturally open.

3. *Hydrorachitis.* A soft inelastic tumour on the loins; vertebræ deficient; lower extremities paralytic.

4. *Hydrothorax.* A sense of fulness and tension in the chest; dyspnœa on lying down; sleep disturbed by ephialtic symptoms.

5. *Ascites.* A swelling of the belly, tense, imperfectly elastic; with a sense of fluctuation if the hand be placed on one side of the belly, and a slight stroke given to the other.

Var. α *Asthenica* in exhausted constitutions.

β *Metastatica.* From repelled gout or eruptions.

γ *Opilata.* From diseased viscera.

δ *Imperfecta.* Fluctuation partial, with irregular hardness in the other parts of the abdomen.

6. *Hydrometra.* A circumscribed tumour in the hypogastrium; urine in small quantities, without ischuria or pregnancy.

7. *Hydrocele.* Soft pellucid pyriform tumour of the scrotum gradually increasing without pain.

8. *Exomphalos.* A soft inelastic tumour at the navel, yielding to the touch with a sense of fluctuation.

Genus III. CYSTIS. Increased bulk, without the affection of any large portion of the body; generally from a fluid.

Sp. 1. *Aneurisma.* A soft tumour in the course of a large artery, with pulsations, synchronous with those of the heart; not steatomatous nor glandular.

2. *Varix.* A soft tumour on and connected with a vein; veins above indistinct.

3. *Mariscus.* Small, soft, and often livid tumours round the anus.

4. *Staphyloma.* A watery tumour on the eye.

5. *Hydatis.* A cuticular vesicle full of a clear fluid in the viscera, often the causes of ascites. Vide in verbo.

6. *Abscessus.* A circumscribed phlegmonous

tumour, at first hard, afterward with a feeling of fluctuation, generally with a peculiarly soft point at one particular part.

Genus IV. EMPHYSEMA. Increased bulk; tumour elastic; with a crackling sound when pressed.

Sp. 1. *Pneumatosis.* Emphysema of the whole body.
Var. α *Traumatica.* From a wound of the thorax.
β *Venenata.* From fish poison, or other narcotics.
2. *Tympanites.* Emphysema of the abdomen, sometimes with costiveness and atrophy.
α *Intestinalis.* From wind confined in the intestinal canal, relieved by discharges of flatus, or by stools.
β *Abdominalis.* From wind in the cavity of the abdomen, without costiveness.
3. *Physometra.* A smooth elastic tumour in the hypogastrium, with occasional discharge of flatus through the os tincæ.

Order XI. ECTOPIÆ. Parts removed from their proper place, with tumour in the region usually below, and disordered functions of the displaced organ; with superficial, sometimes with deep-seated inflammation; generally painful.

Genus I. HERNIA. Displaced viscera covered with the integuments.
For the species, see general classification.
II. PROLAPSUS. Organic displacements without integuments.
See general classification.
III. LUXATIO. Displacement of any joint from its socket, or articulation. See LUXATIO.

Order XII. PLAGÆ. A separation of parts naturally united.

Genus I. DIALYSIS. A disunion of soft parts.

Sp. 1. *Ulcus.* Dialysis, with purulent or ichorous discharge, and generally loss of substance.
2. *Vulnus.* Dialysis by mechanical force, generally bloody.
3. *Punctura.* A division of the skin extending inwards.
4. *Excoriatio.* A separation of the cuticle or skin not extending inwards.
5. *Ruptura.* A separation of tendon or ligament, without displacement of the joint.
6. *Sinus.* An ulcerated cavity, extensively sinuous, terminating in a narrow orifice.
7. *Fistula.* A sinus with callous sides often reaching an ulcerated or carious bone.

Genus II. CLASIS. A disunion of hard parts.

Sp. 1. *Fractura.* A violent and mechanical disunion of bone.
α *Complicata,* combined with "Vulnus."
2. *Fissura.* Bone not wholly divided, but partially split.
3. *Rhagas.* A hardened crustaceous wound.
4. *Arthrocace.* An ulcer in the marrow, or in the epiphyses, with caries, exostosis, pain and hectic.

Genus III. DIASTASIS. Separated cartilages.

Sp. 1. *Symphysis pubis.*

Having thus offered those definitions which in the generality of diseases are sufficiently descriptive for the purpose of discrimination, we shall add a few remarks in defence of our arrangement and nomenclature, limiting their extent chiefly to necessary explanations.

We have observed, that the natural groups of diseases, like the natural orders of the botanists, were too obvious not to be caught at by every nosologist. Fevers, inflammations, and hæmorrhages, are as evidently connected as the tetradynamiæ, siliquosæ, or umbellatæ; and it is only necessary either to escape from confines purposely narrowed, or from wanderings too extensive.

Fevers form certainly one of these natural groupes, and we have separated them from inflammation, since, in many diseases which decidedly merit the latter appellation, the fever is occasionally slight or inconsiderable; so that complaints sometimes attended with considerable fever, if we wear the strict fetters of Dr. Cullen, must be placed at an immeasurable distance. The definition of fever has been supposed a task of peculiar difficulty, but this has been enhanced by refinements, perhaps quibbles. The previous shivering is sometimes not observed, but, in such cases, it ushers in the paroxysms, which are at first distinct: the pulse is not always quickened, but this exception is peculiarly rare, and, if not quickened, they are extremely weak. In every case of fever, the powers of the mind are, in some degree, impaired, the tendons, at the wrist, tense. Head-ach, which occurs in many definitions, is here omitted, as unnecessary to the distinction, and as connecting fevers with inflammation. According to Dr. Clutterbuck's idea (see NERVOSA FEBRIS) it would be indispensible, but it certainly is owing to congestion in the brain, and, consistently with the ideas offered, is more connected with active inflammation than with pure fever.

The first genus is *intermittens*, and, from the view formerly given, it must be strictly a genus, since it is composed of individual diseases, which are varied only by accidental circumstances. A question has arisen, whether a febrile attack, terminated by one paroxysm, is truly a fever. We have not included an ephemera, as it is often an accidental circumstance, and admits of no practical directions, which will not apply to intermittents, consisting of repeated paroxysms. Were an ephemera to be admitted, the sudor anglicus, terminating either in returning health or in death, within twenty-four hours, should be a species; but the disease is no longer known, and the circumstances relating to it are not ascertained with such precision as to ensure our confidence.

It was necessary to introduce the terms "generally regular," since the quintana, sextana, &c. of authors are confessedly irregular, and these are included under the "erratica." The last species, *complicata,* includes the tertianæ and quartanæ duplices or duplicatæ of authors. Each occasions an apparent irregularity, and the succession of the double intermittents may give some am-

biguity to the character, as it precludes, in a few instances, the termination by sweating.

If a specific distinction can be established in any branch of natural history, it must be so in the separation of *remittents* from intermittents. The fever, in no period, wholly disappears, and one paroxysm only occurs in twenty-four hours. It is chiefly necessary to remark, that by *icterodes* is meant the yellow fever of America, and by *asthenica,* highly debilitating remittents, which De Hahn observed at Breslaw, and sir John Chardin experienced at Gombron. These are generally epidemics, and we have introduced the *hectica,* to discriminate that kind of exacerbating fever which arises from causes *within* the system. It is indeed generally symptomatic, but when the original disease is not obvious it is itself original. Indeed this fever merits particular attention, since it so frequently attends weak and irritable habits as to give to chlorosis often the appearance of phthisis, and it admits of accurate discrimination.

The genus *continua,* continued fevers of authors, is sufficiently established, and the species are those of Dr. Cullen. The existence of synocha, independent of topical affection, has been doubted, but the subject has been already considered. See INFLAMMATORIA FEBRIS. The varieties of typhus are sufficiently obvious, but we may add, that the neurodes is the NERVOSA FEBRIS, q. v. and the gastrica, the common bilious epidemic. The only doubt which will arise, is, whether this is not a species of synochus. Perhaps it ought to be so; and, in general, the greater number of typhi are truly synochi.

We reserved, when treating of fever, for this place, a very obvious subject of discussion, viz. how far the numerous varieties described by authors really merit particular distinction. To examine it fully, however, would require a reference to each, and an examination of the peculiar symptoms of the fever, which every author has described; an inquiry that might fill a volume. In general, however, it would be found, that these numerous fevers are chiefly distinguished by some leading symptom; that the epidemic is, in other respects, the same; nor can any be discovered, which is not either intermittent, exacerbating, or more continued, which has not one or two remissions in twenty-four hours. (See PITUITA.) Dr. Cullen, with almost every practitioner of discernment, rejects the *continent* fever of authors, viz. fever which continues without variation.

Phlegmasiæ constitute an order so strictly natural, that it could not escape the attention of any nosologist. Yet there are such obvious anomalies in the order, as established by each author, that if comprehensive, it must be in the same proportion less natural. If active inflammations are arranged in this order, many of the erythemata must be included: if inflammations of the mucous membrane form a subordinate group, we cannot separate leucorrhœa and gonorrhœa, because general fever is occasionally wanting. It was necessary to guard the definition with peculiar care, and the diseases of this kind are distinguished by fixed pain, læsion of the functions of the part affected, with increased discharge from its vessels. When this increased discharge is not immediately obvious, it is discovered from the consequences, as adhesions, &c. The diseases of this order are the true inflammations; the erysipelatous; inflammations of the mucous membranes, of the joints, of the muscles chiefly felt in the joints; and in the bones, often the periosteum. These are distributed in five genera; *inflammatio; phlogosis,* a term derived from the burning heat; *catarrhus,* a title taken in its more general sense; *arthritis,* rescued also from its more confined meaning; and *exostosis,* a word commonly employed. *Inflammatio* is chiefly distinguished by the character of the order, and the species are the usual genera. I shall add only some remarks, which may be less obvious.

The chances of war have obtruded on our notice an epidemic and contagious *ophthalmia,* the Egyptian; the sporadic is the common disease from cold; and the *o. tarsi,* the inflammation of the lids, usually a symptom of scrophula, though sometimes a truly epidemic disease. The *cynanche* has only two varieties in the strictest sense, yet, as a febrile disease, sometimes obstructing swallowing from local inflammation, the parotidæa (the mumps) could not be excluded; though from what we have observed we should be inclined to include it under exanthema. There are certainly doubts respecting the second, the trachæalis, for it generally accompanies the erythematous cynanche: it would however be rash to assert, that it never is seen from active inflammation of the upper part of the larynx. The difficulty of breathing generally arises from the tumour. The *croup* is more properly referred to catarrhus.

The species arranged as varieties of *pneumonia* are in almost every author raised to the rank of *genera;* but the cause is the same, the part affected contiguous, the symptoms very nearly alike, and they often pass into each other. We have seen the same fever successively attended with each. These varieties cannot indeed be always discriminated; nor, in a practical view, is distinction necessary.

The *mediastina* of authors cannot, we think, be separated from carditis; and the *pericarditis* is equally undistinguishable. The varieties of *enteritis* cannot probably be always distinguished, though we have endeavoured to discriminate, with care, the one which more particularly requires distinction, the *e. peritonitis,* as its practical treatment differs. We are by no means confident that the other varieties can be distinguished, except the rheumatica, in which the pain is felt at the origin and insertion of the muscles. We have often distinctly observed this pathognomonic symptom.

The character of *nephritis* is certainly confined to one species, the *n. calculosa,* from a stone either in the pelvis of the kidney, or escaping through the ureters into the bladder. It is difficult, if not impossible, to distinguish real inflammation of the kidney, as the organ is, in general, insensible; and, when inflamed, from its deep seat, the disease is generally confounded with enteritis: perhaps minute distinction is unnecessary. *Odontalgia* is generally considered as rheumatic, and it seems more properly to belong to articular inflammations. If disputed, however, there will be little inconvenience in removing it.

To include the erysipelatous inflammations, which we have connected under the genus *phlogosis* in this order, may appear improper, as the topical affection and the fever are so essentially different. Yet, in different climates, the same disease approaches to either genus. Phlogosis also is attended with topical redness, a læsion of the functions of the part, and a discharge from the neighbouring vessels. An additional advantage

arises from this arrangement, as it brings together diseases nearly resembling each other, which require distinction, as the inflammatory and putrid sore throat, the more active and putrid pneumoniæ. We see the distinction externally, in phlegmon and erythema, which are equally accounted inflammations; and authors have so generally acknowledged the connection, that they have divided inflammations into membranous and parenchematous. Dissection does not, however, countenance this arrangement; and, if we examine minutely their definitions of the latter, they often seem to point out the diseases we have united in the present genus, which is a perfectly natural association, nor do the species require a comment. The number might perhaps be increased, since every active inflammation may be occasionally erysipelatous.

It has been remarked, that we have extended the meaning of *catarrhus*; and for this we have the authority of Schneider and Hoffman; indeed the etymology of the complaint. It was necessary to distinguish what is usually called *catarrhus* therefore by a new term, and we have adopted one of its synonyms, *coryza*. The varieties require some particular remarks. Of these, the first is that in nosological arrangements the fever cannot always form a discriminating mark, since it even differs in the varieties of one species which cannot be excluded from it. Thus the *c. senilis* and *c. arthritica* are seldom attended with fever, while the common and contagious coryzæ are accompanied with violent febrile symptoms, though of opposite kinds. 2. Even in diseases most apparently similar, the practice must be often different and even opposite, for the contagious and common coryzæ require medicines very dissimilar, the senilis and arthritica still different ones. It does not however follow from hence that methodical arrangement is of no utility, since it is not one of the least of its advantages to prevent prescribing to a name, and to obviate a general, indiscriminating, practice. The addition of the *croup* to this species is a step which requires some apology. It is however certainly an inflammation of a mucous membrane, attended with a discharge from the vessels of the part: the organs affected are the same as in coryza; this complaint very generally precedes, and the disease differs only in the nature of the discharge, which is gluten. The peculiar symptoms arise wholly from its inspissation.

The definition of *dysentery* is laboured with peculiar care, to distinguish it from diarrhœa, cæliaca, and leucorrhois, with which it is very often confounded. *Phthisis*, if diseases are to be distinguished by symptoms, must belong to the genus catarrhus, for, though we know, from dissection, that it sometimes arises from suppurating vomicæ, yet the symptoms are through its whole course truly catarrhal, as limited in the definition of the genus; and there certainly are cases which prove occasionally fatal, in which purulent matter is never discharged. (See PHTHISIS.) The definitions of the other species scarcely require a remark.

Arthritis is rescued from its limited sense, and extended to a generic association from its etymology. It is a genus strictly natural, for each species is attended with fever occasionally exacerbating. The *arthrodynia* is too intimately connected with rheumatism to be separated, though it approaches very near to palsy; and indeed we have remarked, that, in the most violent pains of gout, there is a weight and numbness of the limb, which distinguish it from other inflammatory affections. The *hydrarthus* consists in that chronic inflammation of the muscles or joints which insidiously hastens on to suppuration, and destroys by its peculiar fever. If odontalgia be admitted in this genus, where few perhaps would look for it, as the union of the teeth with a jaw, though a pure articulation, would scarcely occur without some reflection, it should follow rheumatismus, or perhaps be included among its varieties.

Exostosis scarcely deserves the rank of a genus, yet it could not with great propriety be arranged under phlegmon, and its peculiar appearance as well as its cause required a particular distinction.

The greatest difficulty in constructing the third order, which is certainly a natural one, consisted in finding a title. ERUPTIONES is, in no respect, scientific or euphonous, but a better could not be discovered, except at the risk of occasioning confusion. The definition is sufficiently discriminating, and includes all the diseases, except the eighth species of exanthema. Pestis, included in this order from the authority of Dr. Cullen, should perhaps have been arranged under asthenic fever. In connecting diseases of the skin, nosologists have erred by contracting their limits too rigorously, or extending them too liberally. While Dr. Cullen confined himself to febrile exanthemata, and from specific infection, his inferior associations would be necessarily few, and those not strictly limited by the definition of his order. If every cutaneous disease, on the contrary, be included under the title, the list will be too miscellaneous to deserve the appellation of natural, and many appearances within the limits of health will find a place, as in the systems of Sauvages, Linnæus, and Vogel. In limiting this order, it was necessary at first to select the febrile exanthemata, without confining our views to specific infection, or, in reality, without contracting them within the common idea of eruptions. This was the real reason for our originally including pestis, which, on reflection, appears improper. Aphtha is more strictly related to cynanche, but we have seen a mild kind, more than once, epidemic, without any affection of the throat. This seems to justify its insertion.

The diseases which can be traced to specific infection consequently are first introduced, and others, usually epidemic, are added, though no peculiar virus is suspected. These are included in the first section. In the second are the sporadic eruptions, attended with fever, though less distinctly depending on it. The genus *exanthema* includes both. Of the *variola* two varieties are marked, the *confluent* from the difference of the appearance, and the *crystalline* for the same reason, and as there appears some probability that the second attacks of small-pox have been pustules of this kind. Were the fact well ascertained, it would justify the formation of a new species, and we thus perceive one of the numerous advantages of nosology in suggesting circumstances of inquiry. *Vaccina* will now be acknowledged a distinct species, since doubts have arisen whether it be really a security from small-pox. We have formed the definition with some hesitation, uncertain if it will in all cases clearly distinguish the vaccine pustule; yet its peculiarly rounded figure, and the brown depression (the Latin word *coccineus* would probably discriminate it more distinctly) appear to be sufficient for

this purpose. The *malignant* rubeola, in Dr. Willan's opinion, is a scarlatina; yet, as authors have pointed out a disease of this kind, and as, from the analogy of other fevers with topical affection, such may occur, we have inserted it. The other variety has not been very clearly distinguished, and the absence or the very slight appearance of catarrhal symptoms render us somewhat sceptical on the subject. It seems more probably the *essere* included under urticaria. It has been supposed owing to an union of small-pox and measles, but this is not true; for, when these diseases are present in the system, at the same time, they are never mixed. We have seen two epidemics of this kind, and have found, that, if small-pox was the first disease, measles would stop its progress; and on their recession the small-pox has resumed its course. If small-pox preceded, both would go on together, but the pustules of each would preserve their own character.

Milliaria we have mentioned at some length, and have considered it as sometimes an idiopathic disease. The definition is collected from authors who have seen it more frequently than ourselves. But we can add, from our own observation, that the sour smell is often owing to an overflow of milk. The *scarlatina* sometimes occurs without an affection of the throat; and, on the other hand, during the prevalence of *scarlatina*, the throat is sometimes diseased with very inconsiderable, general fever, and no eruption. It will scarcely be credited, that in such circumstances children have experienced very little inconvenience, though the throat has been full of ragged deep ulcers. The distinction of the variety of *cynanchica* is thus obvious, but the disease, without eruption, belongs to another species, the phlogosis anginosa. If the definition be compared with that of rubeola, no difficulty of distinction can be felt.

As erythema, externally, is opposed to phlegmon, so is erysipelas to variola. We have no doubt of its being an idiopathic disease, as we have twice seen it epidemic. The delirium, which sometimes follows the complaint, occasionally attends it, and there is no reason for thinking it owing to metastasis, as the inflammation of the head and face continue at the same time. There may be doubt, whether the chronic, intermitting erysipelas should not be rather referred to erythema; but some fever we think generally attends, and this is the most proper place for its insertion. The only other species, which requires a remark, is *urticaria*. The definition is left somewhat too open, to include numerous papular eruptions, which require notice. We need not, however, add to what we have said, under the article ESSERE, q. v.

The genus *efflorescentia* is designed to include those cuticular diseases in which fever is not a constant attendant, or with which it is not indispensably connected: these, however, so nearly resemble the exanthemata, as to render a distinction necessary. As we have thus extended the limits of eruptions in a general view, it will be reasonably asked why we do not include lepra, pellagra, and similar complaints in the same rank. The reason was that the species included in the genus efflorescentia were diseases of the extreme vessels, not depending on a general state of the fluids, while the lepra appears in the constitution, before the defœdation of the surface comes on. The voice is previously observed to be shrill and tremulous; the complaint can be traced to an hereditary disposition; the faculties of the mind decay with the impaired health. The same general disease appears more strongly in the pellagra, as described by Strambio, in his collections on this disease (Mediolani 1786-89, 3 vols. 4to). We have observed the same previous changes in elephantiasis; and the Cretins are equally distinguished by imbecile minds, and weak bodies.

To enumerate all the species of efflorescentia, however strictly limited, would be a difficult task. They appear in every form, and every variety; and we have left one species open, as already remarked, to include the anomalies. In general, they are chronic diseases, and connected with effusions on, or under, the skin. In prurigo, indeed, there is no evidence of this effusion; but the itching seems to show that it probably exists. The only ambiguity arises from syphilitic eruptions, which ought perhaps, strictly, to be included in this order, from the appearances; but, as connected with depraved fluids, is grouped with other associations. The eruption, however, is only symptomatic, and the difficulty may be removed by a comparison of the additional symptoms.

The definitions of the species will sufficiently distinguish them. The only circumstance of doubt respects the *lichen*, which perhaps is only the chronic, intermitting, erysipelas. The purple colour of the more violent species, and its general appearance, seem to indicate a disease in some measure distinct; but it is sufficient to suggest the question for further examination. *Petechiæ* are often symptomatic, yet they sometimes appear independent of fever and of any considerable debility. The *morbus petechialis sine febre* is noticed by the French and German authors, of which we have seen several instances.

The title of the fourth order, *profluvia*, is limited to its simple obvious sense, morbid discharges; and the association requires no comment. Profluvia differ either as the discharge is bloody, or excrementitious; a fever, though occasionally a leading symptom of hæmorrhages, is but slightly connected with this order, as they most commonly happen independent of it, or at least its degrees are so various, and its appearance so fleeting, as often to evade the possibility of distinguishing it in any given profluvium, and prevent us from availing ourselves, except in the marked instances of active hæmorrhage, of such distinction in practice.

The species require no comment; but the insertion of *vicaria* is scarcely regular in a systematic view, for all vicarious hæmorrhages must be symptomatic. Yet so numerous are these discharges, and so important are they in a practical view, that we trust the physician will commend, what the nosologist must disapprove. The definitions of *hæmoptysis* and *hæmatemesis* are peculiarly contrasted, as distinction is sometimes difficult. We mean not to defend what in each may appear doubtful, but only to observe, that such are the respective symptoms as they have occurred to us; such at least we have thought the distinguishing circumstances of hæmorrhage from either organ. It is difficult sometimes to distinguish the hæmorrhage from the bladder, from the blood discharged in consequence of the irritation of a calculus; but the quantity of the discharge, and the absence of the more striking symptoms of calculus, will prevent any error. The two varieties will be easily

distinguished. It will be obvious from the character of *melæna*, that we rather consider it as a bilious than a bloody discharge; but we need not add to what we have observed in that article, vide in verbo. In compliance with the language and opinions of practitioners, its insertion in this place was indispensable.

The title of the next genus is borrowed from Dr. Cullen, but used in a more limited sense. The definition requires neither apology nor defence, and the species are sufficiently connected. *Vomitus* may appear a simple object, but it involves some contradictions, at least some subjects of disquisition. It may be said, that the aliment, not the excrementitious fluids are discharged, and sometimes no fluid which is naturally carried to it. The first objection is, however, guarded against, in the definition of the genus; and it may be fairly observed, that no vomiting takes place without some evacuation of the mucus of the stomach. The *pyrosis*, however, consists in a discharge not naturally contained in that organ, viz. a cold fluid; but however difficult the explanation may be found, the variety is obviously connected with the species, and the latter with the genus. The atonic vomiting, the consequence of retrocedent gout, repelled eruptions, &c. is equally a subordinate affection inseparable from the rest.

Diarrhœa is usually divided into different species from its causes, but it seems, in practice, or in its symptoms, to require only two sub-divisions, viz. where the discharge is chylous, or where it is watery, in which the truly fæculent matter is retained. The mucous discharges from the intestines would appear to be properly inserted in this place, but these are more generally attended with fever, and mucus is scarcely a natural evacuation from the bowels.

Of the *diabetes* we have mentioned two varieties, for, in every instance, the chief form of the complaint is understood by the species; at least it should be, and the varieties are marked, when they are exceptions to the usual form, or when they require a variety in practice. The first of these is the *mellitus*, for, if the discharge is merely the increased watery secretion, it is understood from the definition of the species. The diabetes mellitus has lately claimed much attention, but the pathology and the cure are still imperfect. We have added another species, chiefly to notice a singular fact, that, when dropsical swellings are observable in almost all the cavities, if the urine is in considerable quantities, a large proportion of mucilage or gluten is found in it.

The species *diuresis* may require an apology, for it is often a symptom, but sometimes it appears rather as an idiopathic disease, arising from terror, surprise, or any peculiar sound, in some constitutions; as when "a bagpipe sings in the nose." Its distinction is obvious from the definition. The species *ephidrosis* may appear superfluous, for it is often a symptom of fever or debility; but its partial occurrence, particularly in the feet, is sometimes the object of the practitioner's attention.

For *plica* we could find no more suitable place, though it is less proper in this order, as connected with fever. Did we know the nature of the fever better, we might place it with more accurate discrimination, but at present we must look on it as an increased excrementitious discharge; and does not Shakspeare call Autolicus' beard, "the pedlar's excrement?" If this be not authority, we have no better. The Ptyalismus mellitus is introduced on the authority of one striking case, though we have observed, in several, an approach towards it.

Obstructions are generally connected in every nosological system, except where the local are separated from universal diseases; but in the species enumerated are many of these local diseases, which are the objects of general practice. *Dysphagia* may arise from tumour, accretion, inverted motion, flatus, spasm, or debility. The two first are the only objects of the genus, which is limited to organic affections. The third is a symptom of vomiting, the fourth and fifth of hysteria, and the last of palsy. The existence of tumour, or accretion, cannot be ascertained in many instances, even by the probang, for spasm, as we have seen, will give the sensation of resistance, like a tumour, both in the œsophagus and urethra; but a repetition of the trial will show the nature of the cause, for spasm is seldom constant.

Obstipatio is generally passed over in nosological systems, as a local disease, but it is an object of considerable importance. A schirrous pylorus, tumours of the omentum, or of some of the chylopoetic viscera, intusceptio, and a schirosity contracting the rectum, are diseases which require distinction, and which can be discovered only by the symptoms. These we have endeavoured to distinguish in the different definitions, so far as the variety of symptoms would permit. *Polypus* requires no particular remark, except the fact of its sometimes preventing the return of blood from the head. A case of this kind occurred some years since, while transcribing the definition, and the fact was confirmed by dissection.

It was necessary to form a separate genus for *asthma*, and *dyspnœa*, since they certainly belong to this order, and are not always organic, nor constantly depending on suppression of excrementitious discharges. The term *anhelatio* is familiar to nosologists, and neither the species nor the definitions require a comment.

The genus *epischesis* can require neither comment nor defence. The definition of *dyshæmorrhois* is guarded in a manner, which would not be accepted in the school of Stahl, since it implies that the discharge is not required, except when established from habit. See HÆMORRHOIS.

Obstructions of the secreted fluids are regularly associated, though, as there is a group of diseases depending on discoloration of the skin, perhaps *icterus* might have been more properly referred to it. The white stools are, however, a symptom equally obvious, and it is a disease much more general than the greater number which occur in that association. By the definition of the calculous icterus we do not mean to say that every instance of calculus is attended with pain, or that every painful jaundice is owing to calculus. Such, however, are the more common cases; and the spasmodic icterus is generally pointed out by authors. We find no subject of remark, or explanation, in the other genera, except to add, that *sitis* we have seen in two instances as idiopathic disease; at least, we have not been able to trace it to any morbid state of the body, except the vague idea of acrimony, apparently shown by slight eruptions on the skin. It was proper, however, with these cases in our view, to mark it especially, as we had the sanction of former nosologists.

The order *spasmi* is an association so constant, that it requires little observation; nor are the species so uncommon, the definitions so peculiar, as to demand any commentary. It will be obvious that we have kept in view the distinction formerly made of convulsions being irregular rather than increased action, and the species chorea, raphania, and beriberia, are evidently proofs that this irregular action is closely connected with extreme debility, as each verges on, and is sometimes terminated by, palsy. *Pandiculatio* is equally connected with imperfect or irregular excitement. In the varieties, where it was necessary, we have equally kept in view the principle of convulsion arising from sensible irritation, or, in weak mobile habits, from irritation, often unperceived. The history of hysteria fully illustrates this principle, which pervades, without the author being conscious of it, the whole of Dr. Whytt's works on nervous diseases.

The *adynamiæ* form equally a natural association. We have scarcely stepped from the common systems, except in the varieties of apoplexy. The distinctions of the second and fourth may appear to be made without a difference. We meant, however, to distinguish the last moments of a constitution gradually sinking from that progressive stupor, which arises from effusion: each case we have distinctly observed. The *a. hydrocephalica* we have introduced in compliance with the authority of Dr. Quin, of Dublin; and we think that we have been able to distinguish this species, though we know not that any words will discriminate it, from hydrocephalus. It chiefly occurs in females of a fair complexion, blue eyes, and light hair. Perhaps, however, this is the strictly proper place for internal hydrocephalus, since there is no increased bulk.

The *paranoiæ*, a term derived from preceding nosologists, comprehends all the irregular or excessive appetites, and all the irregular exertions of the nervous powers. We begin with the diseases of the stomach, followed by those of the sexual organs, in which the mind is particularly affected, and ascend to those in which the mind chiefly suffers. Hypochondriasis is the connecting link; but the arrangement would have been more perfect, if the sexual passions had preceded, as the hypochondriasis and melancholia are so nearly connected. The introduction of *erotomania* may excite a smile; but it is often truly a disease, and, as an unsuspected one, is frequently troublesome. The species and their definitions require no farther remark than the pages of this work will afford. Under the *mania venenata*, Van Helmont is quoted, who relates with singular eloquence his own feelings in these circumstances.

The *cachexiæ* also require no remark, except that the *rubigo* is inserted from the authority of Coutanceau, in the Memoirs of the Medical Society of Emulation, who calls it cutaneous apoplexy.

The *intumescentiæ* scarcely form a natural order, and even the genera are not always natural associations; but it was impossible to avoid these anomalies. We have endeavoured to remedy the inconvenience, by passing from the more to the less solid, from thence, in succession, to the watery and aerial tumours; and on a comparison of the species of the first genus, it will be obvious that these could not be associated with the eruptions. We have again introduced *exostosis;* and it may remain if the inflammation is not thought a sufficient reason for its retaining the former position.

The genus *physconia* is, like some others, left open for anomalous tumours, of which the more important are distinguished, and may be ascertained by the organ affected. The *p. hepatica* and *uterina* (including in a more enlarged sense the whole uterine system, and particularly the parts most commonly affected, the ovaria) are the most common. The *externa* can be confined by no definition. We have thus included schirroidea, the sarcomatica, the graviditates falsæ, the megala and polysplachnina, the steatomatosa and strumosa of authors; but have not noticed the hydatidosa, because we could find no symptoms by which they may be distinguished, as we have confessed under the species *hydatis*, which authority, rather than conviction, induced us to insert. The dropsies, *phlegmatiæ*, require no comment; and if some of these are partial tumours, the general relation will excuse the anomaly.

The *herniæ* we have not again enumerated. Lest the list might be unnecessarily prolonged, we have also omitted the varieties, arising from the situation of a prolapsed intestine, which may be seen in the present work, and the impaired functions will at all times furnish the symptoms. See HERNIA; LUXATIO; and the different terms inserted in the general classification under *prolapsus*.

The species of *diastasis* have not been noticed by authors, though several may be observed; and the only one which has particularly challenged the attention of practitioners is that mentioned supposed to occur in labour, and facilitate delivery. Having concluded a new arrangement of diseases, we must leave it to the candour of the public. Had we not thought it meriting their attention, we should not have offered it in this place. While its reception is uncertain, it would have been improper to disturb the general system by even these few novelties of appellations or arrangement. If received with approbation, it may at a future period be incorporated with the whole, when its utility and application will be more striking, and when its foundations may be more fully developed. At present it has been with great care abridged, that those who disapprove, may not complain that much time and space have been mis-spent or misapplied. See Sauvagesii Nosologia, 2 vols. 4to.; Culleni Nosologia; Macbride's System of Medicine; Pinel Nosographie Methodique, 2 vols. 8vo; Selle Pyretologia Methodica; De Haen Theses, Sistentes Febrium Divisiones.

NO'SOS, (from the Hebrew term *nosis, infirm*). See MORBUS.

NOSTA'LGIA, (from *nostras, our own country*, and *αλγεια, mœror*). NATIONAL INSANITY, in which strangers have such an unconquerable desire to return to their own country, that they become restless, with loss of appetite and strength, succeeded by dejection of spirits, insanity, or death. Dr. Cullen distinguishes two species, *nostalgia simplex*, and *complicata*. It is, in fact, a species of insanity from hope delayed, to which the Swiss, from a strong attachment to their native country, are generally subject; and the familiar tune, called *Ranz de vaches*, played at milking the cows, is forbidden in foreign armies, as it excites the tender recollection of what they have left.

NO'STOCH. See CŒLI FLOS.

NOTHÆ CO'STÆ, (from *νοθος, spurious*). See Costæ.

NOTHUS, (from the same). A variety often of a disease, not attended with the acute symptoms of the more active kind. Thus peripneumonia notha is a catarrh without violent inflammatory symptoms.

NOTI'ÆUS, (from *νωτος, the back*). See Medulla spinalis.

NUBE'CULA and NU'BES. See Urina, Encauma, and Albugo.

Nube'cula suspe'nsa. See Enæorema.

NUCAME'NTA, (quasi *nucis amentum*). See Amentacei flores.

NU'CES OLEO'SÆ. See Farinacea.

Nu'ces purga'ntes. See Cataputia minor.

NU'CHA, (from the Arabic terms *nucha, the spinal marrow*, or *nekra, the cavity between the shoulders*). The back of the neck.

NU'CIPRUNI'FERA, and NUCI'FERA. See Nux Virginiana.

NUCIO'SITAS. See Myopia.

NUSIPE'RSICA, (quasi *nux Persica*). The nectarine.

NUCI'STA. See Nux moschata.

NU'CLEUS, (*è nuce*). A kernel, that part of the fruit which is inclosed in a hard shell.

NU'CULA TERRE'STRIS, (a dim. of *nux*). See Bulbocastanum.

NU'CULÆ SAPONA'RIÆ, *baccæ Bermudenses*, the fruit of the *sapindus saponaria* Lin. Sp. Pl. 526. These fruits resemble in size a cherry, and are transparent, showing the nut within. The part employed in medicine is the cortical, and it has been used in chlorosis, but is now neglected. It is a bitter of the narcotic kind.

NUMMU'LARIA, (from *nummus, money*, because its round leaves are of the size of a silver penny). *Lysimachia nummularia* Lin. Sp. Pl. 211; from its supposed utility, *centi-morbia*; in English herb two-pence, and money-wort, is a low creeping plant, with square stalks, and smooth, little, roundish, or heart-shaped leaves, set in pairs at the joints, upon short pedicles; in their bosoms appear yellow solitary monopetalous flowers, each divided into five oval segments, and followed by small round capsules, full of minute seeds; perennial, grows wild in moist pasture grounds, and flowers from May to the end of summer. It is said to be astringent, antiscorbutic, and vulnerary; resembling a mixture of cochlearia with acetosa. See Raii Historia; Lewis's Materia Medica.

NUSCITIO'SUS. See Nyctyalops.

NUTRICA'TIO, (from *nutrico, to nourish*). *Accretio, altura*. Nutrition, accretion, or growth. The progressive increase of the body and the successive development of different organs we have explained in a variety of articles, and have traced the aliment from the stomach through its various stages to the blood vessels. The question then returns. How is the nourishment applied to the increase of the body, to the development of these different organs? Two opinions have prevailed, one that it is applied by the extremities of the arteries; the other that it is a fluid secreted from the vessels of the brain, and conveyed by the nerves. Dr. Cullen was so much struck with the glandular appearance of the brain, that he seemed to want an object for the application of its secreted fluid; and the fact, that when the nerve leading to any part was divided, the latter was emaciated, seemed to assist the conjecture. It was no more, for he never rested on it, nor did it form any part of his system. We shall now, therefore, bring together, in a few words, the doctrines often inculcated, to give a view of the whole subject, without concealing its weaker parts.

The germ, we have said, contains in miniature the whole body, convoluted and contracted within a bulk so small, that we thought some illustration of comparative magnitude and littleness necessary to render the idea less shocking. The organs are gradually expanded by the successive filling of the arteries, and the extent to which the parts will admit of expansion is the "internal mould," which forms the shape, and limits the bulk. The food taken in differs from the fluids in the proportion of many of its ingredients; but the great change is in the very great diminution of carbone, and increase, often the formation, of azot. The process of digestion consists partly of separation, in part of solution, but most essentially in the assimilation of the aliment to the nature of the animal fluids. The latter is apparently effected by the remains of the former meal, acting as a kind of leaven; for the gastric fluid appears to be nearly a common mucus, and to possess no qualities but what it derives from the relics of former aliment. We cannot explain the gradual change of carbone to azot; the only part of the problem unexplained till chemistry lends us farther aid, which we are on the point perhaps of receiving; when we shall probably also see the connection between the muriatic and the phosphoric acids, since the latter also is apparently of animal formation.

The azot is not, however, exclusively the creature of the animal process. It has been found that some portion of this principle is occasionally absorbed from the atmosphere, and, even in the most strictly vegetable diet, some portion of azot is contained. This will not, however, account for the whole change, and there is some probability that the hydrogen, by some play of affinity, is changed to azot; but, as we have just remarked, chemistry has not yet afforded us sufficient light to enable us to perceive the source of the change.

The animal fluids then, distending the vessels, expand the convoluted fibres, and deposit in their interstices, dilated perhaps into a cellular substance, the peculiar matter of which they consist. Every appearance of the animal economy seems to show that the state of the exhalent arteries forms or changes the nature of the fluid which they pour out, and the whole mystery of secretion consists probably in the various states of these vessels. Physiologists have supposed that fibres are not enlarged, but only elongated. They seem to be neither; but we believe that what we style fibres are only the larger fasciculi; and this we gather from finding in the extremities of nerves which are evidently fibrous, a structure which eludes even the assisted sight. When we speak then of the interstices of fibres, and the cellular substance, we do not mean that grosser kind which we see and handle, but that interposed between fibres, which escapes our glasses: animal matters of different natures are thus deposited in different organs, favouring or assisting their separate functions; and this matter is progressively absorbed, and again deposited. It is absorbed, say physiologists, when it becomes

effœte, a term without a meaning: in fact, the change from carbone to azot is continually going on, and the oxygen gradually disappearing. When the proportion of the azot is too great, threatening dissolution to the system by the putrefaction which it favours, it is absorbed, and again supplied by the arteries. The nourishment is deposited in a fluid form, and this fluid seems to have a greater affinity to the azotic animal matter than to the recent substance. The former then becomes fluid, and is taken up by the lymphatics; for we know that nothing is adapted to their orifices but a fluid, or what approaches in consistence to it. This is not fanciful or hypothetical. Putrid matter of every kind shows its attraction for watery fluids, and assumes this soft consistence. When madder is mixed with the food of animals, it gives a red colour to the bones, for an obvious reason, it has been said, because its affinity to the calcareous phosphat occasions it to be deposited with this salt. It occasioned, indeed, some surprise that so hard a substance as bone should be so soon deposited and absorbed, till the difficulty was explained by a French chemist, who confirmed the former affinity; but found that the colouring part of madder had a greater attraction to the serum of the blood than even to the earthy neutral. This observation confirms also, in a striking manner, the successive deposition and absorption of the fresh and azotic animal matter; while it explains what has been thought a difficult problem, how the matter to be absorbed attains fluidity.

The parts of the body are thus successively renewed, and it has been conjectured that in seven years the whole was changed. This suspicion, for it is no more, must, of course, vary in infancy, more in advanced life, and in old age; but, if our conjectures respecting the primordial germ are right, the added matter is only changed; the original fibrous structure remains the same, and with it the metaphysician will say *personal identity*. It will be obvious, that to supply nourishment the power of the exhalents must be unimpaired; and this will sufficiently explain the reason why, on destroying a nerve, or impeding its influence by a ligature, the limb which it supplies is emaciated. In general, nutrition appears wholly conveyed by the arteries.

Every nutritious substance must be capable of some change in the stomach, must be susceptible, not of fermentation in the strict chemical sense of the term, but of assimilation from the influence of the remaining leaven. When reduced to its principles, and these are again combined, they form a simple fluid called chyle, which is conveyed to the arterial system, and, by its access to the air in successive circulations, forms blood. From hence the nutritious matter is secreted. Its nature is uncertain; and various have been the opinions on this subject. Lorry thinks it a mucous substance; Cullen a saccharine one; Halle an hydrocarbonated oxide, differing from the oxalic acid by having a smaller proportion of oxygen. He explains, with some propriety and force, the disappearance of the carbone and oxygen by their forming carbonic acid gas, which is carried off in respiration. In the same process the azot is, he thinks, separated from the venous blood, to combine with the newly assimilated chylous matter. The remaining carbone, mixing with the oxygen of the air, at the surface, is still farther separated, leaving the blood, *sit venia verbo*, azotised. This explanation is however more ingenious than true. The azot is an excrementitious fluid: instead of wanting it to animalise the chyle, the latter is necessary to correct the azot. The nutritious fluid, whatever it may be, is apparently simple; and we could, were this a place to build systems, give some striking reasons for supposing it pure albumen.

See Homo, Hæmorrhoids, Menses, Fœtus; Fordyce's Elements, Part I.; Halleri Elementa Physiologiæ; Whytt's Physiological Essays; Monro's Observations on the Nervous System; Richerand's Elements of Physiology.

NUTRI'TUM UNGUE'NTUM was formerly made by mixing certain proportions of vinegar, oil, and litharge; but the London College substituted, as a neater application, the *unguentum cerussæ acetatæ*, made in the following manner: Take of acetated ceruse two drams, and white wax two ounces by weight; olive oil half a pint: rub the acetated ceruse, previously powdered, with some part of the olive oil; then add it to the wax, melted with the remaining oil. Stir the mixture till cold. Ph. Lond. 1788.

The unguentum nutritum was formerly made by mixing three ounces of litharge with seven of olive oil and four of strong vinegar, and the term "sine corpore" was added, because the vinegar was united to the oil without the medium of mucilage or albumen. The process was, however, tedious, since the trituration was incessantly continued many days. Baumé shortened it, by using olive oil coagulated by cold, which kept the litharge suspended, while the vinegar dissolved it, or hastening the union by means of heat.

M. Dubuc, an apothecary at Rouen, has attempted to improve this formula by means of the new lights of chemistry, and we shall add a short abstract of his remarks. When we wish to *nourish* the vinegar, with the litharge, and the oil, for that was the origin of Lemery's fanciful term *nutritum*, since they were rubbed together till they formed a *body*, which neither ingredient had separately, we must dissolve a little of the litharge in the acetous acid, and introduce a sufficient quantity of carbonic acid to change the greatest part of the litharge into a white carbonate, which remains mixed with the oil, and to thicken the oily mixture; an effect analogous to thickening soap by the same acid. If so much vinegar is employed as to form a saline, *saturated*, compound, the consistence will not be proper. If too great heat is employed, according to Baumé's plan, a portion of the carbonic acid is separated, and a yellow oxide of lead remains uncombined.

It has been proposed to accelerate the preparation by adding hogs-lard; but this addition diminishes the bulk and lightness. In Germany one-half part of oil of roses is added to the vinegar of lead, which produces an ointment as white as wax, and of the consistence of a liniment; sometimes one-half as much oil of olives, which produces a whitish ointment of a moderate consistence; sometimes with one part of oil of olives, as much vinegar of litharge, and half as much wax, which produces an ointment of a waxy whiteness and a firm consistence; but these are all mixtures, and by no means such intimate combinations as the true nutritum. We have engaged in this detail, not only from its curiosity, but to suggest a suspicion that we have probably sacrificed, in this preparation, too much to the ease of

the pharmaceutist. The utility of the old nutritum arose in a great measure from its levity, in consequence of a proportion of air, probably of carbonic acid gas, mixed with it; above all, from its being so imperfect a conductor of caloric.

In the Pharmacopeia Chirurgica the litharge plaster is employed, lowered in consistence by olive oil, adding vinegar to dissolve the litharge. This appears to be following the first plan of Baumè, as the plaster supplies the place of the congealed oil: but this application wants the lightness and the cooling quality of the real nutritum; and the unguentum cerussæ acetatæ, unless extemporaneously prepared, soon becomes rancid. See UNGUENTUM LITHARGYRI ACETATI, under LITHARGYRUS.

NUX, (from the Hebrew term *luz*). A NUT, a term belonging to many vegetable productions, viz.

NUX BARBADENSIS. See RICINUS, and CATAPUTIA MAJOR.

NUX BEN. Vide BEN.

NUX BENGALENSIS. Vide MYROBALLANI CITRINI.

NUX CATHARTICA AMERICANA. See RICINUS.

NUX DE BECUIBA. A resinous Indian fruit from an unknown tree, whose oil is said to be a specific against cancers and colics.

NUX INDICA. See CACAO.

NUX METHEL. The fruit of the STRAMONIUM METHEL.

NUX NARCOTICA. An Indian fruit which occasions vertigo and delirium. It is used in anodyne plasters; but the plant has not been described.

NUX SERPENTINA. The fruit of the AHOVAI, q. v.

NUX MOSCHA'TA, *myristica nux, nucista, pala, chrysobalanus Galeni, unguentaria, assala, nux aromatica*, the NUTMEG, *myristica officinalis* Lin Supplement, Pl. *m. moschata* of the Fragments, and the later editions of Schreber. In reality, however, the jealousy of the Dutch concealed the real plant, nor was it ever accurately described till the description of La Marck appeared in the Memoirs of the Academy of Sciences for 1788. He found it to be a dioicous plant, of the natural family of the Laurineæ, containing exotic trees or shrubs, evergreen, whose leaves are entire and alternate, and whose little axillary flowers are united in numbers on peduncles, divided, and longer than the leaves. He styles it the *myristica aromatica*. The fruit is a rounded or oval drupa, containing a large solid, oily, often aromatic, seed, through the internal parts of which veins branch, of different colours, but chiefly brown. The seed is defended by different coats. The first is fleshy, though sometimes dry and coriaceous; the second is the *mace*, a coloured membrane, deeply divided; the third the shell, which is thin, hard, and brittle, externally impressed with the ramifications of the mace.

The nutmeg is said to have been known to the ancients, and to have been the *comacum* of Theophrastus; but this author speaks vaguely only of the comacum as a spice brought from India; while the nutmeg is not from India: it is a production of the Molucca Islands and the Isle of Banda, and it is highly probable, as C. Bauhine and L'Ecluse have thought, that it was not known to the ancients. The Arabians first introduced it under the name of *jiansiban* (Avicenna II, c. 503), the nut of Banda. It is the *jenzbave*, or *jusbague* of Serapion, the *moschocarion* of the modern Greeks.

More modern naturalists were equally divided respecting the real plant which produced the nutmeg. Piso thought it resembled a pear or a cherry tree; others mistook the mace for the flower; Valentini and Rumphius saw only the female flowers, and their description was, of course, erroneous. They indeed gave the name of male and female to different species; but in the spirit of a grammarian, who tells us, "that the musculine is more worthy than the feminine." So the long nutmeg was the male and the inferior round one the female: the different plants were distinguished on the same principle. Linnæus in his later works, Adanson and Sonnerat approached nearer the real plant in their descriptions; but the account of each was imperfect. Thunberg, in the Stockholm Transactions of 1782, gave a more faithful description of the plant, but it was still erroneous; nor, until the nutmeg tree was conveyed to the Isle of France, and branches, with perfect fructifications, sent to La Marck, did we properly know its form or habit. The general account already given is sufficient for our present purpose.

The myristica aromatica is continually in bloom, while the plant bears, at the same time, fruit of all ages, and its leaves fall in so small a proportion, that their loss is almost insensible. It is impossible to distinguish the male from the female tree by its leaves or habit. Some nutmeg trees produce both oblong and round seeds; others only round ones. The embryo of the future plant is at the large end of the nutmeg, where it is contiguous to the peduncle. In the plants sown, the males have been found more numerous than the females; a considerable inconvenience, as the sex could only be distinguished by the flowers. It was corrected by one planter, who preserved, in each tree, two branches, on one of which he grafted a female twig. The trunk, branches, and even the leaves of the nutmeg-tree, when wounded, pour out in sufficient abundance a viscid juice of a pale red colour, which gives a durable mark to linen: the wood is light and porous, without any smell. The leaves slightly smell of the nutmeg, when fresh only. The fruit is ripe nine months after the flower has withered, and its pulp is sharply astringent. It is preserved, and a kind of marmalade made of it. The virola of Aublet and Jussieu, the tallow-tree, appears to be a species of myristica. The other species of myristica are distinguished from their country, viz. the Phillippine Islands, the coast of Malabar, and the Island of Madagascar, or from the shape of their leaves or their fruit. We learn nothing from La Marck of the comparative merit of their several seeds. The tree, we know, is propagated by birds, who break the shell; but in whose intestines the nutmeg is not digested. The hint has been taken apparently from this fact, and the nutmeg is planted without its shell. In this way it vegetates sooner, and the worms have no time to eat it.

Nutmegs preserved entire are introduced in India with tea, but the mace and pulp are only eaten: the nut is thrown away. In cold climates, and voyages in the higher latitudes, the nut is chewed every morning.

The nutmeg is moderately warm, grateful to the taste, and unctuous. It is cordial, carminative, and astrin-

gent, in doses of from three to fifteen grains; but to increase its astringency it is roasted, and used in diarrhœas and dysenteries. In large quantities it is said to affect the head, and to be dangerous. Bontius says, this is a frequent occurrence in India; and Dr. Cullen saw a remarkable instance of its anodyne power in a person, who took two drams of nutmeg in powder. See Cullen's Materia Medica, vol. ii. p. 204. An ordinary kind of nutmeg is called *areca, avellana Indica,* &c. From 1920 parts of nutmeg Neumann procured 480 of spirituous, and 280 of watery extract, with 320 of oil or tallow. The two last were insipid.

By an inverse operation he procured 600 parts of watery extract, fifty of sebaceous matter, and ten of volatile oil, afterwards 120 of an unctuous, spirituous extract, and 300 more of fixed oil. The same quantity by expression gave 540 parts of oil, and afterwards 480 of watery extract; a strong distilled water, eighty grains of spirituous extract, and sixty of insipid oil.

The London College directs a gallon of proof spirit to be drawn by distillation from two ounces of nutmegs, called *spiritus nucis moschatæ;* but when a few hawthorn flowers are added, it is called *aqua nephritica.* A tincture made from the nutmeg, in proof spirit, is a valuable medicine.

By a distillation with water nutmegs yield nearly one-tenth of their weight of a limpid essential oil, *oleum nucis moschatæ essentiale,* very grateful, possessing the flavour of the spice in perfection; it is recommended as antispasmodic and anodyne, similar to the oil of mace, but is not so grateful.

On the surface of the remaining liquor an unctuous concrete, like tallow, swims, of a white colour, nearly insipid, not corruptible, commended as a basis for odoriferous balsams. The decoction, strained and inspissated, leaves a weakly bitter sub-astringent extract. We have already remarked that the tallow-tree is a species of myristica.

Rectified spirit takes up the whole smell and taste of the nutmegs, and receives from them a deep bright yellow colour. The spirit drawn off from the filtered tincture is very slightly impregnated with their flavour; the greatest part of the specific smell, as well as the aromatic warmth, bitterness, and subastringency of the spice, remaining concentrated in the extract. Both the oil, the spirituous tincture, and extracts, agree better with weak stomachs than the nutmeg itself.

When nutmegs are heated, and strongly pressed, they give out a fluid yellow oil, which concretes on growing cold, into a sebaceous consistence. We are informed, that in the spice islands the imperfect and damaged nuts are separated for this purpose. In the shops we find three sorts, under the name of *oil of mace.* The best, brought from the East Indies in stone jars, is softish, of a yellowish colour, an agreeable fragrance, greatly resembling that of the nutmeg itself, but of the colour of mace. The next, from Holland, in solid masses, generally flat, and of a square figure, is paler coloured, weaker in its smell, and inferior in its quality to that of India. The last seems to be a composition of suet or palm-oil, flavoured with a little of the genuine oil of nutmeg. The chief use of these is for liniments, to be applied to the stomach, or as an ingredient in anodyne and nervous ointments. See Tournefort, Lewis, and Cullen's Materia Medica; Neumann's Chemistry.

NU'X vel GLANS UNGUENTU'ARIA. See MYROBALANI.

NUX METE'LLA. See NUX VOMICA.

NUX VIRGINIA'NA; *prunus prunifera, nucifera, nuciprunifera mastichen odoratum fundens,* a variety apparently of the *sapindus saponaria* Lin. Sp. Pl. 526, MASTICH OF LIGON, and VIRGINIA NUT. Its leaves shine like those of the bay-tree, and it differs from other pruniferous trees in its fruit, which is small, turbinated, containing but a little pulp.

The fruit is of the shape and size of a filbert, smooth, of a brown colour, with an eye near one end, containing a hard stone; and the kernel is white and globular, of a bitterish taste, and an aromatic smell. It is said to be antiscorbutic, deobstruent, and cordial. See Raii Dendrologia.

NUX VO'MICA, *nux metella, caniram; faba febrifuga, igasur,* is a flat roundish seed or kernel, about an inch broad, and a quarter of an inch thick, with a prominence in the middle, on both sides of a grey colour, covered with wool, internally hard and tough like horn, the produce of a large tree in the East Indies; *Strychnos nux vomica* Lin. Sp. Pl. 271.

It is bitter to the taste, and this quality chiefly resides in its resin; for the gum is but slightly so. Fallopius observes, that in doses to ℥ss. it procures sweat; but Hoffmann informs us, that two doses of seven or eight grains each were fatal to a girl of ten years old. These nuts poison dogs, crows, &c. When imprudently swallowed by men, they produce great anxiety, convulsions, paralytic symptoms, retching, an increased action of the heart and of the lungs. The bitter is evidently in a high decree narcotic; but in Germany it has been given as an antidote against the plague, in mania, and hysteria; in hydrophobia, hypochondriasis, rheumatism, and gout. They have been employed with various, but not considerable, success in dysentery (London Medical Journal, vol. iii. p. 189), as an anthelmentic in cases of tænia; and lately by Loueiro, after roasting, in fluor albus. This operation seems to mitigate their virulence. In this country, however, they have been seldom given. See Raii Historia; Lewis's Materia Medica; Neumann's Chemical Works.

NUX VO'MICA SERAPIO'NIS; *faba sancti Ignatii, pepita nux, faba Indica, catalongay;* ST. IGNATIUS'S BEAN, the produce of a tree called *mananaog,* or *cantara,* found in the East Indies and the Philippine islands. It was supposed to be the production of a species of strychnos, with the trivial name of *volubilis;* but the younger Linnæus, and succeeding naturalists, have referred it to a distinct genus, *ignatia amara.* Each appellation Wildenow has preserved, vol. i. 1053. The fruit resembles a gourd, in each of which are from twenty to thirty seeds, improperly called beans. They are of a roundish figure, irregular and uneven, of the size of a middling nutmeg, semi-transparent, of a horny texture, and of a white colour, slightly tinged with blue. These seeds have a bitter taste, but only a musty scent while fresh. The inhabitants of the Philippine islands use them as a medicine; but their effects are violent, and they are never employed in any other country. They are chiefly used in the Philippines, in intermit-

tents, amenorrhœa, asthma, epilepsy, and as anthelmentics. See Philosophical Transactions, N° 249, p. 44; Medical Museum, vol. iii.

The other vegetable productions to which the term *nux* is applied are,

NUX BASILICA, EUBOICA, PERSICA, et REGIA. See JUGLANS.

NUX MALABARICA. See CUMBULU.

NUX VOMICA MINOR MOLUCCANA, ALTERA. See COLUBRINUM.

NYCTALO'PIA. See AMBLYOPIA.

NY'CTALOPS, (from νυξ, *night*, and ωψ, *an eye*). NIGHT BLINDNESS. *Imbecillitas oculorum.* Sometimes such patients are called *luscitiosi*, but improperly; for this term is applied to those who, from some defect of the eye, see better in the evening than at noon. In the Greek and Latin writers the word *nyctalops* has opposite meanings; sometimes signifying those who see by night; at others, those who cannot see during the night. It is now understood to signify that disorder, in which, as the night approaches, the patient loses his sight, and remains blind until the morning. The sight thus continues to return in the day, and to depart at night.

The word *hemeralopia*, in Vogel's system, stands for blindness in the night, and sight in the day; and *nyctalopia*, in Linnæus's and Vogel's Genera, stands for blindness in the day, and sight in the night.

It appears to be an intermittent, arising in one instance from too great sensibility of the retina, and in the other from torpor. In the former the light of the day is too great for the organ to bear; in the latter the impression is too weak to excite vision.

An endemic species occurs among some of the more irritable inhabitants of the burning regions of the torrid zone, and a possible case has been suggested where on the contraction of the pupil in a strong light, the rays converge on a spot of the retina previously paralytic, which is avoided by a slight motion of the head when the pupil is dilated. The proper disease is of the intermitting nature just described, and its best remedy is the bark. It is peculiarly rare, however, in its occurrence. See London Medical Transactions, vol. i.; and London Medical Observations and Inquiries, vol. i. p. 111. &c.

NY'MPHÆ, (from νυμφα, *a water nymph*). *Alæ internæ minores clitoridis, colliculum, collicula, myrtochcilides*, are foldings of the skin within the labia, rising from above the clitoris, and passing obliquely downward and outward, till they are lost about the entrance of the vagina. Between them is the orifice of the meatus urinarius. The substance of the nymphæ is spongy, and the orifices of numerous glands are visible on its surface.

NY'MPHÆA, (from the same). *Nenuphar, leuconymphæa, micro-leuco-nymphæa.* The GREAT WHITE WATER-LILY. *Nymphæa alba et lutea* Lin. Sp. Pl. 729. Each is an aquatic plant, said to be anodyne and demulcent, but too insignificant to demand any further notice. See Raii Historia. The name also of a preternatural excrescence on the nymphæ.

NY'MPHÆA GLANDI'FERA, INDI'CA, and MADRASPA'STANA. See FABA ÆGYPTIA.

NY'MPHÆA LOTUS. Lin. Sp. Pl. 729, an Egyptian plant, whose fruit is employed in making bread, and whose root is sweetish, resembling in colour the yolk of an egg when boiled. It seems to be referred improperly to this genus. See Alpinus de Plantis Exoticis, vol. iii. p. 227, &c. Wildenow has, however, retained it.

NYMPHOMA'NIA, (from νυμφια, *nymphæ*, and μανια, *furor*). See FUROR UTERINUS.

NYMPHOTO'MIA, (from νυμφα, and τεμνω, *seco*). In warm countries, the nymphæ or clitoris are sometimes inconveniently or morbidly large; and a portion is cut off by an operation, which has this appellation, for the ancients called the clitoris by the name of nympha. It is commonly styled circumcision of the clitoris.

NYSTA'GMOS, (from νυσταζω, *to be drowsy*). A WINKING OR TWINKLING with the eyes, such as happens when a person is very sleepy. When a disease, it is an instance of the chronic kind of convulsion, and arises from any cause of irritation in the eye, and is observable in all nervous irritable constitutions.

O.

OB according to Selden was usually translated Python, or magician. The *ob* of the ancients was a spirit or dæmon, that gave answers which seemed to come from some part of the body, but with a voice so low, as not to be distinctly heard. The obi of the Africans is a filthy malignant spirit. See Moseley on Sugar, second edition.

OBCO'NICUS, (from *ob*, and *conus*, *a cone*); somewhat conical.

OBELÆ'A, (from ὀβελος, *a dart*, because it is straight); SAGITTALIS SUTURA, q. v.

OBE'SITAS, (from *obesus*, *fat*). FATNESS. This state is peculiarly common in England and Holland, supposed to arise from the use of new malt liquors, or from a less active life; but more generally referable to the phlegmatic temperament, or to idiosyncracy. Vinegar never prevents fatness, but by destroying the vigour of the stomach; and the best means of avoiding the accumulation of fat, is active life, with a diet rather of vegetable than animal substances. It often predisposes to disease, though it cannot alone be styled morbid. A remarkable instance is described in the London Medical Observations and Inquiries, p. 69—84. See POLYSARCIA.

OBFUSCA'TIO. See OFFUSCATIO.

OBLA'TES PURGA'NTES. Cakes, made of flour, sugar, and purging ingredients; not an uncommon form of quack medicines for worms. Ching's lozenges are of this kind; but, in the greater number of such formulæ, calomel, not often in the best state, is a frequent ingredient.

OBLI'QUUS, (from *ob*, and *liquo*, *to flow aside*). An appellation of muscles whose fibres are oblique; a name also of the *pronator teres*.

OBLI'QUUS ASCE'NDENS vel INTE'RNUS. ACCLIVIS. These muscles arise fleshy from the spine of the os ilium and ligamentum pubis, and the upper edge of the os sacrum, according to Dr. Hunter; but other anatomists describe them as passing forward and upward from the ossa pubis and ilii, forming a broad membranous thin tendon, implanted into the whole length of the linea alba, and the cartilages of the eighth, ninth, tenth, eleventh, and twelfth ribs. Their tendons divide into two lamellæ, one of which joins the rectus on each side, and the other the transversalis. These muscles are not perforated by the spermatic cord. Besides their use in compressing the belly, that part which arises fleshy towards the back part of the edge of the os ilium, and goes to the cartilaginous endings of the ribs, not only depresses them, and straightens the thorax in expiration, but from the order of its fibres counteracts the descending obliques in turning the trunk of the body, on the axis of the vertebræ. On its contrary side, as the series of its fleshy fibres is parallel to those of the descending oblique muscle, they may concur with them in discharging their office.

OBLI'QUUS DESCE'NDENS, vel EXTE'RNUS. DECLIVIS. They are the external muscles of the belly, denominated from the progress of their fibres, which run obliquely downwards. They arise by productions partly fleshy, and partly tendinous, from the lower edge of the fifth, sixth, seventh, and the greater number of the inferior ribs, which indent themselves into the fleshy dentiform processes of the serratus anticus major. Their fibres run forward and downward, terminating in the spine of the ilium, os pubis, and linea alba. Part of these fibres, which run toward the ilium, are lost in the fascia of the thigh, and those which run toward the os pubis are reverted, and consequently double, forming what is called the *ligament of Poupart*, and through it the spermatic vessels of men, and the round ligaments of the womb in women pass, for which purpose the tendinous fibres separate, and form a ring. From their origins, which are mostly fleshy, their oblique descending fleshy parts expand themselves into a broad membranous tendon, before they go over the rectus to their insertion in the linea alba and os pubis, from whence, still descending, they end partly tendinous in the ligamentum pubis, but chiefly fleshy on the superior and fore-part of the circular edge of the os ilium. They do not adhere to the transverse processes of the vertebræ lumbares, but the largest, last, and most fleshy digitations, leaving the lowest bastard rib at its extreme point, in their oblique descent going forward, still recede gradually from the vertebræ, forming a triangular interstice, filled by the sacrolumbus and os ilium, on its lower side; in this area the fibres of the subjacent muscles plainly appear. These muscles give strength to the parietes of the belly, sustain and compress the viscera, propel the fæces, urine, and the fœtus: that part between the linea alba, os pubis, and the spine of the os ilium, bearing an analogy in its position to the mastoideus of the head, serves for the circumrotation of the trunk, upon the axis of the vertebræ, when we turn the body to the contrary side, and the feet remain unmoved.

Obli'quus inferior and major, *capitis obliquus inferior*. One of these muscles rises on each side, from the lateral part of the spinal process of the vertebra dentata, goes upward and outward, and is inserted into the transverse process of the atlas. Together they act by giving a rotatory motion to the head, and run in a contrary direction to the *obliquus superior*.

Obli'quus major o'culi, *superior; trochlearis; amatorius; longissimus oculi*. It is called *trochlearis* from its tendon passing through a cartilaginous pulley, situated in the orbit of the eye, to the inside of the internal angular process of the os frontis, near the inner angle. This muscle rises tendinous from the bottom of the socket near the entrance of the optic nerve, and passing towards the upper part of the socket, near the great angle of the eye, its round tendon runs through a cartilaginous pulley, fixed to a cavity in the os frontis; from thence it is reflected, runs obliquely backward, enclosed in a ligamentous sheath, and is inserted tendinous into the sclerotica, upon the upper part of the globe of the eye, a little behind the insertion of the rectus superior. When it acts singly, it rolls the eye round its axis. When it acts in conjunction with the obliquus minor, the eye is drawn outward or forward.

Obli'quus minor. See Rectus minor.

Obli'quus minor vel infe'rior o'culi, *Amatorius*, rises chiefly fleshy, just within the edge of the lower and anterior part of the socket, near the caruncula lachrymalis, and, passing obliquely backwards under the globe, is inserted into the sclerotica, on the external side of the eye, near the optic nerve.

Obli'quus nasi, *laterales musculi*, thin muscles running along the sides of the pyramidales nasi, fixed to the apothysis nasalis of the ossa maxillaria, and inserted into the alæ narium.

Obli'quus palpebra'rum, consists of all that extent of fleshy fibres which by a thin stratum surrounds the edge of each orbit, and from thence wholly covers the two eyelids. They are transversely oval, adhere to the skin of the eyelids, and wrinkle them.

Obli'quus supe'rior. *Capitis obliquus superior*. These muscles are on each side covered by the head of the trachelo-mastoideus; each rises from the transverse process of the atlas, and is inserted into the os petrosum and os occipitale, near the processus mastoideus. They bend the head backward.

Obli'quus supe'rior o'culi. See Obli'quus major oculi.

OBLI'VIO, (from *obliviscor, to forget*). See Amentia.

OBLO'NGUS; applied to the leaf of a plant, whose longitudinal diameter exceeds that of its transverse.

O'BOLUS. A weight of about nine grains.

OBOVA'TUM. Oval.

OBSIDIA'NUM, (from *Obsidianus*, its inventor). See Antimonium vitrificatum.

OBSIDIA'NUS LA'PIS. See Ampelitis.

OBSONIO'RUM RHUS. See Rhus.

OBSTETRICA'TIO, (from *obstetrix, quòd dolori obsistat*). Midwifery. By midwifery is strictly meant the actual operation of delivery, but in a more extensive view it includes the management of female diseases in the unimpregnated or pregnant state. The word is not, however, always employed in such an extensive sense, and it usually includes the conduct in the pregnant or parturient state only, to which is usually added the management of the complaints of newly-born children.

Midwifery, like medicine, was in its earlier periods the result of sagacity assisted by more mature, or more extensive observation; nor is it surprising, in the ruder states of society, when science had not dawned, that it should be confined to women, who alone would probably attend in such circumstances. These were the practitioners among the Jews, very generally among the Grecians and Romans. The names of Cleopatra, the voluptuous queen of Egypt, of the courtezan Aspasia, of Sotira, Salpe, and many others, who distinguished themselves in this department, have reached us; but whether the conduct of a labour was, in those periods, ever intrusted to a male practitioner, is a question not yet determined. Women and slaves, at Athens, were forbid to study medicine, but this prohibition would not apply to the more domestic treatment of parturient women; and Hippocrates, Galen, and Ætius, speak of female practitioners. Among the Romans, though the generality of midwives were females, accoucheurs of the other sex were not uncommon. The works of the supposed freed-man of Julia were those of a female slave, and probably neither the productions of Erotis nor Trotula, to whom they have been attributed. Trotula is quoted in them.

When we speak of more regular practitioners, Hippocrates must, as usual, be in the foremost rank; yet it does not appear that he was himself a practitioner, and his directions are equally harsh and injudicious. Little was known, by the accoucheurs, or at least little taught, respecting the manual operation, previous to the restoration of learning. The only writers of an earlier period treated, in general, of the diseases of women, and in more indefinite terms of the manual assistance to be given in labours. One of the first of these was Paulus of Ægina, in the seventh century. The delivery by the feet was usually condemned, unless the child could not be brought forth by other means: even the crotchet was preferred to it by Hippocrates. The best of Galen's works on this subject is the Tract de Formatione Fœtus, in the fifth volume of Chartier's elegant but inaccurate edition. Some other tracts, on subjects connected with midwifery, are left us by Galen.

The works attributed to *Cleopatra* are probably spurious, and are full of the most trifling and superstitious receipts; nor, as we have just observed, are those of *Erotis* free from suspicion. The first author, among the Romans, who speaks of deliveries and female complaints, is *Celsus:* he broke the shackles imposed by Hippocrates, and taught us that the child might be delivered by the feet. He was followed at some distance by Moschion, a late author of the methodic sect, about the time of *Galen*, without adding any remarks on the operation itself. Yet probably the means of assisting delivery had been studied, and some mechanical contrivances suggested; for, in *Albucasis*, we find the coarse rudiments of the forceps, the crotchet, and other instruments, which the delicacy and improvement of modern practice have rejected; for no instrument is found so powerful, in the greater number of cases, as the unassisted efforts of nature. In the darker ages, we find the name of *Albertus Magnus* prefixed to an indecent, and probably a spurious, work, De Secretis Mulierum;

and, about the end of the fourth century, similar tracts appeared under the names of *Henricus de Saxonia*, and *Michaelis Scotius*, in the latter case appended to his Treatise de Physiognomia. It will be obvious that science could gain little by such works.

In the beginning of the sixteenth century we find midwifery cultivated with greater skill, under better auspices. This was nearly the era of *Eucherius Rosslin*, known better by the name of *Rhodion*, of Frankfort; and soon afterwards *Rueff*, of Zurich, and *Ryff (Rivius)*, of Strasburg, followed in the same line, though not strictly in the manual departments of midwifery. This nearly was the era of the dawn of midwifery in this kingdom; for in the year 1540 was published, in English, the Byrthe of Mankind, or the Woman's Booke, by *Thomas Raynold*, physician. It was held in high estimation, and continued a standard work for more than ninety years. In this interval, however, *Harvey* had published his Exercitatio de Partu, *Sydenham* his Observations on the Diseases of Child-bed Women; and different tracts relative to midwifery had appeared by *Charleton*, *Wharton*, and others in this kingdom. The increasing character, however, of *Ambrose Parè*'s Surgery, first published in 1573, the works of *Roussel* and *Guillemeau*, which rapidly succeeded, before the close of the century, soon eclipsed these feebler lights, and gave a new era to the art. Parè was the first modern author who recommended turning the child and delivering by the feet, a practice which Guillemeau supported and extended.

About the beginning of the seventeenth century, we find the first undisputed work of a female midwife *Louise Boursier (Bourgeois)*, who is styled by authors obstetrix regia. She was a pupil of Ambrose Parè, and published observations on sterility, abortions, fertility, lyings-in, the diseases of women, and newly-born infants. About the middle of this century *Chamberlen*, catching perhaps a hint from the Arabians, boasted of a new invention to facilitate delivery. This was the forceps, or more probably the vectis. He was a man of abilities and experience, though not, as Mauriceau in his fifth edition boasts, physician to the king. It was not himself, but one of his sons, who went to Paris for the purpose of selling his secret; but returned unsuccessful, from having miscarried in his first attempt. He had before translated the third or fourth edition of Mauriceau's midwifery, which was published in 1672. The invention of the vectis has been claimed for *Roonhuysen*, whose works were published at Amsterdam from 1663 to 1672, though more properly belonging to his son *Roger*, if really an invention; but he seems to have purchased the secret of Chamberlen, and to have afterwards used only a single blade. In this period, the works of another female, *Justina Siegmund*, who was born in Silesia, but who practised at Brandenburg, appeared in 4to. at Berlin; and Dr. *Willoughby*'s manuscript treatise, quoted with considerable extracts by Dr. Denman, belongs also to the present era. *Deventer*'s midwifery, published at Leyden at the end of this century, must be now chiefly noted for his aversion to instruments, for it scarcely merits any particular commendation. His works are chiefly distinguished for an opinion that delivery is often retarded by an obliquity of the womb, a circumstance denied by many subsequent accoucheurs. It is certain that the womb, in the pregnant state, occasionally inclines to either side, and sometimes presses forwards, but never, except when retroverted, in a degree to retard or impede delivery.

The fame of Chamberlen equally excited emulation and opposition. Dr. *Bamber* supported the credit of instruments, while Dr. *Maubray*, the first English public teacher of midwifery, in 1723, with greater zeal decried them. The foreign authors, in the early part of this century, were *De la Motte*, a Frenchman, and *Denys*, of Leyden. The Traité des Accouchemens of the former is an excellent work, and may be perused, at this time, with advantage: that of the latter is more concise, and of inferior value. *Dion*'s midwifery was published in 1718, translated into English in the following year; and in 1727 appeared Dr. *Simson*'s "System of the Womb," a work rather ingenious than of practical utility. *Chapman*'s "Treatise on the Improvement of Midwifery" was published in 1733, and, in the following year, Dr. Hody published *Gifford*'s "Collection of Cases," which occurred in his own practice, and which he describes with great simplicity and fidelity. He used the forceps, then called the extractors, but seems not to have trusted them beyond the reach of his hand. In 1736 *Dawke*'s "Midwife rightly instructed," and, in 1737, *Bracken*'s "Midwife's Companion" appeared.

In 1739 sir *Richard Manningham* published his Compendium Artis Obstetriciæ, having previously taught at a lying-in hospital of his own institution. He succeeded Chapman, who was the second teacher of the art in this kingdom; and he was followed by sir *Fielding Oulde*, of Dublin, who published in 1741 his "Treatise on Midwifery." In 1752 we received "Elementa Artis Obstetriciæ," from *Roderer*, and, in 1759, his "Icones Uteri Humani," both published at Gottingen. *Smellie*'s Anatomical Tables followed in 1754, and Dr. *Hunter*'s very accurate ones in 1774. *Smellie*'s "Treatise on the Theory and Practice of Midwifery" appeared in 1752, and a very elaborate, but not a very important, work by Mr. Wallace Johnson in 1769. M. Puzot of Paris published his Traitè des Accouchemens in 1759; Levret in 1761; Plencks his Treatise at Vienna in 1768; Fried in 1769, and Stein in 1770; works in the German, and little known in England. Within a few years we received Dr. Denman's very valuable work on this subject, the improved edition of his former volumes; and successive editions of Dr. Alexander Hamilton's Elements, or Outlines, have been published by himself, and his very able, respectable successor, Dr. James Hamilton. Though short, as a syllabus, they are comprehensive and satisfactory.

We have thus brought the sketch of the history of midwifery somewhat lower than our former histories, since, as, from the nature of the subject, it must be rather a catalogue of works than a descriptive account of their contents, we trod more safely over the ashes, with less apprehension of the fire underneath. For the same reason, we shall only in general refer for the conduct and qualifications of the accoucheur to what we have said on that subject at the end of the article CHIRURGIA.

Midwifery, at present, is taught and practised as a distinct branch of art; and the practitioner is supposed to possess a competent knowledge of the parts of the pelvis, its dimensions, the depth of its cavity, its various distortions, &c.; the parts of women subservient to generation; the state of the womb and its neck, in the different periods of gestation: extra uterine fœtuses; moles; the progress of a child's head through the different parts of the pelvis in a natural labour; the secundines; the various complaints which usually attend pregnancy; the manner and utility of touching; the difference betwixt false and true labour pains; the different kinds of labour; the various modes of the child's presenting, with the methods of delivery; the disorders of childbed women; the management of the child and its mother during the time of lying-in, &c. See PELVIS, PARTURITIO, GESTATIO, INVOLUCRA, PRÆSENTATIO, &c.

OBSTIPA'TIO, (from *obstipo, to stop up*). COSTIVENESS, a disease placed by Dr. Cullen in the class *locales*, and order *epischeses*, which he defines no discharge of fæces, or less frequent than usual. Its species are, 1. *Obstipatio debilium;* in lax and weak habits. 2. *Obstipatio rigidorum;* in those of rigid fibres, and hypochondriacs. 3. *Obstipatio obstructorum*, with symptoms of colic, or from stony concretions in the bowels. See CONSTIPATIO.

OBSTI'PITAS, (from the same). See CONTRACTURA.

OBSTRU'CTIO, (from *obstruo, to shut*). Obstruction in the vessels of any part; is a term applied when any obstacle opposes the circulation of their proper fluids. Vide MORBI FLUIDORUM. The word *oppilatio* is used by ancient authors as a more complete or fixed obstruction. Rhodius.

OBTUNDE'NTIA, (from *obtundo, to make blunt*). Medicines suited to cover the acrimony of the fluids. See DEMULCENTIA.

OBTURA'TOR EXTE'RNUS, (from *obturo, to shut up*). *Marsupialis, bursalis musculus.* This muscle covers the foramen magnum ischii, and, rising from the bone before the foramen, runs backward under the head of the os femoris; covered by the quadratus femoris, and is inserted into the trochanter major, contiguous to the internus. Like it, this muscle is a rotator.

OBTURA'TOR INTE'RNUS, more frequently than the preceding called *marsupialis et bursalis musculus*, arises from the inner circumference of the foramen magnum ischii, passes round the ischium as on a pulley, and is inserted into the trochanter major, contiguous to the pyriformis. It is a rotator of the thigh; and its tendon plainly forms a groove on the bone in its passage.

OBTURA'TOR NE'RVUS, a branch of the crural; it passes through the foramen ovale, and is lost in the inner muscles of the thigh.

OBTURA'TRIX ARTE'RIA, (from *obturator*), a branch of the hypogastric, which perforates the obturator muscle, and goes out of the pelvis, at the upper part of the ligament of the foramen ovale, having first sent a branch over the symphysis of the os ilium, and os pubis, to the inguinal glands and integuments. It sends out a branch which communicates with a branch of the sciatica arteria; gives out branches to the adjacent muscles, and sends many small ones by the neck of the thigh-bone.

OBTURA'TRIX VE'NA, is a branch from the hypogastric vein, and receives this name where it enters the internal obturator muscle.

OBVOLU'TUS, (from *obvolvo, to roll up*). Folded or rolled up.

O'CCA. See CETE ADMIRABILE.

OCCIPITA'LIS ARTE'RIA, (from *occiput*), is the first external, or posterior branch of the external carotid. It passes obliquely before the internal jugular vein; and having sent out branches to the adjacent muscles, it runs between the styloid and mastoid apophyses, along the mastoid groove, and goes to the muscles and integuments which cover the occipital bone. It communicates with the temporal, vertebral, and cervical arteries.

OCCIPITA'LIS MU'SCULUS is one of the quadrati, mentioned by Columbus, and accurately described by Fallopius. These muscles are short, broad, thin, and fleshy, situated on the occiput, where the mastoideus and splenius are inserted. They soon become tendinous, join with the pericranium, which firmly adheres to the hairy scalp on the sinciput. When they act, they pull the hairy scalp backwards.

OCCIPITA'LIS NE'RVUS. A branch from the tenth pair of nerves which proceed from within the skull: it spreads and runs on the upper and lateral parts of the head.

OCCIPITA'LIS POSTE'RIOR ARTE'RIA is a branch from the vertebral, spreading on the occiput.

OCCIPITA'LIS VE'NA. A branch from the posterior, or upper external jugular; but sometimes proceeding from the vertebralis, or axillaris. It branches on the occiput.

OCCI'PITIS OS, is of a rhomboidal figure; a transverse ridge, running from the mastoid process of one side to that of the other, divides it into two parts. Its external surface is convex, except at the cuneiform process, at the base of which, on each side of the foramen magnum, are the condyles which connect the head to the spine. On the outside of these condyles the bone projects, and there is a notch where the internal jugular vein passes. It is divided into four cavities in its inside, by a crucial spine, in which there are canals for the superior, the longitudinal, and the inferior, frequently for the occipital sinus; those canals on each side, for the lateral sinuses, are continuations of the longitudinal. There are five foramina proper to this bone; the foramen magnum, a hole on each side just above the condyle for the ninth pair of nerves, and generally two which penetrate from behind the condyles to the fossæ of the lateral sinuses. Besides these, there are two common foramina, one on each side, between the processus cuneiformis and os petrosum.

The os occipitis is peculiarly thick, apparently to defend the cerebellum, and it is stronger than any other bone of the head, except the os petrosum. Below, and at its sides, the large muscles have apparently rendered it thinner, but they also defend it from injury. This bone is joined, by its cuneiform process, to the sphenoidal, and, in old age, unites with it. The lambdoidal suture unites it to the parietal bones, and the additional part of the temporal suture to the temporal bones. The

condyles of this bone connect it with the first vertebra; but these admit only of a slight lateral motion, for the rotatory motion of the head is owing to that of the atlas on the second vertebra.

In the fœtus this bone is divided by cartilage into four parts. The largest forms all the bone which is above the great foramen. Two other parts form the sides of the foramen. The cuneiform process, which is the last, appears often distinct at the age of six or seven.

OCCI'PITO-FRONTA'LIS MUSCULUS; *epicranium*, rises from the posterior part of the occiput, goes over the upper part of the os parietale and os frontis, and is lost in the eyebrows. It is a very thin muscle, raises the eyebrows, and wrinkles the forehead; an antagonist to the corrugator Coiterii.

O'CCIPUT, (from *ob* and *caput, the hinder part of the head*); *prora, inion.* Inion is confined by Blanchard to the beginning of the spinal marrow; by others, to the back part of the neck.

OCHEU'S, (from οχεω, *to carry*). See SCROTUM.

OCHLAGO'GI, (from οχλυς, *populus*, and αγωγος, *ductor*). See AGYRTÆ.

O'CHRA, (from ωχρος, *pale, earth of a pale yellowish colour*). YELLOW OCHRE, sometimes brown, occasionally red: the latter is called RED OCHRE, *rubrica fabrilis, Creta rubra, arcanne,* MARKING STONE, RUDD, and RUDDLE, oxydated iron of Haüy, iv. 105. See Lewis's Materia Medica. Neumann's Chemistry.

O'CHRA NI'GRA. See PLUMBUM NIGRUM.

O'CHRUS, (from ωχρος, *pale*, from the pale muddy colour of its flowers); *lathyris, ervilia, pisum ocrus* Lin. Sp. Pl. 1027. It bears cylindrical pods with round seeds as large as peas, which, though eatable, are indigestible.

OCHTHO'DES, (from οχθος, callous, tumid, lips of ulcers). See ULCERS.

OCIMA'STRUM, OCYMA'STRUM, (a dim. of *ocimum, basil*); *lychnis sylvestris alba simplex*; WILD WHITE CAMPION; *lychnis dioica* Lin. Sp. Pl. 626. β. Found in hedges and borders of fields; flowers in May. The flower is said to check the fluor albus and inward bleedings; the herb to cure convulsions in children: but its virtues have not obtained it a place in practice. See Raii Historia. It is a name for the *circæa lutetiana*, and several species of *lychnis*.

O'C-KOW. A Chinese remedy for diseases of the breast, said to be the flesh of the common ass, boiled down to the consistence of a thick glue. It succeeded in relieving the author of this account, in the eleventh number of the Edinburgh Medical Journal, Dr. Baildon, of a consumptive complaint; but the digitalis was taken at the same time, so that the effects of the remedy are equivocal.

OCRE'A. See TIBIA.

OCTA'NA, (from *octo, eight*). An erratic intermitting fever, which returns every eighth day.

OCTA'VUS HU'MERI MU'SCULUS, OCTA'VUS HU'MERI PLACENTI'NI MU'SCULUS MINOR. See TERES.

OCTANDRI'A (from *octo, eight*, and ανηρ, *a man*). A class of plants having eight stamina.

OCULA'RES COMMU'NES, (from *oculus, an eye*). See MOTORES OCULORUM.

OCULA'RES EXTERNI. See MOTORES OCULORUM EXTERNI.

OCULA'RIA, (from its use in complaints of the eye). See EUPHRAGIA.

O'CULI CANCRO'RUM, CRABS EYES, *cancrorum lapides, et lapilli,* are stony concretions, found in the head of the *astacus fluviatilis*, or river craw-fish, lodged in a bag on each side. These stones are roundish, flatted on one side, white, having sometimes a reddish, and at others a blueish cast, of which the blue are preferred, as the white are taken out after the fish hath been boiled: they are internally foliated. The largest quantities are the produce of Muscovy, particularly of the river Don.

They were formerly used as absorbents of acid humours in the primæ viæ, and supposed, when combined with the acid, to be more aperient than the other absorbent earths. The earth of crabs eyes differs much from that of crabs claws, for the first is not convertible into quick-lime; and in its chemical relations is said to resemble the earth of hartshorn. It is therefore, like the bones, a calcareous phosphat.

These stones are counterfeited with pipe-clay, chalk, or the shells of fishes; but these compositions are easily distinguished from true crabs eyes, which are of an uniform texture, stick to the tongue, soften with water, and dissolve in acids. See Tournefort's and Lewis's Materia Medica.

O'CULO-MUSCULA'RES. See MOTORES OCULORUM.

O'CULO-MUSCULA'RES EXTERNI. See MOTORES OCCULORUM EXTERNI.

O'CULUS, (from οπτομαι, *to see*). The EYE; *illos.* The external parts are the eyebrows, the eyelids, the extremities of which, where the eyelashes grow, are called *orchos*, the cilia, the fore-part of the globe, the membrana conjunctiva, the cornea lucida, the iris, the pupilla, the carunculæ lachrymales, and angles of the *eyelids*, &c. The external eyes are named *paropiæ*; the internal, *pegæ*. The internal parts are the globe of the eye, the adnata or albuginea, the extremity of which is called *premnon*; the sclerotica, the choroides, the retina, the aqueous humour (*hydatodes, hydatoides; ooides; ovatus oviformis vel albuginosus humor*); the vitreous humour, *hyaloides*; crystalline humour, *phacoides*; the muscles that move the *eye*, and the optic nerve, &c. For the particular descriptions, see the different articles in verbis. To explain, however, the theory of vision, it will be necessary to add a short account of the different parts of the organ in a connected view.

The eye is an irregular sphæroid, projecting a little at its fore-part, where it is seen between the lids. In this projecting portion we find a fluid, in which a fine membrane, perforated in the centre, floats. Beyond this fluid is a more solid transparent body, in the shape of a lens, and still farther back, a gelatinous fluid which covers a very fine semi-opaque membrane. All these fluids are confined by a dense substance which supports and protects them, called the coats of the eye.

Having given this very general idea of the organ, we shall proceed to notice the containing coats. From the eyelids to the ball of the eye a very thin vascular membrane is extended, in some degree to support the eye, and to prevent substances passing between it and

the edges of the orbit. This is the *adnata* or *conjunctiva*, in which, even when not diseased, red vessels may be distinctly seen, and which is the most common seat of ophthalmia. A hard, white, firm, tendinous substance forms the outer coat, viz. the *sclerotica*, which in the projecting part of the eye is transparent, and called the *cornea*. The sclecrotica is peculiarly strong in the fœtus; the cornea comparatively weaker than in the adult; each may be divided into laminæ, but these are more distinct in the cornea, and separated by a cellular substance, containing a watery fluid, distinct from the aqueous humour already mentioned. In fact, if the compacted laminæ of the sclerotica are supposed to be separated, with a very pellucid fluid interposed between each, it will at once give a correct idea of the projection of the cornea, and of its transparency. When the optic nerve, which is inserted behind, reaches the globe, the external coat of its sheath covers the sclerotica externally, and the internal, internally: the external membrane of the eye is thus inserted between the coats. Le Cat and others have described the eye as a bottle blown from the optic nerve, preserving its coats in the coats of the organ; but this is a refinement, if true, of no practical advantage either in the theory of vision or the pathology of the organ.

The projecting part, or *cornea*, is described as the segment of a smaller circle; but it is by no means a portion of a circle, as its margin is flat towards the nose. The fluid between the laminæ gives it transparency; for in fevers this fluid becomes more opaque, and the eye acquires that dulness so constantly observed: when coagulated at the approach of death, the light is even reflected from it, and the eyes are said to be glassy. Over the cornea there is a very thin glassy membrane, probably derived from the adnata, and by maceration it is said that the cornea separates from the sclerotica. The cornea is sometimes the seat of abscesses, and seems to be supplied with vessels; but in a sound state these do not carry red blood.

Within the sclerotica is the *choroid coat*, covered with a black, or at least with a dark-coloured pigment, which, in very fair persons, is of a lighter colour, and in the albinos, almost white. The choroid is minutely vascular, and not in every part connected with the retina. It consists of two laminæ; the outermost is that which supports the numerous vessels, and the innermost, the tunica ruyschiana, has the structure of a secreting membrane, for the appearance is villous, and these villi have been styled *tapetum*. The black pigment is a mucous substance, sometimes wanting in old persons, and in animals who seek their prey by night. It seems, however, more conformable to the analogy of nature, that in these, as in the albinos, it is of a grey or white colour.

When the choroid coat reaches the margin of the sclerotica, to accommodate it to the smaller circle of the cornea, it is folded in plaits, called the *ciliary processes*, still covered with the dark pigment, resembling, when this is washed away, the valvular doublings of the villous coat of the intestines. Previous to its inflection it is firmly fixed to the sclerotica, and is closely united with the root of the iris. At their internal extremities they are attached to neither, but are loose and floating. These processes leave an impression both on the vitreous humour and the retina at the edges, where they are in conjunction, which have been styled *sulci ciliares*, the ciliary processes of the retina, &c. which only confound a simple idea, and multiply terms without reason. The ciliary processes collectively are called *corona* or *circulus ciliaris, ligamentum* or *corpus ciliare*, and are of great importance in vision: it is of consequence to remark, that their connection with the retina is the only means by which it is kept expanded, and the only mode of connection between the humours of the eye and their coats.

The *iris* or *uvea* is the coloured circle which we see in the eye, perforated by the black spot, styled the *pupil*. When put in water and examined with a microscope, the anterior surface appears to be covered by minute villi, whose colour fades when putrefaction begins. The fibres of the iris are transparent, and the colour chiefly depends on the pigment at the posterior surface.

The iris consists, it is said, of two sets of fibres, both irritable and muscular; the one surrounding the pupil, the other radiating from or to the circular, and as it is called muscular margin. The muscularity, however, has been denied, and its contraction and relaxation supposed to depend wholly on a stimulus on the retina. It is copiously supplied with nerves from the ciliary. Two large ciliary arteries, and two lesser anterior arteries, which pierce the ligamentum ciliare, freely anastomose round its root, and send serpentine branches to the margin of the pupil, where they again anastomose, and send off branches towards the edge of the iris. The corresponding veins pass into the vasa vorticosa of the choroid coat; some between the choroid and sclerotic, and some piercing the latter, pass out, and spread on the surface of the eye. In fact, these vessels seem to constitute the whole of the iris, which is probably vascular rather than muscular.

The *retina* is the most important part of the eye, since it is the nervous expansion on which visible objects are painted; and by this means the image, we mean not to say the material image, is conveyed to the sensorium. The optic nerve enters, we have said, not immediately at the back part of the eye, but a little on the inward side towards the nose. At some distance, before it passes through the sclerotic coat, an artery penetrates its vagina, the *arteria centralis retinæ*, so that if the optic nerve be cut after its entrance, the artery retracting, leaves a little foramen, called by ancient anatomists the *porus opticus*. The extremity of the optic nerve, before it expands in the retina, forms a little conical point, which we suspect to be a ganglion.

The retina itself is spread over the choroid coat, resting on a reticulated membrane which supports its vessels, probably derived from the pia mater, the *lamina cribrosa*: from its texture the name was apparently given. In this membrane the branches of the arteria centralis, derived from the optic and ophthalmic artery, and soon after entering the sclerotica, divided into many large branches, from which numerous anastomosing subdivisions proceed, are most profusely scattered. The retina seems to terminate at the ciliary processes, but the lamina cribrosa probably passes over the posterior part of the lens. This idea will reconcile many disputes, and some, seemingly discordant, observations.

The *membrana pupillaris* is a small vascular membrane

which extends over the pupil in the fœtus. At about the seventh month it begins to disappear, and is scarcely, if at all, discernible at the ninth. Its larger arteries come from the iris; smaller and more numerous branches from those of the lens. Its use is not known, nor does it merit any minute disquisition. It certainly prevents the iris from contracting in utero; but there is no cause for its contraction, and apparently no inconvenience would arise if no impediment existed. It is not impossible that some imperceptible remains of this membrane may prevent too violent effects from the first access of light.

The fluid in which the iris floats is called the aqueous humour, and its floating fibres are supposed to divide the projecting part of the eye into two chambers, the anterior before, and the posterior behind, the iris. The error, however, is considerable, for there is no space behind the iris which merits the name of a chamber, since the iris moves almost in contact with the lens. In the fœtus, this fluid is red and turbid, in the adult perfectly transparent, but seldom exceeding in weight five grains. Mr. Chevenix found it to be an albuminous fluid, containing also gelatine and muriate of soda, but in such small proportions that the specific gravity of this fluid is not more than 10,053. We might perhaps remark, that the common salt assists the transparency, since salt water is peculiarly so, but that it is in so small a proportion that the aqueous humour has little, if any, taste. (Philosophical Transactions for 1803, p. 96.) It seems to be secreted from the vessels of the iris, and is regenerated after being discharged, within a few hours.

The crystalline is almost immediately behind the iris. It resembles a flatted sphere. The anterior surface is the segment of a sphere about eight lines, the posterior of about five lines. The anterior is consequently the flatter surface. The crystalline increases in density from the surface to the centre. On the average its specific gravity is about 10,790, without any traces of muriatic acid. It contains, therefore, much larger proportions of albumen and gelatine, with less water. It putrefies rapidly, splits when dry, into lamellæ, so that at first it exhibits a star-like fissure, and is at last divided into shreds. When its density, its rapid putrefaction, and its fibrous structure are considered, we must conclude, that it contains a large proportion of fibrin, and we shall more readily admit the modern doctrine of its muscularity. The lens, it is now acknowledged, has a distinct capsule, and a canal surrounds it, called from its discoverer, Petit.

The *vitreous humour* fills the larger proportion of the cavity of the eye. It does not float loosely, but is contained in cells, so as not to flow freely without pressure. When removed from these it appeared of the same specific gravity as the aqueous humour, and similar in its chemical relations. Fourcroy found in these humours some phosphat of lime, which Mr. Chevenix could not discover. The canal of Petit is formed, it is supposed, by a double layer of the vitreous humour, which forms also the capsule of the lens; but the capsule and the canal are distinct. Mr. Bell supposes that the Petitian canal is formed by the vascular membrane of the retina, which also forms the membrana pupillaris of the fœtus; and his arguments render the opinion highly probable.

The eye is surrounded by numerous muscles, whose irregular action occasion that motion of objects which we perceive in vertigo. These muscles arise round the foramen, and are inserted into different parts of the orbit, giving by their tendinous expansions the brilliant whiteness of the fore part of the organ. Four of these muscles are called *recti* from the direction of their fibres, and it is these which have been supposed to compress and change the figure of the eye.

The *rectus superior* rises the eye upwards, the *attollens* and *levator* occuli, and as it expresses pride, is called also *superbus*.

The *rectus inferior* lowers the eye, styled, for similar reasons, *deprimens* and *humilis*.

The *rectus internus* moves the eye towards the nose, *adducens oculi;* and as it is directed to the glass while drinking, *bibitorius*.

The *rectus externus* turns the eye outward; *abductor oculi, indignabundus*. The origin and insertion of these muscles will be obvious from their action.

There are two *oblique muscles*. The first is the *obliquus inferior, longissimus*, which rises from the bottom of the orbit by a slender tendon, passes the upper part of the eyeball fleshy; then forming a smooth round tendon, it passes through a cartilaginous pulley, in the margin of the orbit, and is inserted in the middle of the eyeball. It gives an oblique motion to the eye, and contributes with the other muscles to roll it. From its passing over the pulley, it is styled *trochlearis*.

The last is the *obliquus superior brevissimus*. It rises from the nasal process of the superior maxillary bone in the edge of the orbit, passing obliquely backwards and outwards under the ball of the eye, is inserted opposite to the obliquus superior. This muscle is in every respect the antagonist of the *inferior*.

The eye is an organ of peculiar delicacy and importance; but without the other senses it would afford generally imperfect, and often erroneous, ideas of external objects. This subject has been examined at some length, with great ingenuity, by Dr. Reid, (Inquiry into the Human Mind,) in what he styles the geometry of visibles; to which we must refer the reader, as it scarcely forms a part of our present subject. To explain the theory of vision, we premise a few remarks on some of the first principles of optics.

When light passes through a flat plate of glass it proceeds in a direct line, or at least nearly so; but when the glass is convex on either side it is bent from its direction towards the axis, or the line which passes through the centre. Numerous rays passing therefore from a point, and necessarily converging through a convex glass, are turned towards the axis, which must of course occasion them to meet at some point on the opposite side. This is styled the refraction of the rays; but rays impinging on the glass with a considerable obliquity do not pass through it, but are thrown back; and this is called the reflection of light. The degree of refraction differs with the density and the nature of the medium through which it passes.

To apply this popular view of the subject to vision we must remark, that the pupil of the eye, the aperture at which the light enters, projects, that it consists of transparent laminæ, with a very bright fluid interposed. By passing through this fluid the light is a little diverted from a rectilineal course, but it is more so in passing through the lens and the vitreous humour. By

their united effects the rays meet in a point, at the bottom of the eye or on the retina. Its image is there accurately painted, and this image conveys to the mind an idea of an object, corrected by the touch and by experience. The touch corrects the idea respecting the form of the object; experience respecting its distance. We have observed that the refraction is greater in proportion to the density of the body, through which light passes, and it is greater in proportion to the obliquity of the impinging rays; if that is not in so great a degree as to occasion reflexion. To bring all the rays from a given point accurately to a focus, the density of the refracting body must therefore not be uniform, but must increase at its centre, where the obliquity of the rays is less. This is the case with the lens; and when from causes to be hereafter explained the image is not distinct, the eyelids are partly closed, to prevent the more oblique rays from entering.

It may appear singular, that while refraction is so simple an operation, such a number of refracting media are connected in the organ. In general, however, refraction is not regular. Some rays are broken in the operation, and resolved into their colours, giving the image, or spectrum as it is called, with coloured (iridescent) fringes. This irregularity is different in different bodies, and sometimes the irregularity is on opposite sides. The opticians therefore who felt its bad effects in telescopes, employed glass of such kinds as to correct this defect by their opposed powers; and it is singular that the structure of the eye had not suggested this mode of correction, rather than that the correction should elucidate the accuracy of the image in vision. It appears probable that the fluid interposed between the laminæ of the cornea has some effect in this way, and that the irregularities of refraction from passing through the cornea are thus corrected, previous to the rays reaching the lens. The only inconvenience is the loss of light; for rays passing through different media are lost, or rather give an indistinct glare. The object of nature, however, in the structure of the eye, is to moderate the light; and we not only find many rays thus suffocated, but the vitreous humour is enclosed in cells, so that the refracted rays must be every moment passing through media of different densities before they form the image. When it is at last formed, it is comparatively very minute; and as each part conveys a correct idea to the mind, it is evident that every portion must at least impinge on a nervous fibre, and that each fibre must be of the minuteness of the image which the least visible object affords. Thus De la Hire calculates, that the image of the sail of a windmill, at the distance of 4000 toises, is but $\frac{1}{8000}$ of an inch, but very minute portions of this sail may be distinguished; and such reflections induced us to remark, when speaking of the nervous fibres, that what appeared in the microscope the smallest fibre was more probably only a fasciculus, and perhaps not the ultimate one.

When it was observed that the image was pictured on the retina, it was at once supposed that it was thus conveyed to the brain, and contemplated by the immaterial principle at its leisure. This, however, is highly improbable for the reasons stated, that, without the corrections of touching and experience, our ideas of visible objects are often erroneous. It is improbable also, from another circumstance; the image in the eye is inverted, and numerous have been the speculations to explain how this inverted image is again restored to its proper position. It was once supposed that the fibres in the optic nerves decussate in crossing; and again, that they are mixed in a ganglion near the sella turcica. The former is not true, nor would either explain the difficulty. Others have supposed that the soul looks at the image by reflection; an idle fancy, unworthy of a philosopher. The fact is, that experience corrects this and other errors: our knowledge of relations and relative positions are not conveyed by the eye.

With two eyes we see only a single object. This too has been explained on the principle of decussation which does not take place, and of the ganglion which can have no such effect. It chiefly arises from the axes of the eye being directed to the same point, which gives individuality to the idea excited in the mind. Experience teaches us that two objects cannot be in the same place, and we thus conclude the image to be single. This may be evinced by an easy experiment. A slight distortion of either eye, in every one's power, will give the appearance of a double object. If the uniform direction of the axes be gradually restored, the two objects will be seen to coalesce and become one. By diseases which affect the very minute motions of the eye, as a foul stomach, narcotic poisons, or spirituous liquors, which produce irregular action, no longer under the command of the will, objects seem also double.

Why then, it may be asked, have we two eyes? With two we see objects brighter; we see them more completely, for we take in a larger circle; nor are we left in the miserable state of blindness should an accident happen to one. It has been said, that when one is destroyed the other expands, and the loss is after a short period no longer felt; but this is not true. The person from habit is not sensible indeed of his loss, unless particularly required to examine the whole of an object, as of a column, and a minute motion of the head may assist him in this examination; but no expansion of the remaining eye can take place, for there is no apparatus for such a purpose.

Our ideas of the distance of objects is, we have said, the effect of experience; but the power of accommodating our vision, so as to survey objects at very different distances, has been the subject of much controversy. It has been supposed that the ciliary ligament is muscular, and draws back the lens; that the lens itself is muscular, and can change its own shape; or that the rectimuscles, whose tendons may be supposed to reach, perhaps to spread over, the cornea, may contribute to flatten it. Each opinion has had its advocates. Yet this accommodation of the eye to distance is very limited. A near-sighted person, with all his efforts, cannot easily extend his sphere of distinct vision, though he can considerably reduce it; but to reduce it he must render the eye more convex, which neither of the means suggested will effect. Much of this supposed change in the form of the eye, however, apparently results from a greater exertion of attention, as images within the sphere of distinct vision, when from some accidental circumstance confused, are readily perceived by an exertion of attention, without any change in the external circumstances. If either of the powers above mentioned have any effect in this respect, it is the action of the rectimuscles; and in trying experiments of this kind with attention,

we think we have been sensible of compression on the ball of the eye.

Habit has, however, a very considerable effect on the appearances of objects. Distortion of either eye, the effect of accident, is at first attended with double vision; but the object is soon seen single, though the cause remains. This circumstance, however, does not invalidate the former reasoning, since it arises from the power we possess of examining objects with one eye only. This is often done, particularly when the eyes are not equally acute.

Distinctness of vision depends much on the state of the organ, and this on the state of health. In disease we see imperfectly, because the eye rolls with an involuntary motion; and the person who sees dark spots in the bed-clothes, in a fever, constantly finds them moving, and his hands rove to catch them. It is not enough for peculiarly distinct vision that the object should be at the proper distance. All adventitious light should be removed; for this, as opticians know, gives a fringe, an indistinctness, to the outline. If objects are carried to the remotest limits of distinct vision, by an exertion of attention, they will be seen more perfectly. Objects reflected from a convex mirror, or looked at through a glass somewhat more concave than the eye requires, will appear at a distance indeed, but peculiarly distinct.

In the article AMBLYOPIA, we anticipated some of the most common irregularities of distinct vision; viz. the myopia and presbytia. We are now in a capacity to consider them more accurately. The *myopia*, it was observed, arises from too great refraction of the rays, so that they are brought to a focus before the image reaches the retina. The defect has been attributed to a greater convexity of the cornea, which, as we shall find, flattens by age, so that the disease is by time diminished. This, however, is but one cause, for many near sighted persons are not relieved by advancing years. From what we have said it will appear that it may arise from an increased density, and consequently the increased refractive power of the fluid between the laminæ of the cornea, the increased density of the lens in general, its less uniform increase towards the centre, or the increased refractive power of the vitreous humour. That these causes often take place is certain, since, in many families, short sight is constitutional and hereditary. There is no doubt, however, but that both the myopia and presbytia may be acquired. The former is often the disease of those accustomed to survey minute objects at short distances, as the student, the watch-maker, &c. the latter of persons used to strain their sight to distant views, as the sailor. How this is acquired we are not prepared to say. When we spoke of distinct vision, we admitted, in some degree, the power of the rectimuscles to flatten the eye; and in the sailor this power may produce the effect. The opposite change is more difficult of explanation. But is it a change? May not the eye naturally admit of distension; and may not this distention be particularly directed forward, as the coats of the eye are there less dense, unless counteracted by the rectimuscles? When not exerted we may readily suppose that, as usual, their tone is weakened. In this supposition there is some probability, since it is the acquired myopia which is chiefly relieved by age. It may be some confirmation of this opinion to add, that if a short-sighted person uses a glass of too great concavity, he feels his eyes peculiarly weak; and he finds it difficult to adapt them even to the usual distance of distinct vision.

The remedy of myopia is obvious. As it is impossible to lessen by any art the convexity of the cornea, or the too great density of the humours, it is necessary to lessen the obliquity of the rays. This is effected in part by wrinkling the brow and closing the eyelids. The latter alone is not sufficient, for the arch of either lid is the segment of so large a circle, that to close the lid only would scarcely impede any oblique rays. By wrinkling the brow we depress the inner corner of each lid, and cut off the oblique rays which pass by the inner canthus, and in some, though in a less degree, those at the outer. As a concave glass, by a power opposite to that of a convex, disperses the rays, so a glass slightly concave lessens their obliquity, and prevents their union by refraction so early. To choose then the degree of concavity which will produce the requisite obliquity only will be an object of importance. It is advised, in general, to ascertain such a degree of it (marked usually by numbers from one to fourteen), as will bring the eye to the common state of perfect vision, and to select the number immediately below, because it is supposed that the use of the glass will by degrees correct the defect. This indeed would be the case had the eye the considerable power of accommodating itself to different distances, which physiologists have been so anxious to explain. We believe, however, that no change takes place by such a glass which would not otherwise be observed; and indeed we know that after many years using an inferior number, that above it has been found in the same degree of superior utility as at first. If therefore a glass must be employed during a whole life, there is no reason for abandoning the peculiar advantage of the most perfect vision which art can supply. In the constitutional myopia there is seldom any change; and even the habits of the sailor will not conquer it. We have not, however, seen any such instance, except where the cornea has been distinctly prominent; so little foundation is there in the remark, that age will flatten it.

The *presbytia* is in every respect the opposite disease. It arises from the gradual change in old age, when the vessels, no longer distended, are in part obliterated. The eye sinks, the cornea is flatter, and but that the humours apparently increase in density and refractive power, sight would decay faster. This corresponding, or rather antagonising, change seems to preserve the sight of some old persons to a very advanced period. When from the diminished refraction the picture thus falls beyond the retina, it is remedied by a convex glass, which more strongly refracts the rays, and brings the image more correctly on the retina. These glasses are neither so accurately ground nor so regularly numbered as the concave, and should be bought of an optician of character, rather than an itinerant, who purchases the glasses refused by the former. It was thought at one time advantageous to have the glasses tinged of a green or blue colour; but this defect is accompanied with some insensibility of the retina, and

to read, a strong light must be often thrown on the paper either from the sun or a large candle.

Each complaint varies in its degree, according to the state of health; but disease seems chiefly to weaken the attention, and to affect the mind rather than the organ. If any part of the change in the shape of the eye depends however on muscular action, we may readily suppose that diminished or increased irritability, or diminished tone, may have a considerable effect on distant vision.

We have spoken, through the whole of this discussion, of the retina as the seat of vision, though fully aware of the controversies which have arisen on this subject. The difficulty first arose from the insensibility of the spot where the optic nerve enters the globe of the eye; and as the choroid coat was discontinued on that part while the nerve was there, it was supposed that the coat rather than the nerve was the proper seat. We need not enlarge, however, on this point, for we know that any disease of the nerve between the eye and the brain will prevent our being sensible of visible objects; and there is no communication between the choroid coat and the brain. This would be decisive, independent of the numerous facts which prove that the state of the visual organ corresponds with that of the brain. The fact is, that in no instance do the nerves in their course show their peculiar properties or powers. They must be divested of their armature, and their evolved fibres exposed to the impressions. Much of the difficulty has arisen from the idea that the picture was essential to vision; but the impression alone is so, and the picture is an accidental, rather than a necessary, effect.

The dilatation and contraction of the iris on the diminution or increase of light is, with difficulty, explained. The contraction is not owing to the stimulus of light on the iris, for it seems to have no muscular power. The ends do not recede when divided; it is not contracted when wounded, or light thrown on it, without entering the pupil. It has been thought sufficient to remark, that its motions correspond with the stimulus on the retina. This is, however, in many respects unsatisfactory; and it has been with more reason concluded, that the dilated is the active, the contracted the passive state of the iris. The author of this opinion thinks the action of light stimulates the arteries of the reticulated coat of the retina, and the increased action of its vessels fills also those of the iris, which communicate with them. But vessels when filled are tortuous, and of course shorter in straight lines (see Exeter Essays, p. 202); the breadth of the iris is consequently less, and the pupil enlarged. We more readily acquiesce in this idea, since we think that it explains one remarkable fact, that in some cases of amaurosis the pupil contracts and dilates. This we can easily suppose may depend on the state of the vessels. If the palsy, as usually happens, is communicated to them, contraction and dilatation will not on this system occur. In contrary circumstances these alternations may be observed.

The crystalline lens, as we have hinted, grows denser, and somewhat coloured by age; and in general its transparency is preserved by warmth, and, after death, may be restored by it. Cold seems chiefly to act by coagulating the fluids. In new-born children its density is inconsiderable, and the cornea is not stretched to its due degree of convexity; so that they see imperfectly. The aqueous humour in this early period also is sometimes not transparent, and it is by no means certain that some portion of the membrana pupillaris may not remain. All these circumstances will increase the imperfection, and occasion the phenomena already noticed.

A new-born child never keeps its eyes fixed on any one object, and it will not wink if any object approaches it. It does not however follow that he does not see, but that his vision is imperfect, the reason of which has been explained.

See a Description of the Eye, and its adjacent Parts, by J. Warner; Winslow's Anatomy; Cheselden; Bell; Zinn; and the very elegant plates of Soemmering.

Artificial eyes are made of concave plates of gold, silver, or glass, stained so as to resemble the natural organ. They must be taken out to clean every night, and replaced in the morning. If no more of a diseased eye is removed than what preternaturally projects, or if the muscles are unhurt, the artificial eye will have a little motion. If it does not fit well, it irritates and inflames the other eye.

On disorders of the eyes, see St. Yves; Benedict Duddell; Remarks on the Ophthalmy, by J. Ware, and J. Warner; Bell's Surgery, vol. iii. p. 232—519; Scarpa on the Diseases of the Eye.

In botany *oculus* means the bud of a plant, and also a name affixed to many herbs supposed to resemble the eye of some animal.

O'CULUS. See COLIQUAMENTUM.

O'CULUS BOVI'NUS and ELEPHANTINUS. See PROPTOSIS.

O'CULUS BO'VIS. See BELLIS MAJOR.

O'CULUS BU'BULUS. See PROPTOSIS.

O'CULUS CHRI'STI. See HORMINUM SYLVESTRE.

O'CULUS GE'NU. See PATELLA.

O'CULUS LA'CHRYMANS. See EPIPHORA.

OCYMA'STRUM. See OCIMASTRUM.

OCYMA'STRUM VERRUCCA'RIUM. See CIRCEA.

OCYMOI'DES, (from *ωκυμον, basil*, and *ειδος, likeness*), *lychnis sylvestris, sive aquatica purpurea simplex.* RED WILD CAMPION, *silene armeria* Lin. Sp. Pl. 601; grows in hedges, and flowers in summer. The seeds are cathartic, but it is not at present employed. See Raii Historia.

O'CYMUM, *ωκυς, swift*, (from its sudden growth). *Basilicum.* OCYMUM BASILICUM Lin. Sp. Pl. 833. *Ocymum* is chiefly used for improving the flavour of sp. volatilis aromaticus.

O'CYMUM CARYOPHILLA'TUM, *minimum, vulgarius, medium, citratum.* See BASILICUM.

ODAXI'SMOS, (from *οδυς, a tooth*, and *δακνυω, to bite*). A biting sensation, pain or itching in the gums. See DENTITIO.

ODONTAGO'GOS, (from *οδους*, and *αγω to draw*). See DENTAGRA.

ODONTA'GRA, (from *οδυς*, and *αγρευω, to seize*).

ODONTA'LGIA, (from *οδυς*, and *αλγος, pain*). The TOOTH-ACH, a disease arranged by Cullen in the class *pyrexiæ*, and order *phlegmasiæ*, which he defines a rheumatism or pain of the jaws from carious teeth. The causes are those of caries in the body of the tooth, which frequently arises in the little cavities between the

fangs; often from tartar at the collum of the tooth, depressing the gum, and admitting the air; sometimes from a little erosion of the enamel where it is thinnest, near the collum.

In these pains the nerve may be sometimes destroyed by a hot iron, rendered torpid by essential oils, or by camphor and opium united.

The lady bird, coccinella septem punctata, and indeed all the species of coccinellæ, are said to relieve tooth-ach, if bruised between the finger and thumb, and applied to the tooth or rubbed on the gum.

If the external aperture is smaller than the carious cavity, after clearing away the carious matter the access of air may be impeded by stuffing of gold or silver leaf, or tin foil.

The more general remedies are blisters behind the ear, on the affected side; burning the edge of the helix of the ear, as a branch of the fifth pair of nerves, which supplies the teeth, are lost on the external ear; constantly holding lukewarm water, or milk and water in the mouth, with or without opium; or large doses of opium internally. It is generally recommended to extract the tooth if carious, but no advice can be more injudicious. A carious tooth is certainly pained by accidental colds, but in such cases every sound tooth would have equally suffered; and those who adopt such rash, indiscriminate practice, have been known to draw each tooth in succession, and then to suffer equally in the gums. On the contrary, when the nerve is accustomed to the access of the air, it will continue carious for many years without pain, and be truly useful.

When odontalgia is connected with rheumatism, or gout, which sometimes happens, the remedies of either should be employed.

In extracting a tooth the force may be directed on either side, except in drawing the dentes sapientiæ of the lower jaw, and then the direction of the force should be on the outside, for the jaw within is so thin that it may be easily splintered. An instrument which would raise the tooth without any lateral force, is a great desideratum; and the second Monro, for many years, exhibited one in his class, but it has probably failed, since it is not employed. On pulling the tooth, the force exerted should be firm and steady, not violently rapid; and if the instrument slips; it should be applied on the opposite side. When fairly loosened, it may be raised by the fingers or forceps. The common precautions and the usual management are sufficiently known. See Bell's Surgery, vol. iv. p. 248; Dr. Cullen's First Lines, edit. 4. vol. ii. p. 38; also DENS.

ODONTIA'SIS, (from οδοντιαω, *to put forth the teeth*). See DENTITIO.

ODO'NTICA, (from οδυς). Remedies for pains in the teeth.

ODONTIRRHŒ'A, (from οδυς and ρεω, *to flow*). Bleeding from the socket of the jaw after tooth-drawing.

ODO'NTIS and ODONTI'TIS, (from οδους; because the decoction was supposed to relieve tooth-ach). *Lychnis, flos cuculi* Lin. Sp. Pl. 625, β.

ODONTOGLY'PHON, (from οδυς, and γλυφω, *to scrape*). See DENTISCALPIUM.

ODONTOI'DES, (from οδυς, and ειδος, *form*). The tooth-like process of the second vertebra of the neck.

ODONTOPHY'IA, (from οδους, and φυω, *to grow*). See DENTITIO.

ODONTOTRI'MMA, (from οδους, and τριβω, *to wear away*). See DENTIFRICIUM.

ODORA'TUS, (from *odoro*, οζω, *to smell*). See OLFACTUS.

ODORI'FERÆ GLA'NDULÆ. Sebaceous glands under the prepuce, behind the labia and in the axilla, denominated from their odour resembling musk. Dr. Hunter says he never could discover the orifices of these in the axilla, therefore he supposes the discharge to be from innumerable, small, imperceptible pores.

Œ'A, (from οιω, *to bear*, from its fertility). See SORBUS.

ŒCONO'MIA, (from οικος, *a house*, and νομος, *a law*, or *rule*). Hippocrates uses this word to express the management of a sick person; and it is the title of an Hippocratic lexicon added by Fœsius to his edition of the works of the Coan sage. The animal economy is the conduct of nature in conducting the animal process, and preserving animal bodies.

ŒDE'MA, (from οιδεω, *tumeo*). See TUMOR; any inelastic tumour resembling anasarcous swellings. See ANASARCA.

ŒDE'MA ERYSIPELATOI'DES, *erysipelas bullatum, inflammatorium*. An œdematous tumour, white, pellucid, and accompanied by heat.

Dr. Kirkland, in the first volume of his Inquiry, describes an inflammatory œdema which attacks suddenly, sometimes accompanied with an erysipelas, or more commonly a simple inflammation of the skin. He considers œdema as always local.

As soon as the swelling begins to subside, a bandage, or a laced stocking, may be applied, and its tightness gradually increased. Small doses of calomel may be given at night, and the following morning a saline purgative. The bark will be ultimately useful, but the diuretic salt should be at first added. Kirkland's Medical Surgery, vol. i. p. 468.

ŒDE'MA LACTEUM. See LYMPHÆDUCTUS.

ŒDEMATO'DES, (from οιδημα). See ŒDEMA.

ŒDEMOSA'RCA, (from οιδημα, and σαρξ, *flesh*); *uteriformis abscessus*, of a more solid consistence than œdema. Severinus.

ŒLSNI'CHIUM and ŒLSNI'TIUM. *Tysselium Plinii, apium sylvestre, selinum sylvestre* Lin. Sp. Pl. 350. MILKY-PARSLEY. The root is perennial, large, and the whole plant full of milky juice. The leaves resemble those of the ferula; the seed is oval, flat, large, striated, and marginated. Another species of selinum, the s. palustre, agrees with this plant in its pungency and acrimony: the roots of both are aperient and detergent; their milky juice, it is said, resembles scammony. See Raii Historia.

ŒNANTHA'RIA, (from οινος, *wine*, and ανθος, *a flower*). SWEET-SCENTED OINTMENTS. Their appellation is not derived from having œnanthe as one of their ingredients, but from their fragrance, or on account of the wine and lilies which are ingredients in them.

ŒNA'NTHE CHÆROPHY'LLI FO'LIIS, (from οινη, *vitis*, and ανθος, *flos*, because its flowers smell like the vine), *œnanthe petroselini folio venenosa, œnanthe*

cicutæ facie lobelii, filipendula cicutæ facie. HEMLOCK DROP-WORT. DEAD-TONGUE, *œnanthe crocata* Lin. Sp. Pl. 365.

The root is long, thick, tuberous, extremely succulent; and, on exposure to the external air, the juice becomes yellow; the stalk striated, round, branched, of a yellowish red colour, about three feet high; the leaves of a pale green, winged or doubly winged; the folioles wedge-shaped, smooth, streaked, and jagged at the edges; the flowers very small and white, disposed in umbels, placed among the principal stalks, with short ones at the subdivisions; each flower composed of five petals; some of them are bent inward, and heart-shaped; tips, purple or brown; fruit-stalks angular, scored; the general fence not always present; the seeds striated on one side, and dented on the other. It is found on the banks of rivers; is perennial; flowers in June or July.

The whole of this plant is poisonous, and the root is said to be the most virulent of all our indigenous vegetable poisons, producing epileptic symptoms, &c. See VENENUM. The general effects of this poison are convulsions, locked-jaw, giddiness, madness, loss of hair and nails, violent heat in the throat and stomach, vertigo, sickness, and purging.

This herb hath been mistaken for wild celery, water-parsnep, smallage, and for Macedonian parsley. The root hath no ill taste; and is therefore seldom suspected.

In Pembrokeshire it is called five fingered-root, and is used in cataplasms for whitlows, &c.; in Cumberland, dead-tongue, and applied in cataplasms to some diseases of horses. An infusion of the leaves, or three tea-spoonfuls of the juice of the root taken every morning, is said to have been effectual in curing obstinate cutaneous diseases, but not without violent effects. It is injurious to dogs, but goats eat it with impunity.

For the treatment of the effects of this root, see VENENUM.

Withering's Botanical Arrangements. Wilmer's Observations on Poisonous Vegetables. London Medical Journal, vol. ii. p. 40, &c. It is the appellation also of water-hemlock, and a species of thalictrum.

ŒNA'REA, (from οιναρα, *the cuttings of vines*). The ashes prepared of the twigs of vines.

ŒNELÆ'UM, (from οινος, *wine*, and ελαιον, *oil*). A mixture of oil and wine.

ŒNOGA'LA, (from οινος, and γαλα, *milk*). A mixture of wine and milk; or, wine as warm as new milk.

ŒNO'PLIA, (from οινος, *wine*); *nabea, paliurus, nap, napeca,* GREAT JUJUBE, is produced in Egypt and Crete; and is astringent before it is ripe. The fruit is eaten as a delicacy in Egypt and Turkey; and its juice resembles that of the grape.

ŒNUS, (from οινος, *vinum*). WINE.

Œ'NUS A'NDRIUS. GENEROUS WINE, or wine of the island of Andros.

Œ'NUS A'NTHINOS. FLOWERY WINE; wine impregnated with flowers, in which sense it is an epithet for the cyceon. Galen.

Œ'NUS ANTHO'SMIAS, (from ανθος, and οσμη, *a smell*). SWEET-SCENTED WINES.

Œ'NUS APODÆ'DUS. Wine in which the dias or tæda hath been boiled.

Œ'NUS APEZE'SMENUS. A wine heated to a great degree, and prescribed among other things, as garlic, salt, milk, and vinegar.

Œ'NUS DEU'TERUS. Wines of the second pressing.

Œ'NUS DIACHEO'MENUS. Wine diffused in large vessels cooled, and strained from the lees, to render it thinner and weaker. Such wines are called *saccati*, from the bag through which they are strained.

Œ'NUS GALACTO'DES. Wine with milk, or wine made as warm as new milk.

Œ'NUS MA'LACUS, sive MALTHACUS. Soft or weak and thin wine, opposed to strong; or mild, in opposition to austere.

Œ'NUS ME'LICHROOS. Wine in which honey is mixed.

Œ'NUS ŒNO'DES. Strong wine.

Œ'NUS SIRÆ'OS. See SAPA.

Œ'NUS STRAPHI'DIOS LEU'COS. White wine made from raisins.

Œ'NUS TETHALA'SMENOS. Wine mixed with sea-water.

ŒNOSTA'GMA, (from οινος, and σταζω, *to distil*). See VINUM ADUSTUM.

ŒNO'THERA, (from its dried root smelling like wine). See LYSIMACHIA.

Œ'PATA. See ANACARDIUM.

ŒSOPHAGÆ'Æ ARTE'RIÆ, (from *œsophagus*), rise anteriorly from the aorta descendens, and are distributed to the œsophagus. Sometimes the uppermost œsophagæa produces a bronchial artery. Occasionally there is one only.

ŒSOPHAGÆ'US. See ŒSOPHAGUS.

ŒSOPHAGISMUS, (from οισοφαγος; *the gullet*). IMPEDED DEGLUTITION, or spasm of the œsophagus.

ŒSO'PHAGUS, (from οισω, the future tense of φερω, *to carry*, and φαγω *to eat*, because it carries the meat into the stomach); *gula, læmos, laucania;* the GULLET is the contracted continuation of the pharynx, the last part of the fauces, called by the Latins *infundibulum*. Its anterior part is connected with the root of the tongue, the os hyoides, and the larynx; it closely adheres behind to the vertebræ of the neck, and is moved by various muscles, which elevate or dilate the pharynx, and by others which shut it. One pair of these muscles, arising by three origins from the os hyoides, the cartilago cricoides, and the cartilago thyroides, totally surrounds the pharynx, called *œsophagæus*, the sphincter of the œsophagus. The others are called *cephalo-pharyngæus, spheno-pharyngæus,* and *stylo-pharyngæus*. The œsophagus first runs straight between the aspera arteria and the vertebræ of the neck and back, but turns to the right about the fifth vertebra, and to the left about the ninth; then proceeding through the middle of the thorax and the muscular part of the diaphragm, behind the little lobe of the liver, it terminates in the superior orifice of the stomach. The œsophagus consists of four coats, the outermost coat is a thin, vascular, cellular membrane originating from the pleura, uniting the gullet to the adjacent parts. The next coat is muscular, furnished with orbicular fibres, and above these with longitudinal ones. The third is

nervous, common to the mouth and fauces, and extending a little way within the stomach; it is glandular, and the glands secrete a mucus. The innermost coat is covered with mucus, is villous, and the orifices of the glands are numerous. The cuticle lines the *œsophagus*, but is too thin to be demonstrated. Besides the glands mentioned, the dorsal about the fifth vertebra of the back, adhering to the gullet, and the thyroid gland, situated between the thyro-cricoid cartilage and the œsophagus, are enumerated as belonging to this organ. Its upper part receives arteries from the internal carotids, its middle from the aorta and intercostal, and its inferior part from the gastric arteries. Veins from the jugulars, from the vena sine pari, and from the coronary veins of the stomach, return the blood in the respective portions. The nerves proceed from the par vagum. See Incapability of Swallowing, under DEGLUTITIO, INFLAMMATIO ŒSOPHAGI.

Spasms of the œsophagus are symptoms of hysteria only, and accompanied by all the peculiar appearances of that proteiform disease.

Spasms of the pharynx are distinguished from a paralysis or relaxation of the canal, by the difficulty of swallowing, being in the latter continual, in the former intermitting: in paralysis solids are more easily swallowed than liquids; in spasms the difficulty of swallowing solids and liquids is equal. The latter are distinguished from inflammation by the absence of swelling, redness, heat in the fauces, thirst, and fever; from tumours and excrescences, by cold liquids exciting greater difficulty than warm, and by pains in the scapulæ.

Spasms of the pharynx, from acrid substances, threaten an inflammation; from hysteric passions, an apoplexy. Etmuller observes, that a difficulty of swallowing from a convulsion, in wounds, is dangerous; and Hippocrates, that a sudden contortion of the neck, obstructing deglutition, without any swelling in fevers, is mortal. Spasms are removed by antispasmodics and anodynes, mixed with discutients, both given internally, and applied externally. The more violent the constriction, the more necessary are external remedies. But the most active anodynes internally must not be omitted; and should swelling, with a livid colour of the face, come on, and there be no time for the operation of a blister, leeches opening the temporal artery or jugular vein are necessary. The bowels must in every instance be kept open, and acrid poisons, if such be the cause, must be diluted and sheathed by mucilages, oil, milk, &c. Blisters, or antispasmodics applied to the spine of the neck, are often serviceable; but, except as a symptom of hysteria or apoplexy, the disease is peculiarly rare.

In spasms of the lower gullet externals are best applied to the spine, with which the œsophagus is immediately connected. If the spasms are so violent that the patient cannot swallow, he must be supported by nourishing clysters.

See Hoffmann's Practice of Physic, translated by Lewis, vol. ii. p. 147, &c.; Percival's Essays, Medical and Experimental, vol. ii. p. 141, &c.; London Medical Transactions, vol. i. p. 165, vol. ii. p. 90.

ŒSTRUM. See BOVINA AFFECTIO.

ŒSTRUM VENERIS. See CLITORIS.

ŒSTROMA'NIA, (from οιστρος, *the pudenda of a woman*, and μαινομαι, *to rage.*) See FUROR UTERINUS.

ŒSYPE, (from οις, *a sheep*, and ρυπος, *sordes*). The greasy sordes of wool.

O'FFA A'LBA HELMO'NTII. If rectified spirit of wine be poured gently into a fully saturated volatile alkaline solution, down the side of a glass, an opake dense coagulum is formed, which, on gently shaking, becomes a consistent mass, separating, by warmth, into a solid and fluid part: the solid part is called *offa alba*, and is supposed to be a volatile soap, but is only the excess of the salt, which the united spirit and water cannot dissolve.

OFFICINA'LIA. OFFICINALS; an appellation given to such medicines, whether simple or compound, as are required to be constantly kept; or to such vegetables as are selected for medicinal purposes.

OFFUSCA'TIO, (from *obfusceo, to darken*). See AMAUROSIS.

OLA'MPI. The name of a gum which resembles copal, brought from America. It is sweet to the taste, and somewhat astringent, but not used in this country.

OLCACA'TZAN. See CHINA OCCIDENTALIS.

O'LEA, seu OLI'VA, (from ελαια), the OLIVE-TREE, *cotinus, olea Europea* Lin. Sp. Pl. 11, is an evergreen, with oblong, narrow, willow-like leaves, and monopetalous whitish flowers, cut into four sections, followed by clusters of oval black fruit, containing, under a fleshy pulp, a hard rough stone. It is a native of the southern parts of Europe, and bears the ordinary winters of our climate. The olives are called *drupas, drypa*.

The fruit hath a bitter, austere, disagreeable taste; but when pickled proves less ungrateful, and is supposed to promote an appetite, assist digestion, and attenuate viscid phlegm. The Lucca olives are the smallest, and mildest; the Spanish, the largest, and most acrid. Those of a middling size, brought from Provence, are generally most esteemed; but the principal consumption of this fruit is for their oil, which, when taken from the unripe fruit, it is called *omotribes omphacinum*. The oil for use is procured when the fruit is ripe. The purer and finer oil is procured by gentle pressure; and inferior sorts, on heating the residuum, and pressing it more strongly. The best olive oil is of a bright pale amber colour, bland to the taste, and without smell, becoming rancid by age, particularly in a warm situation; by cold, at the 38th degree of Fahrenheit's thermometer, it congeals, and does not become rancid at the freezing point of water. All the mild expressed vegetable oils are nearly of the same nature; but the most fluid, particularly the oil of olives, and of almonds, are most commonly directed for internal use. See AMYGDALÆ; and GROSS and EXPRESSED OILS, under OLEUM.

OLEA'MEN, (from *oleum, oil*). A thin liniment composed of oils.

OLEA'NDER, (from its resemblance to the *olive-tree*). See NERION.

OLEA'STER, (from the same). The WILD OLIVE, *elæagnus, agrielæa*, differs from the garden olive only from the want of cultivation.

OLE'CRANON, (from ωλενη, *cubitus*, and κρανον, *the head*). The ELBOW; *ancon, pechys*, is the largest of the two apophyses at the upper end of the ulna, ending in a rough tuberosity and an obtuse point. The tuberosity makes the corner of the elbow, called *acrolenion*; and the point is lodged in the posterior cavity of

the lower extremity of the os humeri, when the fore-arm is extended.

O'LENE, (from ωληνη, *the cubit*). See Cubitus.

OLEOSA'CCHARUM, (from *oleum*, and *saccharum*). Essential oils, ground with eight or ten times their weight of sugar, become soluble in water, and may be diluted to any assigned degree. These oleosacchara may be kept in well-stopped bottles for making extemporaneous distilled waters. Mucilages render oils miscible with water into a milky liquor; and they dissolve in a little more than their weight of rectified spirit of wine. The extemporaneous waters made in this way are not so grateful as those that are distilled, as the more volatile finer portion escapes.

O'LEUM, (from *olea*, a name first confined to the oil expressed from the olive, but now applied to many other substances). Oil. Oils are animal, vegetable, and mineral. Animal oil is the fluid fat of animals, and all animal substances yield it by distillation. Vegetable oils are procured by expression, distillation, or boiling; the mineral spontaneously, and by distillation.

1. *Fixed oils* are usually liquid, or become so in a moderate temperature. They are combustible, insoluble in water and alcohol, mild to the taste, unctuous to the touch, without smell, and their boiling point is usually above 600°. Oils, or what are styled fat, expressed, oils, are procured from the seeds of plants; in the animal kingdom, from the adipose membrane, the cells and cavities of bones, and the livers: it is contained in a small proportion in the egg. Olive oil, taken as a standard, was found by Lavoisier (Journal de Physique, Juillet, 1787) to contain, in 100 parts, 79 of carbone, and 21 of hydrogen. It is usually yellowish or greenish, and of the specific gravity of about 0.9278; does not unite with water, unless assisted by some mucilaginous substance, and then it is a mixture only, which, on standing, separates. When distilled it seems in part decomposed; water and sebacic acid, if the oil be from an animal, are formed; and the oil in the receiver no longer possesses its former qualities. It was once called *oleum philosophorum*.

Since the time of Lavoisier, however, the Dutch chemists, Deiman, Troostwyk, &c. have made some further advances in the analysis of oil. When alcohol is decomposed by the sulphuric acid at high temperatures, or when alcohol or ether are passed through a red-hot earthen tube, a gas is obtained, styled the *heavy carbonated hydrogen*. This gas is nearly as heavy as common air, unaffected by water, of a fœtid odour, burning with a strong compact flame, like resin. Its most singular property, however, is, that when combined with oxyginated muriatic acid gas, oil is obtained. They, therefore, called it *olefiant gas*. The carbone, in this gas, is in excess, and the oxygen seems to precipitate the superabundant portion; for, on igniting them, carbone is always separated. When the olefiant gas is passed through an ignited tube the hydrogen seems to be separated, and it will no longer produce oil, though it is usually said that the change is produced by the loss of the carbone. With pure alkali oils unite, and produce that useful concrete, soap.

If exposed to cold they lose much of their fluidity, sometimes at a very moderate temperature. In warm air, they become thin, rancid, and acrimonious: in this state, instead of allaying irritation they occasion it. When this acrimony appears in the kernels, it is covered by the remaining mucilage, and the emulsion becomes sour, for the rancidity depends on the evolution of the sebacic acid. In a degree of heat which will occasion a small evaporation from these oils, a pungent acid vapour arises; and when cool they are found to have acquired a greater degree of consistence than before, with an acrid taste. In a heat approaching to ignition, in close vessels, the oil rises in an empyreumatic state, leaving a black coal behind.

In order to obtain these oils, the seeds which contain them must be ground or powdered small, included in proper bags, wrapped in hair-cloths, and committed to the press, by which the oil is forced out. To facilitate the expression, it is usual to warm either the press or the plates, or to heat the substance to be pressed. But heat occasions rancidity, and should only be admitted when intended for immediate use. Olives, almonds, linseed, rape, and mustard seed, now chiefly employed, yield an oil not essentially different as a medicine, and each is an emollient and demulcent. For this purpose oil is prescribed in some coughs, catarrhal affections, and erosions, successfully used in worm cases, in nephritic pains, spasms, colics, constipation of the bowels, &c. and has been recommended in cases of canine madness. (See Hydrophobia.) Externally, it is used in bites and stings of various poisonous animals, burns, and tumours, or mixed in liniments, injections, clysters, and poultices. Rubbed over the body, it has been thought beneficial in dropsies, particularly in ascites. The oily clyster consists of two ounces of oil to a pint of barley water; and if intended as a laxative, two ounces of Glauber's salt are added.

Four ounces of oil, with two drams of tincture of opium, are thrown up as a clyster in spasmodic affections of the bladder and the neighbouring parts; sometimes the opiate, instead of the oil, is united to a dilute solution of starch. The compound oily liniment is composed of two ounces and a half of olive oil, an ounce of oil of turpentine, with forty-five drops of oil of vitriol. The acid must be gradually added to the other ingredients in an open vessel. In chronic affections of the joints, in debility from sprains and bruises, this is said to be an efficacious, but it is not an elegant, application.

Though expressed oils may be combined with water, by the intervention of gum or mucilage, yet they do not unite with the gummy mucilaginous parts of vegetables. Expressed oils are, therefore, as we have said, similar, whatever may be their source. They may, however, be tinged by vegetable matters of almost all colours; and, in making the officinal oils by decoction, in order to have the colour clear and strong, the oil should be strained as soon as it hath acquired a sufficiently deep hue, and then boiled until no aqueous vapours exhale. If the water is not wholly evaporated the oil will have a dark colour, and be soon mouldy; and if the leaves are boiled after they become crisp, they occasion a disagreeable blackness. What are styled *fat oils* differ only from the common expressed oils by containing a larger proportion of mucilage.

2. *A gross sebaceous matter*. From the kernel of some fruits, as of the cocoa-nut, a substance of a butyraceous consistence is obtained. It is best extracted by boiling the nut in water, when it separates, rising to the surface, and resuming its proper consistence as the liquor cools. These substances have the same general properties with expressed oils, but are less disposed to

become rancid than most of the common fluid oils. It is supposed that their thicker consistence is owing to a larger admixture of an acid principle, most probably of oxygen; for by fire they yield a vapour more sensibly acid than the fluid oils; and these by the admixture of concentrated acids are reduced to a thick and a solid mass.

Oils of this kind are styled drying oils, because they dry without losing their transparency. Linseed oil possesses this quality in the greatest degree; but it is usually increased by adding litharge, which, when boiled with it, is in part reduced to its metallic state. From hence, and from the effect of acids, we conclude that the change consists in the addition of oxygen. The highly oxygenated metallic salts, as the hydrargyrus muriatus, will have a similar effect. The thick opaque whiteness produced by the access of air, in what are styled fat oils, as those of olives, almonds, rape-seed, and ben, depends on a similar addition; for it is immediately produced on the addition of oxygen gas. (Senebier.)

Oils in different disguises constitute a great part of our nourishment; but it is not easily digested in a separate state, nor when intimately combined with mucilage in the kernels of nuts. Oil is used internally as a DEMULCENT, and its operation is explained under that head. Many difficulties attend the explanation of its effects when carried into the system. Yet the German physicians, particularly De Haen, give it freely in inflammations of the lungs; and we have thought soap, which must be considered as a form of oil, useful in peripneumony. In Switzerland it is used to destroy tænia; and as a gentle laxative it is employed in preference to others in nephritis, in colics, and constipation of the bowels.

The external use of oil as a medicine is of very high antiquity. It was a part of the complicated system of bathing, as employed by the ancients, either as a remedy or for the preservation of health. Bathing was of peculiar importance, since they were unacquainted with linen; and their woollen garments were not very regularly or very nicely cleaned. The peculiar advantages of oily applications, independent of the friction employed, except in giving softness and flexibility to the limbs, are not easily ascertained. After excercise they were undoubtedly refreshing, and prevented stiffness; but as preservatives they seem to have been chiefly useful in preventing the too copious perspiration. When we compare all the directions for anointing, we can see no other point in which they meet; and this, in a climate so warm, after violent exercise, and the relaxation of the warm bath, must have been an object of importance. The use of oil as an external remedy was introduced by Prodicus, more probably Herodicus, the inventor of gymnastics; and in fevers it seems to be directed to the purposes mentioned. We have not the works of this ancient author, but find copious directions for its use in Pliny. It still seemed an appendage to the bath; for, in slow fever, the oil was used in cold water; in the cold fits, united with warm substances. In general it was supposed to strengthen and to fortify the body against the access of cold. So strong was the ancient opinion of its utility in this respect, that to defend the body *intus vino, foris oleo* was the frequently repeated maxim for prolonging life.

Independent of its subsidiary aid to the balneum, it was used by the ancients, in many diseases, applied externally, and often rubbed along the spine; in palsies, in lethargy, in tetanus, in dropsy, and in ephidrosis. In hydrophobia the patients were thrown into the cold bath, and then into oil; in melancholia, into a bath of water and oil. It was supposed to allay irritation, and we still retain its use in burns, in bites of insects, in prurigo, &c.; but the ancients employed it to allay pain after severe operations, to soften the exuberant callus of bones, to remove the pain attending luxations or wounds. St. Luke, whom we now quote as a physician, describes the good Samaritan as pouring oil and wine into the wounds of him who fell among thieves, x. 34.

When luxury increased, this salutary custom was, as usual, abused, and the oil was combined with the most costly perfumes. The simplicity of ancient manners consigned, without a blush, the fatigued body of the traveller to the hands of a female; but this custom was afterwards extended, and the bath became the scene of wantonness and lust. In the progress of empire, of science, and the arts, eastward, the use of oil might have been carried, unless the same necessity which suggested it in Greece introduced it also in Indostan; though the cotton dress would, in a great degree, render the use of the bath less necessary.

In the east the use of oil, however, seems of considerable antiquity; and, besides the more obvious effects of giving sleekness to the skin, and flexibility to the limbs, it is supposed to assist the strength, increase the secretion of fat and of the semen, as well as to prolong life. The Hindoos use oil to cure fevers, epilepsy, mania, dropsy, worms, and cutaneous diseases; to relieve pains from bruises, and the colic; to prevent bad effects from the bites of mad animals, and of serpents.

Modern practice continues the application of oil to allay irritation, particularly the pains felt in old fractures, or wounds, on the change of weather, as advised by Rosenstein; and in irritations of the genital organs, as recommended by Hufeland.

Oil, we have said, was used externally by the ancients in low fevers, and the practice continued in Egypt to the time of Prosper Alpinus. On this foundation it may have been recommended in the plague, in which it has been said to be of essential use. Its advantages, however, arise not from the oil, but from the friction; for, unless continued so as to excite perspiration, it is of little utility. In dropsies also the oil seems only to assist the friction, by preventing the excoriation, which might otherwise soon occur. In tetanus, if ever useful, it is also perhaps in consequence of the friction and the perspiration excited, by means of the friction.

In the bites of insects it seems to relieve pain, but in those of serpents Fontana found it inefficacious; nor are the experiments of Mr. Baldwin on its effects in the bites of scorpions, or rats, unexceptionable. In hydrophobia it has been recommended on the authority of an ancient Greek manuscript; and, though we have received accounts of cases in which it seemed to relieve the spasms, it has not been found to cure the disease.

That oil may be useful in securing a person from contagion appears from evidence apparently more decisive. From very different sources we find that oil porters, oil sellers, tallow chandlers, and tanners, are unusually exempt from the plague, and the worst epide-

mics. It has been supposed that frictions with oil are nutritive, as they are said to increase obesity: butchers and cooks are proverbially fat. This effect has, however, been doubted, sometimes denied.

3. *Essential oils* are obtained only from the odoriferous parts of vegetables, since on these the odour, often the pungency, and other active powers of the subject depend. They are consequently called essences and essential oils. These oils are very combustible, boil nearly at the same point as water, evaporate without leaving a stain on paper, unite with different proportions of rectified spirit of wine, and even water will imbibe some more subtile portion, and be impregnated with their flavour. By the mixture of sugar, gum, &c. they unite with water in a transparent fluid. Digested with volatile alkalies the colour often varies, and some of the less odorous acquire a considerable degree of fragrance, while fixed alkalies universally impair their odour. Their medium specific gravity is 0 9553, and they seem to contain a larger proportion of hydrogen than expressed oils. In the heat of boiling water these oils totally exhale, and on this principle they are readily extracted; for an aqueous fluid is only volatile in this temperature, from which part of the oil is easily separated. In their resolution by a burning heat they differ little from expressed oils. From continued exposure to a warm air, instead of growing thin, rancid, and acrimonious, they gradually become thick, hardening at last into a solid, brittle, concrete, sometimes into a saline substance, with a remarkable diminution of their volatility, fragrance, and pungency. (See GAUBII ADVERSARIA.) The mixture of a concentrated acid instantly produces a similar change.

The oils expressed from aromatic substances differ from those obtained from olives, almonds, &c. They retain a portion of the aromatic matter of the subject; and a nutmeg yields, upon expression, an oil impregnated with the flavour of the spice, and a purgative oil is expressed from the seeds of the ricinus. The rinds of oranges, lemons, and citrons, yield, by expression, essential oils nearly similar to those obtained from them by distillation. They are most conveniently obtained by rubbing a piece of lump-sugar on the surface of the fresh peels: the vesicles in which the oil is contained are thus burst, and the sugar imbibes it.

Moist essential oils are drawn by distillation, adding a sufficient quantity of water, to prevent burning, in which the subject is macerated a little before the distillation: the oil comes over with the water, and either floats on its surface, or falls to the bottom. The water employed in distilling essential oils imbibes some portion of them; so that the saturated water of former distillations may be advantageously employed instead of common water in future operations, since this portion of the oil cannot be separated.

Essential oils are very often adulterated. If with an expressed oil, the fraud is discovered by adding a little rectified spirit of wine, which dissolves the essential oil, and leaves the expressed untouched. If a heavier essential oil be dropped into water, after a brisk agitation, it falls to the bottom, and the expressed oil swims at the top; or if evaporated in a silver spoon, the essential oil will leave the expressed behind. If adulterated with rectified spirit of wine, when dropped into water, or into spirit of turpentine, a milkiness will appear on the mixture being shaken. If an essential oil is mixed with a cheaper one, a drop rubbed on the hand, and held to the fire, will leave the odour of the added oil sufficiently distinct behind. The added oils are usually those of turpentine, which are also discovered by a milkiness when dropped into spirit of wine.

Essential oils, medically considered, agree in the general qualities of pungency and heat, but differ according to the subjects from which they are obtained. Some of these are used to correct the irritating griping quality of resinous purgatives, in which respect they are useful, as general stimulants, as carminatives, and sometimes light astringents. These oils may be administered with powders, pills, boluses, or electuaries.

4. *Concrete essential oil.* Some vegetables, as the roots of elecampane, yield a substance possessing the general properties of essential oils, but of a thicker and sebaceous consistence. It is equally volatile and subtle with the fluid oils; exhales equally in the heat of boiling water, and concretes upon the surface of the collected fluid. The exhalation of this matter, and its concreting again, without any separation, into a fluid and a solid part, distinguishes it from essential oils that have been thickened or indurated by age or by acids. See Hoffmann's Observationes Physico-chemicæ, lib. i.; Neumann's Chemical Works.

OLE'UM AMYGDALA'RUM. See AMYGDALÆ.

OLE'UM ANIMALE is an empyreumatic oil from animal substances, usually prepared from bones or hartshorn, refined by repeated distillations till it is nearly colourless. It always retains some smell, which is pungent, but not unpleasant; and is used chiefly as an antispasmodic, sometimes as a diaphoretic. It was first introduced by Dippel, and the preparation has been greatly improved by Model, a Russian chemist. The dose is from fifteen to thirty drops, and it is given in convulsions, the hooping-cough, and similar complaints. Externally it has been employed in bruises; and the *British oil*, a quack remedy, is of this kind. By keeping it acquires its former unpleasant qualities, probably by attracting azot from the air.

OLE'UM CAMPHORATUM is the camphor in a liquid form, exuding from the trees which produce it. (See CAMPHORA.) It may be used for all the purposes of camphor; but was first introduced as an external application to cure gout. It seemed to relieve the pain, which, however, returned to another part; and had it not done so, all the inconveniencies of repelled gout would probably have followed.

OLE'UM JECORIS ASELLI. The LIVER OF THE COD-FISH, is procured by the process of putrefaction, when it spontaneously separates. It is imported in barrels from Newfoundland, and was first, we believe, prescribed by Dr. Percival in the Manchester infirmary, in doses from one to three table spoonfuls. It was given for chronic rheumatism; and, though highly nauseous, was found so successful, that patients petitioned to be allowed the same remedy. Dr. Bardsley has lately added his testimony to its salutary virtues in this complaint; and we have, we think, seen chronic rheumatisms yield to a steady constant use of this oil which had resisted every other remedy. By habit the palate is less offended by its taste.

OLEUM MACIS. See NUX MYRISTICA. As an external application it is said to be anodyne.

OLE'UM MALABATHII. An oil said to be procured

from the leaves of the laurus cinnamomum; but what is brought to us from India seems to be flavoured by cloves, if not drawn from them.

OLE'UM NEROLI. An oil procured from the flowers of the Seville orange tree, used only as a perfume.

OLE'UM OLIVA'RUM. See OLEA, or OLIVA.

OLE'UM ORIGANI and SASSAFRÆ. Two acrid essential oils, often serviceable in relieving tooth-ach. They appear to act as narcotics.

OLE'UM PALMÆ. See PALMÆ OLEUM.

OLE'UM PAPYRI. A fetid empyreumatic oil, used for the same purpose. A sheet of paper is rolled up in a small cylinder, and set on fire at one end, while the other is enclosed in a cavity formed by two tea-cups. When the paper is consumed, and the apparatus cold, a dense oil is found in the lower cup.

OLE'UM PETRÆ. See PETROLEUM.

OLE'UM RICINI. See CATAPUTIA.

OLE'UM SINAPEOS. The oil of mustard is perfectly mild. What is usually styled the *essence of mustard* is only the oil of turpentine combined with spirit of wine, with the addition of camphor, opium, and a small proportion of the flour of mustard.

OLE'UM SULPHURATUM. The modern appellation of BALSAM OF SULPHUR, q. v.

OLE'UM SYRIÆ. A fragrant essential oil obtained from the *pinus balsamea* Lin. Sp. Pl. 1421.

OLE'UM TEMPLINUM. See ABIES.

OLE'UM VINI. An oily fluid which arises in the distillation of ether, after the finer fluid has come over. A proportion of this oil gives Mr. Tickell's ether its distinguishing qualities.

Oleum is a term for the product of several substances, viz.

O'LEUM BALSAMI. See BALSAMUM.

O'LEUM SA'LIS. See CIRCULATUM.

O'LEUM MY'RRHÆ per DELIQ. See MYRRHA.

O'LEUM ANTIMO'NII. See ANTIMONIUM.

OLFA'CTORII NERVI, (from *olfactus*), the OLFACTORY NERVES, were formerly called *processus mammillares.* They are the first pair of nerves from the brain, and seem to approach as they pass towards the crista galli, where they divide into many small filaments, which pass through the foramina of the os ethmoides. On these nerves no covering from the dura mater can be traced. See OLFACTUS.

OLFA'CTUS, (from *olfacio*); the SENSE of SMELLING; *odoratus.* The mucous membrane which lines the nostrils is expanded in the two frontal sinuses, the antra of Highmore, the cells in the sphenoid bone, and the spongy bones of the nostrils. The olfactory nerves pierce the holes in the ethmoid bone, and spread themselves in this membrane. No where are the nerves so soft, naked, and consequently so easily affected and injured, though defended by an insipid mucus. A branch from the fifth pair is also sent to this membrane, by the irritation of which sneezing is excited on the irritation of acrid mucus, or any other stimulant. The objects of smell are those substances which float in the atmosphere; but from experiments it is plain that the spirit chiefly excites the sense of smelling, for as it is separated from the oil the latter is inodorous. The sense of smell is only excited when the odorous effluvia contained in the air are impressed on the olfactory nerves. The longer the nostrils, and the more extensive the surface, the more acute is the sense of smelling.

OLIBANUM, (from the Chaldee word *lebana*); *conder, thus masculinum*, and *corticosum.* LYCIAN JUNIPER or CEDAR. (See THUS.) It is a gummy resin brought from Turkey and the East Indies; but Dale found in a species of cedar, in Carolina, a gum so nearly resembling it, that he could not perceive any difference. The tree which usually affords it is the *juniperus lycia* Lin. Sp. Pl. 1470. We usually receive the olibanum in drops or tears, like those of mastich, but larger, of a pale yellowish colour, by age becoming reddish. The single tears are called simply *olibanum* or *thus*; when two are joined together, *thus masculinum*; if very large, *thus fœmininum.* When four or five large tears have adhered together, found probably on the bark of the tree, they have been named *thus corticosum*; the finer powder *mica thuris*; the coarser, *manna thuris.* The appellation of *thus* is now, however, disused.

Olibanum has a moderately strong, not very agreeable smell, and a bitterish taste. In chewing it sticks to the teeth, and renders the saliva milky. Laid on a red-hot iron it readily burns with a strong, not unpleasant, smell. On trituration with water, the greatest part of it dissolves into a milky liquor, which, on standing, deposits a portion of resinous matter, which on inspissation leaves a yellow extract, retaining much of the smell and taste of the olibanum. Rectified spirit of wine dissolves less than water, but takes up nearly all the medicinal virtue. It has been recommended in disorders of the head and breast, in hæmoptoes, and in alvine and uterine fluxes, in a dose of about ʒss. Dr. Cullen thinks it has no medicinal virtues, and takes no notice of it; but it is sometimes prescribed in gleets, leucorrhœa, and other discharges, where stimulants in the urinary passages or parts contiguous are necessary. It seems useful as a carminative, and we have sometimes thought it advantageous in the catarrhus suffocativus of old people. In hysteric complaints it is frequently ordered; and applied externally in a plaster as a corroborant. See Lewis's Materia Medica; Neumann's Chemical Works.

OLISTHE'MA, (from ὀλισθαινω, *to fall out*). See LUXATIO.

OLIVA'RIA CORPO'RA, (from *oliva, the olive*), resembling an olive. Two eminences on the lower part of the medulla oblongata, at the commencement of the medulla spinalis. See CEREBRUM.

O'LLI. See CAOUTCHOUC.

OLOPHLY'CTIDES, (from ὅλος, *whole*, and φλυκτις, *a pustule*; because they cover the whole body). See PHLYCTENÆ.

OLSENI'CHIUM. See ŒLSNITIUM.

O'LUS A'TRUM, (*olus, herb, ab alendo*, and *atrum, black*, from its leaves). See HIPPOSELINUM.

O'LUS AU'REUM. See ATRIPLEX.

O'LUS HISPANICUM. See SPINACHIA.

OMA'GRA, (from ὤμος, *shoulder*, and αγρα, *seizure*). See ARTHRITIS.

O'MASUM, or O'MASUS, (quasi *comasum*, or *comesum*; from *comedo, to eat*). See ABOMASUM.

OMELY'SIS, (from ωμος, *crude*); the meal of barley not parched; or any sort of meal.

OME'NTA. See DURA MATER.

OMENTA'LIS, and OMENTI'TIS, (from *omentum*). See PERITONITIS.

OME'NTUM, (from *omen*, because the soothsayers prophesied from the inspection of this part); *epiploon; reticulum, dertron, gangamon*, from its structure resembling that of a net; the caul which extends sometimes to the hypogastrium, sometimes scarcely below the navel. It is bordered with fat; the lines by which it is divided are fatty, and between the bands of fat it is sometimes plaited, resembling in shape a net or an empty pouch, floating over the intestines. Its superior portion is divided into two borders, one of which is fixed along the great arch of the colon, and the other along the great curvature of the stomach. The union of these two borders on the right side is fixed to the ligament, or adhesion of the duodenum and colon, and to their contiguous parts; that on the left side to the longitudinal scissure of the spleen, to the extremity of the pancreas, and to the convex side of the great extremity of the stomach. It connects also the membranous ligament which sustains the ductus choledochus to the ventral vena portæ.

The inferior portion is the *saculus epiploicus*; the anterior and posterior, styled the *laminæ;* but Dr. Monro prefers the term *alæ*.

The omentum is composed of two laminæ joined by cellular substance which is looser near the blood vessels, forming broad bands, in which the latter ramify, and which Dr. Monro calls *bands* or *portions of fat*.

The little omentum (see MESOGASTRION) is a small bag fixed, by its whole circumference, to the small curvature of the stomach, and to the concave side of the liver before the sinus of the vena portæ, so that it surrounds the prominent portion of the lobulus. It is thinner than the greater omentum, and ends in a narrower cavity, often in different pointed sacculi. Its laminæ seem, in part, to be continuations of the external membranes of the stomach, the liver and the contiguous portion of the diaphragm. Those of the great omentum are equally continuations of the contiguous membranes of the stomach, colon, and in part of the spleen; at least it is intimately connected with these organs. The fatty appendices of the colon and rectum have been called *appendices epiploicæ*, and are elongations of their external coat, resembling in structure the omentum. Each rests on a broad thin basis next the intestine, terminating by irregular papillæ. The bases are at first longitudinal, then, in their progress, oblique, and near the rectum transverse. The longitudinal appendices sometimes communicate with each other.

The blood vessels of the omentum are from the gastricæ, and consequently called *gastro epiploicæ*. The arteries on the right side answer to the hepatic; on the left to the splenic: both communicate with the arteria ventriculi coronaria, and with the mesenteric arteries respectively. The veins answer equally to the vena portæ The vessels of the lesser omentum come chiefly from the coronaries of the stomach; those of the appendices from the vessels of their respective intestines.

The omentum is generally larger on the left side than the right, often forms a part of a hernial tumour, and suffers with the peritonæum in child-bed fever. Its use is unknown. It is said, without reason, to lubricate with its fat the intestines; but these are kept distinct by an halitus. From its communication with those viscera, which are subject to considerable distension, there is little doubt but that it is subservient to their functions, though in a manner not easily explained.

OMOCO'TYLE, (from ὤμος, *the shoulder*, and κοτύλη, *a cavity*). See SCAPULA.

OMOHYOIDÆ'US MU'SCULUS, (from ὤμος, and ὑοιδες, *the hyoid bone*). See CORACO-HYOIDÆUS MUSCULUS.

OMOLI'NON, (from ωμος, *crude*, and λινον, *linum*). RAW FLAX; which Hippocrates used for burning or cauterising, or in the cure of the fistula in ano, a mode which Paulus calls *apolinosis*; in a tubercle of the side after cutting and cauterising; or in dropsy.

OMOPLA'TA, (from ωμος, *the shoulder*, and πλατυς, *broad*). See SCAPULA.

OMOPLA'TO-HYOIDÆ'US. Synonymous with *omohyoidæus*. See CORACO-HYOIDÆUS MUSCULUS.

O'MOS, (from οιω, *to bear*). See HUMERUS and UTERUS.

OMPHA'CIUM, (from ομφακιον, *an unripe grape*). See VITIS.

OMPHACI'TIS. (from the same). A small kind of gall.

OMPHACOME'LI, (from ομφακον, and μελι, *honey*); oxymel made of the juice of unripe grapes and honey.

OMPHALOCA'RPOS, (ομφαλος, *a navel*, and καρπος, *fructus;* from its resembling the navel). See APARINE.

OMPHALOCE'LE, (from ομφαλος, *the navel*, and κηλη, *a rupture*). See HERNIA UMBILICALIS.

O'MPHALOS, (from ομφιελισσω, *to roll up*). See UMBILICUS, and HERNIA UMBILICALIS.

O'MPHAX, (quasi ωμη εις το φαγειν, from its crude state). See AGRESTA.

ONA'GRA. See ARTHRITIS.

ONEIRODY'NIA, (from ονειρον, *somnium*, and οδυνη, *cruciatus*). DISTURBED OF TROUBLED SLEEP. Dr. Cullen places this disease in the class *neuroses*, and order *vesaniæ*, and defines it, violent or disturbed action of the imagination during sleep. The species are,

1. ONEIRODY'NIA ACTIVA. See SOMNAMBALISMUS.

2. ONEIRODY'NIA GRAVANS. See INCUBUS.

ONEIRO'GMOS, (from ονειρωττω, *semen in somno profundere*). Cœlius Aurelianus gives this appellation to the complaint in which the patient is disturbed with delusive dreams, frequently emitting his semen during sleep. He considers it as the result of impressions on the fancy, arising from extraordinary desire of, or great abstinence from, venery. Cœlius Aurelianus de Morbis Chronicis, lib. v. c. 7. See GONORRHŒA.

ONEIRO'GHONOS, (from ονειρος, *a dream*, and γονη, *seed*). The oneiroghmos, occurring rarely.

ONI'SCUS, (ab ονος, *multipeda*). See ASELLI.

ONI'TIS, (from ονος, *an ass*, because asses are fond of it). See ORIGANUM CRETICUM, and ANGLICUM.

ONOBRY'CHIS, (from ονος, and βρυχω, *to bray;* because its smell makes asses bray). *Polygalon Gesneri, caput gallinaceum, hedysarum onobrychis* Lin. Sp. Pl. 1059, HOLYHAY, COCK'S-HEAD VETCH, SAINTFOIN. It grows on hills, in high-ways, and corn-fields; but

always in a chalky soil, exposed to the sun. It is cultivated for feeding of cattle, and is said to increase the flow of milk in cows.

ONOCHE'LIS, ONOCLE'A, (from ονος, and χειλος, *a lip*; from its supposed resemblance). See ANCHUSA.

ONO'NIS, (from ονος, because it interrupts asses when at plough). See ANONIS.

ONO'PTERIS MAS, (from ονος, and πτερις, *fern*; because eaten by asses). *Onosma echinoides* Lin. Sp. Pl. 196. It is the plant which produces the *anchusa lutea* of some foreign dispensatories, commended as an emenagogue. See ADRIANTHUM NIGRUM.

ONY'CHIA, (from ονυξ, *a nail*). See PARONYCHIA.

O'NYX. (from ονυξ) The Greeks gave this name to a disease of the eye; a spot resembling in shape the finger nail. See ABSCESSUS OCULI, and ALBUGO.

OOI'DES, (from ωον, *an egg*, and ειδος, *likeness*). See OCULUS.

OPERCULA'RES, (from *operio*, *to close*). See COCHLEÆ.

OPERCULA'TUS, (from *operculum*, *a cover*). A kind of moss whose anthera is furnished with a lid.

OPE'RCULUM CO'CHLEÆ CŒLA'TÆ. See UMBILICUS MARINUS.

OPHIA'SIS, (from οφις, *a serpent*; because the serpent casts his skin). See ALOPECIA.

OPHIOGLO'SSUM, (from οφις, and γλωσσα, *a tongue*). ADDERS TONGUE; *brassatella; lingua serpentis, ophioglossum vulgatum* Lin. Sp. Pl. 1518. This plant hath only one leaf, with a slender stalk arising from its bottom, the edges dented, and supposed to resemble the tongue of a serpent; it grows in meadows, the leaf is thick, of a fresh green colour, and juicy; the seed is in a green spike. It has not been lately used in medicine.

OPHIOSCO'RDON, or OPHIOSCO'RODON, (from οφις, and σκοροδον, *garlic*; spotted like a serpent). *victorialis*; *allium anguinum*, and *alpinum*; *allium montanum latifolium maculatum*; *idæa*; *moly alpinum*; SPOTTED RAMSONS; BROAD-LEAVED MOUNTAIN GARLIC, similar in virtue to the common garlic. See Raii Historia.

OPHIOSTA'PHYLLON, (from οφις, and σταφυλη, *a berry*; because serpents feed upon its berry). See BRYONIA ALBA.

O'PHRIS, and O'PHRIS MA'JOR. See BIFOLIUM.

O'PHRYS, (οφρυς). See FRONTIS, OS.

O'PHRYS UNIFO'LIA. See MONOPHYLLON.

OPHTHA'LMIA, (from οφθαλμος, *an eye*). *Inflammatio oculi*; *ophthalmitis*; *blephoratis*; *chemosis*. An inflammation of the membranes which invest the eyes; particularly the adnata.

Dr. Cullen places this disease in the class *pyrexiæ*, and order *phlegmasiæ*, defining it redness, and pain of the eye, with incapacity of bearing the light, and most commonly with tears. He distinguishes two species: 1. The *ophthalmia membranarum*; 2. *ophthalmia tarsi*, when attended with tumour, erosion, and glutinous exudation of the edges of the eyelids. The first he considers as varying according to its degree. The second includes but two varieties. He distinguishes also between the idiopathic and the symptomatic ophthalmia, including in the first the species mentioned, and distinguishing the last from the primary disease. There is, however, no disease in which the practical views are so much confounded by nosological strictness as in ophthalmia, which is often an acute fever with highly active inflammation; but from this point it frequently diminishes in activity, so as to become merely a redness from over-distended vessels; though from the great sensibility of the organ, pain, impatience of light, and effusion of tears, remain. In this gradual progress the remedies must differ, and be often of a very opposite nature. In our description of the disease we shall keep, therefore, this change in view.

Ophthalmia is seldom ushered in by a marked paroxysm of fever. The first sensation is that of a pricking, often of a stabbing pain; and, where these sensations have been felt most pungent, a little fasciculus of peculiarly distended vessels may often be discovered. A sense of heat is felt in the eyes, with heaviness of the head, often with itching, and an effusion of tears. The eyelids are stiff, and closed to guard against the impression of light, which is peculiarly painful and distressing. If the habit is irritable, the pulse is quickened, especially towards the evening; slight shiverings, with nausea, and an inclination to vomit, sometimes come on.

By proper treatment the violence of the pain and the increased sensibility are mitigated, and the patient sleeps with ease, and can bear some degree of light. But the eyes continue red, and the former applications fail to relieve. They must then be changed, in the manner to be afterwards described.

This is the form of the common acute ophthalmia. The more severe differs rather in degree than in symptoms. In this form of the disease, the heat in the eyes is a sensation of violent burning; the organ itself feels spasmodically contracted; the weakest light is intolerable; the tears are continual, copious, highly acrid, and mixed with mucus; or the eye is dry and scorched; the pupil is contracted, and, instead of a redness of the adnata, the whole is sometimes a projecting excrescence of unvaried redness. Sometimes the vessels burst, and the whole adnata swells beyond the eyelids; sometimes the vessels yield internally, and the organisation of the eye is destroyed. This is occasionally known by a sudden sensation of bursting, with usually a flash of light. Sometimes the ophthalmia commences internally, and the adnata appears only inflamed from the communication. In this case the deep-seated heat, the intolerance of light, and the spasmodic constriction, are first felt. The consequences are often the same, viz. the destruction of the organ.

The external causes of this inflammation are cold air; dust; irritation of every kind, sometimes even of a swollen tarsus, or a tumour in the ciliæ; too great light; vivid colours; blows, wounds, &c. The internal causes are those of fever in general, the measles and small-pox, scrophula, repelled eruptions, and suppressed discharges.

Dr Cullen considers all the varieties of ophthalmia membranarum as the same disease, differing only in situation or degree. Should we, from the views just mentioned, and in subservience to practice, attempt to divide the varieties of ophthalmia, they would be the following:

Ophthalmia, 1. Acuta.
2. Epidemica.
3. Intermittens.
4. Metastatica.
5. Symptomatica.
6. A tarso.

The first of these is the common disease, differing in violence, according to the circumstances; the second, the Egyptian ophthalmia; the third, the common intermitting kind; the fourth, that which arises from repelled discharges; the fifth, the disease which arises from fullness of the vessels of the brain; and the last, the ophthalmia from tumours of the tarsus. The two first are constantly acute; the third only during the access of fever: the last inflammation has only a very slight degree of activity.

The ophthalmia subsequent to blows on the head, by which the meninges are injured, shows considerable danger. When it appears in the beginning of the small-pox, the consequence is often fatal. When attended with long and violent head-achs, blindness frequently follows. The humid species, the erysipelatous and venereal kinds, that of the choroides, and the chemosis, all greatly endanger the sight.

The cure must be regulated by the violence of the disease. In the active kinds, the general bleeding must be very copious; for, in a disease in a great degree local, small bleedings will have little effect. Besides general bleedings, for a similar reason, topical ones are necessary. When the pain and the inflammation are so acute as to threaten destruction to the organ, the temporal artery must be opened; or it will be preferable, according to the plan of Mr. Ware, to cut it through. Opening the jugular vein is less useful, for the purpose of a topical evacuation, and not always convenient as a general one. Mr. Ware recommends opening the vein at the inner canthus of the eye; but from this little blood can be obtained. Other modes of topical bleeding are leeches and cupping-glasses. Authors have been apprehensive of leeches, because they are supposed to add to the irritation. They sometimes certainly produce erysipelatous inflammation; but we have never known this increase the prior disease. Cupping-glasses, well managed, are undoubtedly a less equivocal remedy; but, unless the surgeon is peculiarly dextrous, little blood can be obtained, while, from leeches, any assigned quantity may be procured.

Blisters and laxatives should immediately follow the bleeding, and the former should not be applied nearer to the part affected than the nape of the neck, or behind either ear. The laxatives should be chiefly saline, unless the quantity required should be so great as to nauseate the stomach, and then some more active cathartic may be added; but they should be given so as to procure very profuse discharges. Emetics have been indeed given, from an idea that sordes in the stomach might produce or aggravate the disease. They undoubtedly determine to the head; but we have already observed, that by the determination to the surface in general, they are more serviceable than injurious by the former effect.

The applications at this period must be of the mildest and most soothing kind: moderately warm milk and water, or combined with a little mucilage, will be sufficient; and it will be useful to insert either the white of a fresh egg, a little mucilage or mild ointment, between the lids, if it can be done without irritating. The most perfect repose in a dark room is necessary.

By these means the general fever, as well as the more active inflammation, is checked. The acrid tears no longer flow, and a mild mucus is discharged from the tarsi; but the pain and the inflammation, in a less active form, continue. At this period, the saturnine applications are chiefly admissible, and blisters may then be applied to the temples; for, in the acute form of the disease, these appear too irritating, so near the inflammation. The mildest collyrium consists of equal parts of the aqua ammoniæ acetatæ and rose water, or with a less proportion of water. If a more cooling application is wanted, five drops of the aqua lythargyri acetati may be added to four ounces of distilled water, or to as much camphorated julep. By degrees the proportion of the saturnine preparation may be increased. Repose is still necessary, and light must be still as much as possible avoided. If the collyria, when cold, produce pain, they should be at first slightly warmed.

This is the period, we think, best adapted to the division of the vessels of the cornea by the point of a lancet, or to cutting off any projecting fasciculi of vessels with crooked scissars. It is often recommended earlier; but we have found that it is then impracticable to admit sufficient light to direct the operator.

The more active astringents, viz. the vitriolated zinc, the hydrargyrus muriatus, or the opium, are not admissible till the inflammation or the sensibility are still further lessened. From five to ten grains of vitriolated zinc may be dissolved in four ounces of water, or, by degrees, a scruple of the zinc with six grains of camphor may be allowed to this quantity of water. The muriated mercury is sometimes employed for this purpose, in the proportion of a grain to four ounces of distilled water. Opium is occasionally added to either of the former collyria, usually in the form of tincture; and two grains of camphor with one of opium have been rubbed together, with four ounces of boiling water, and then strained. Mr. Ware has recommended a drop or two of the vinous tincture of opium to be dropped into the eye, night and morning; other practitioners have employed the spirituous; but, as the vinous tincture cannot easily be procured, we have usually added a proportion of water to the spirituous till the inflammation was so much abated as to admit the latter undiluted. At almost every period of the disease, except the most acute, a proportion of brandy in water is useful. About one-eighth may be at first added, and the proportion increased, so as to produce a slight pungency, without any considerable pain: powders are in general less convenient or useful than fluids; but the latter should be applied immediately to the inflamed parts, and if soft muslin gives pain, as will be often the case, the eye-cup must be employed. The only admissible powder is the natron vitriolatum, which Dr. Kirkland advises to be blown into the eye. The pain, as with the tincture of opium, is at first increased; but a flow of tears soon comes on, and relieves the inflammation.

If the eye remains very weak after the inflammation abates, the best applications are the alum curd, which may be spread thin on a rag, and applied over the eyes

every night; and a solution of alum, in the proportion of a dram to half a pint of water; to which may be added the white of one egg. The patient may afterwards bathe in the sea, or cold water may be poured upon his head every morning for some time.

When the transparency of the cornea is diminished by films, borax is an useful remedy, and half a drachm may be dissolved, and may be used in two ounces of water; of which a little may be frequently dropped into the affected eye. Other collyria for this purpose are æruginis pp. gr. iv. ammoniæ muriatæ ʒss. aq. calcis recentis ℥viii. m. and liquoris hydrargyri muriati, gutt. i. aq. distillat. ℥iv. Pellier's ointment is thus prepared. ℞ hydrargyri nitrati rubri, lapidis calamin. pp āā ʒi. ss. lythargyri levigati ʒi. tutiæ pp. ʒss. hydrargyri sulphurati ℈i. bene commisceantur, deinde adjiciantur adipis suillæ ℥ij. balsam Peruviani. gutt. xv. m f. unguentum. When pimples on the eye attend an inflammation, the solution of vitriolated zinc usually succeeds; when these pimples suppurate, they should be opened with the point of a lancet, and washed with the solution of vitriolated zinc.

It will be necessary to notice the varieties of the ophthalmia membranarum, which we have pointed out as admitting of many modifications in practice.

1. *Acuta.* This is nearly the disease which we have described, but which authors have chosen to call *chemosis.* We now mention it to remark, that the whole of the curative plans, in all their activity, will be necessary in this complaint. The room should be completely darkened, the applications be perfectly cold, if such can be borne, and they should be the most imperfect conductors of caloric.

2. *Epidemica.* The Egyptian ophthalmia was for a long time supposed to be owing to the sands and dust of that arid country; but later observations have shown that it is acquired by sleeping in damp situations, with imperfect covering; that it is contagious, and epidemic from contagion chiefly, if not exclusively. The contagious nature of this complaint, if by contagion is not meant sympathy, though this scarcely alters the question, is evinced by Dr. Edmondson, not only from his own observation, but from the concurring testimony of ancient authors, establishing the position of Ovid more strictly than he ever intended it,

Dum spectant oculis læsos, læduntur & ipsi.

In support of this doctrine, he remarks, that even looking on a diseased person was enough to induce the ophthalmia in those who returned in the late expedition to Egypt; and it was conveyed, like other fevers, not only by immediate contact, but even by clothes, by ships, and barracks. The fever was also obviously remittent: the evening exacerbation and the morning remission were too clearly marked to be mistaken. Yet Egypt was not in former ages ravaged with this destructive enemy to our dearest enjoyments. Historians are eloquent in their praises of its fertility and beauty, without a hint of the sting which would sully the charms; and it was probably only at a later era, when many of the mouths of the Nile no longer carried its fertilising waters to the sea, that the remaining marshes left their destructive miasmata; or when, under the iron hand of despotism, the land was no longer drained and cultivated with the former care.

The disease in this form does not greatly differ from the severe kind already described. The fever, however, is more strongly marked, and its remittent nature more obvious. The irritability of the muscles of the eye is increased in a greater degree, and we thus trace the peculiar action of the marsh miasmata. The uniform redness comes on rapidly, and in a day, or at most two, a puriform matter, which is, however, a sebaceous mucus, is discharged from the eye; small yellow spots rise on the conjunctiva, which soon render the whole membrane spongy; and the head-ach, at first slight, becomes so violent and incessant as generally to threaten delirium, sometimes induce it. The morning remission of the third day concludes the first stage. The acute pain is succeeded by a sense of weight, and a peculiar sensation of weakness on exposure to light. The vessels of the conjunctiva, still distended, become of a purple colour, and the matter discharged is thicker and milder. The spongy appearance of the cornea gradually disappears, and a kind of depression follows. All the symptoms gradually diminish, leaving a cloudiness and weakness of sight only.

When at the termination of the first stage the disease does not remit, the pain is pungent and deep-seated, extending to the temples and forehead, occasioning an obstinate and distressing head-ach. The effusions of blood increase, and successive preternatural membranes are formed on the cornea. Collections of purulent matter gradually destroy the organ, and the cornea bursting, the protrusion of the different parts produce staphyloma. Ulcerations take place in the eyelids, and the adhesive inflammation connects these with the ball of the eye. Relapses are frequent on slight irregularity; but the disease is each time milder, and the blindness which often follows depends on the gradual thickening of the cornea. The inflammation is usually confined to one eye; but, if it ceases in that, the other is soon affected, which strongly proves that the fever is the principal disease.

The treatment of the epidemic ophthalmia does not greatly differ from that of the acute. General bleeding, by almost any author, is scarcely mentioned; and of the topical bleeding, the scarification of the vessels of the eye seems to be preferred. Dr. Edmondson remarks, with great apparent propriety, that in this variety the scarification should be performed while the vessels are distinct, florid, and round. If delayed till the redness is more diffused, and the hue purple, it is evident that the active period of the inflammation is passed; and Savaresi distinguishes the same period of asthenic inflammation, by a diminution of the swelling of the eyes, and a swelling coming on in the lids, by which they are turned up. Dr. Edmondson depends little on the opening of the temporal artery, as the eye is not supplied from thence; and we may add, that cutting it through will more probably determine a fuller current to the anastomosing branches. The purgatives he recommends are the neutral salts; but dissuades, with the generality of practitioners, violent purging. With this remedy, though the discharges are considerable, the system is not greatly debilitated. Mild lotions are also highly commended, at first milk-warm, afterwards cold, and in the end artificially cooled. In the second stage the acetite of alumine is said to be an advantageous application. Half a dram of alum is dissolved in four ounces

of water, and a scruple of acetite of lead in the same quantity. When these solutions are mixed a double decomposition takes place, and the sulphat of lead falls to the bottom. Opium is commended also by Dr. Edmondson, who confines its use to the second stage. Where there is great sensibility and irritability, he employs the watery tincture, and, if not effectual, two parts of water are added to one part of the tincture of opium, lessening gradually the proportion of water. One part of brandy, with two parts of water, form a still more stimulant application.

3. *Intermittens.* The intermittent ophthalmy is nearly allied to the epidemic. Each is violent in its attack, and each recedes, though in different degrees, while both perhaps depend on a similar cause. Yet we think we have seen an intermitting ophthalmia connected with a venereal lues, or at least relieved by a course of mercury. In this case we generally lose sight of the local affection to attend to the original complaint, the intermittent; nor are the remedies of ophthalmia employed unless the inflammation during the paroxysm is violent. The bark, or Grant's electuary for the hæmicrania, will generally relieve. As the disease is rare, we have had no opportunity of trying the arsenic, which, from its utility in similar complaints, we should suspect to be highly useful.

4. *Metastatica.* The most striking instance of metastatic ophthalmia, adduced by authors, is that from gonorrhœa. It is spoken of with confidence, derived apparently from one author to another without much reflection. We remember, about thirty years since, that a similar metastical gonorrhœa was supposed to occur in the nose, till it became evident that there was in two or three cases which happened about the same time, actual infection from the pocket handkerchiefs. Yet, if consent of parts, as Scarpa insinuates, be the cause of the translation of a disease from one mucous membrane to another, it is more probable that this metastasis would be to the nose than to an organ whose secretions are from different glands, viz. the sebaceous. As we write, however, to instruct, not to establish systems, we shall describe the disease as it occurs in authors.

Two kinds of this inflammation are described; one when the whole system is affected with syphilitic virus, the other where gonorrhœa has been imprudently suppressed. Each is distinguished by a sense of itching, which increases towards night, and goes off in the morning: the hairs drop from the cilia, the colour of the iris is changed, the pupil acquires a rugged appearance, the cornea becomes opaque and milky, sometimes so protuberant as to destroy the sight, and disfigure the organ. Mr. Bell describes it as occasionally attacking suddenly, with all the appearances of amaurosis. There are, however, strong doubts of these complaints being syphilitic. They have very decidedly the appearance of lepra; and we were not disappointed on finding that the chief reliance of the original authors was on their being cured by mercury. In this case, at least, there is no metastasis.

The second kind is more properly our present object. The symptoms are as rapid and violent as in the Egyptian ophthalmia. The swelling, the pain, the head-ach, the tumefaction of the eyelids, are almost in an equal degree; but we do not observe the exacerbating nature of the fever, and the discharge from the cilia is said to be greenish, like the matter of gonorrhœa. Swediaur describes three cases which occurred in an extreme cold winter, and the observations of different authors are so vague, some describing it as coming on after the suppression of gonorrhœa, some as continuing with it; one class speaking of it as accompanying, or immediately following, the acute stage; another as following this period at a greater distance; and all confessing it to be rare, that we should have been justified in considering its existence as ideal, or as accidental, had not Mr. Pearson given his very extensive experience on the same side. This very respectable practitioner could never trace such a connection between the eye and urethra as authors, and particularly Scarpa, had pointed out. It is possible, indeed, that the fingers or the handkerchief might convey the virus; but when this metastasis takes place, we have the express opinion of Scarpa that the gonorrhœa is mild in its appearance, and not rapid in its progress. Dr. Edmondson examines the question with great precision and propriety, and his conclusions are very correctly drawn; but, unable to escape from positive assertions, he admits the consent of the urethra and the eyelids from the consent of functions; both being, in the opinion of Bichat, mucous membranes. If the question, however, be determined by the identity of functions, both from structure and disease, it may safely be denied that the membrane of the eyelids is a mucous membrane, or that the discharge of this translated gonorrhœa arises from inflammation of these membranes. If any dependence can be placed on the description of authors, the discharge is from the sebaceous glands of the cilia. While, then, the supposed metastasis to a neighbouring organ, the testicle, is now found to be a communication of inflammation, not a translation of morbid matter; while membranes decidedly mucous do not suffer, and glands of a different nature are in this case affected; we are, we think, justified in considering this supposed metastatic ophthalmia as an accidental occurrence only. We have engaged at greater length in this discussion to guard young practitioners, in such instances, from depending, as they might do, on mercury for the relief of this ophthalmia, and neglecting the remedies for the real inflammation. Ophthalmia certainly does occur more remotely from lues; but this variety rests on a very different foundation, and will be afterwards noticed.

Other cases of this variety rest on a more certain basis. On the suppression of the menstrual discharge, of that from fistula in ano, or from piles, the eyes are sometimes affected. These are scarcely, however, in strictness, cases of metastasis, nor is the ophthalmia acute. Gout repelled has been sometimes followed by ophthalmia; ulcers in the legs imprudently cured, or erysipelas suddenly dried by astringents, have had the same consequences; but such diseases are easily understood from the nature of the original ones.

5. *A tarso.* We mean in this case to notice a distinct inflammation from the ophthalmia tarsi, and to point out the existence of real membranous inflammation from previous disease of the tarsus. We might perhaps have been contented with referring to it as symptomatic; but that if ever lues really produces ophthalmia, it is when the tarsus is diseased with the little tubercles which sometimes affect it.

6. *Symptomatica.* Ophthalmia is often a symptom of

affections in the head from blows, shocks, &c.; of apoplexy, when violent and sanguineous; palsy, and of scrophula. It was necessary to point out this variety; but the disease is not very acute, and the treatment is that connected with the original complaint.

CONSEQUENCES OF OPHTHALMIA. Repeated inflammations in the eyes produce various diseases of this organ, among which the most frequent and distressing is that laxity and debility of the vessels which admits most commonly red blood in a larger proportion than usual, and which occasions increased accumulations in them on the slightest cold or irregularity. This forms the CHRONIC OPHTHALMIA, which we shall first consider, and at greater length, as the directions will be applicable to the disease in its less active state.

When *chronic ophthalmia* is increased from colds, &c. it approaches more nearly the acute disease, and must be treated like the acute kind, in its second or third stage. In the interval the more active astringents may be employed; the first of which is cold. Cold bathing in general is sometimes useful; but bathing the face and eyes in the coldest water every morning is highly useful. Solutions of vitriolated zinc may be occasionally, though not constantly, used; but the purer and more active astringents, alum excepted, have not been employed. The tincture of galls, at first diluted, we should think an useful application, as combining a portion of spirit with a powerful astringent; and sometimes those narcotics which lessen irritability will be equally useful, as the tincture of opium, and probably a cold infusion of green tea, with a proportion of brandy. The discharge of a perpetual blister, or an issue, will take off the inflammatory disposition, and prevent the effects of cold. Both the blisters and the issues should, however, be as near to the head as possible. Blisters and setons on the temples have been advised, and are undoubtedly very powerful, as well as successful, remedies, should the disease be so violent and dangerous as to counterbalance the inconveniences and the unsightly scars. The narcotic bitters have been taken with some success, and the cicuta has had its advocates; but in general the constitution loses more by their deleterious power than the eyes gain by their sedative effects. This disease is, however, often idiopathic, and arises from the unsuspected intrusion of any minute hard body between the ball and the lids of the eye; the inversion of some of the hairs of the cilia, a disease of the caruncula lacrymalis, a small ulcer of the cornea, and, as we have said, any enlargement or inflammation of the tarsus.

Encanthis is the consequence most commonly of scrofulous ophthalmia, and the tumour feels hard and granular. Vide in verbo.

Pterygium, according to Scarpa, is a separation of the thin external lamina of the conjunctiva, which changes into a varicose membrane, from long obstinate ophthalmia, or from a shorter attack, if very severe. It differs both from the ALBUGO and UNGUIS, q. v. and often succeeds either the chronic or epidemic kinds. It is always triangular, and its point is towards the cornea, where the membranes are most closely united.

Ulceration of the cornea. Though we must now speak of this complaint chiefly as a consequence of ophthalmia, yet, as we shall not have occasion to resume the subject, we may add, that it is occasionally an idiopathic disease. As a consequence of ophthalmia, the ulcer is often already formed; but, in the latter case, it rises sometimes on, sometimes between, the laminæ of the cornea, and is attended with marks of acute ophthalmia: but though highly painful, and the tumour visible, yet opening it will not relieve the sufferings; for the matter is very tenacious, and will not flow out. The opacity of the cornea is increased by the operation, and another small abscess is often formed in the neighbourhood. When it bursts spontaneously, the symptoms of ophthalmia are greatly increased, and a little excavation is obvious. On its first appearance it is of a livid cineritious colour, with an inflamed base, and an irregularly tumid margin. When matured, however, it often remains inactive, and when it bursts naturally the discharge is serous and acrid, the tumour, like that of all secreting surfaces, liable to spread; and in violent ophthalmia the ulcer penetrates to the humours, occasioning their discharge, and a protrusion of the iris, or some portion of the vitreous humour. This is said to have been the consequence of the Egyptian ophthalmia, and occasionally of what is styled the gonorrhæal, which we must consider only as the violent epidemic disease. The inflamed eyes of children, however, often terminate in slight ulcers, which have no such formidable consequences. They heal with little difficulty, leaving sometimes a slight depression, which gradually fills up without even deformity.

The ulcer is healed only by those means which destroy the irritability of the nerves. The most effectual is caustic. The argentum nitratum, cut to a point, must touch the ulcer long enough to form an escar; and, should any part of it be dissolved by the tears, it must be washed off by dropping a little milk into the eye. The pain of the application is acute, but momentary, and the relief is soon almost complete; but, on the separation of the escar the burning heat, &c. return, only removed by successive applications of the caustic. The permanent effect is perceived by degrees, and at last the ashy-coloured appearance of the ulcer is changed to a brighter red, and the symptoms of ophthalmia disappear. When this change is obvious the caustic should no longer be applied, but the collyrium of vitriolated zinc substituted. In the slighter cases this collyrium is alone sufficient: indeed they are often little more than abrasions, sometimes the ulcer appears fungous, and to derive its nourishment from a small fasciculus of vessels. If then neglected, or treated only with slight astringents, the whole organ is destroyed. In this case the fungus and the bundle of vessels must be cut off with the crooked scissors; and when the blood has been allowed to flow, the caustic freely applied. If, on the exfoliation of the escar, the morbid part should not be wholly separated, the application of the caustic must be repeated. Each lid must be most carefully kept open during the application; the upper with a small spatula, which the operator must hold in his left hand, and the lower by an assistant.

Opacity of the cornea. This also, though a frequent effect of inflammation, sometimes appears independent of it; and is in that case rapid in its access, but temporary in duration. It seems, from an experiment of Dr. Barclay, recorded by Dr. Edmondson, to arise merely from fulness, chiefly from an excess in the proportion of the aqueous humour. It is then successfully removed by

general and topical evacuations only. When it succeeds ophthalmia, and is connected with varicose veins, giving a cloudiness only, without elevation to the eye, and impeding rather than obstructing vision, it is styled *nebula*. It seems to arise from a dilatation of the veins, and, from Scarpa's experiment, of these exclusively. This complaint differs from albugo in being a recent, slight, superficial opacity of the cornea, preceded and accompanied by chronic inflammation, through which the pupil and iris may be seen. When opacity of the cornea is the effect of more violent and active inflammation, it is styled ALBUGO, and its worst kind LEUCOMA, q. v. A very effectual mode of cure is to divide the vessels, leading to the cornea; for the opacity is the effect of effusion, in consequence of increased action.

Hypopyon, vide in verbo. *Staphyloma* is the consequence often of very severe ophthalmia, and consists in an opacity of the cornea, with irregular projections. In the earlier periods the cornea is thick and compact, in the latter its thickness diminishes, apparently from the compression from within, and the pressure of the eyelids without. It seems to consist in an effusion from the vessels of the conjunctiva; but in many cases we suspect that the serous fluid between the laminæ of the cornea coagulates in consequence of an alteration in its nature. From this cause the form seems to continue permanent. When, from distension or wound, any part of the iris, or, as we have seen, of the vitreous humour, protrudes, it is called *staphyloma*, though with less propriety.

OPHTHALMIA TARSI, *psorophthalmia* of Plenck, and some modern authors; mucous or puriform ophthalmia. Dr. Cullen has carefully included the psorophthalmia in his definition by adding "the glutinous exudation of the tarsus," which is peculiarly conspicuous; and were even a cavil to arise, it may be removed, by subjoining "and occasionally of the internal surface of the palpebræ." The disease is sufficiently obvious, and is often first felt by an obstruction of the lacrymal sac, giving the appearance of fistula lacrymalis. In fact, when this more glutinous fluid is mixed with the tears it obstructs the ducts; and, when the tumour is pressed, this puriform matter is pressed through the puncta lacrymalia. If, in this case, the tarsus be examined, and either eyelid turned back, particularly the lower, the internal surface will sometimes have a villous appearance, Merbomius' glands will be obviously swollen, and an ulcer on the tarsus, or at its union with the internal membrane, will be obvious. We were aware of this morbid appearance when we opposed the opinion of Bichat, that the internal membrane was not a mucous one. In fact, when it puts on that *appearance* the discharge is very different from mucus.

The scrophulous swelling of the tarsus differs, only in degree, from the psorophthalmia described, in which the unpleasing eversion of the eyelids most frequently occurs. The purulent eye, as it is styled, is not uncommon in new-born children; and the conjunctiva is spongy, the cornea dull, and, if the complaint be not carefully attended to, an opacity of the latter comes on. This disease in children is not connected either with scrophula or lues, but there is constantly a griping, and a discharge of dark fetid matter by stool, with which it seems intimately connected.

When it is a disease of the adult it is often at first attended with a little inflammation, and the more cooling, slightly astringent, applications of the second stage of ophthalmia are necessary, with occasional scarifications, or the application of leeches. This stage is, however, soon at an end, and more active astringents are now necessary. The oxide of zinc, combined with axunge, in the proportion of one to six, is sometimes alone successful; but, when the disease is more violent, some mercurial is required to give a more active stimulus. Janin's ointment is composed of four parts of axunge, two of prepared tutty, as much Armenian bole, and one part of the white calx of mercury. The unguentum nitratis hydrargyri of the Edinburgh dispensatory, lowered with three times its weight of axunge, or the red oxide, by means of nitrous acid, combined with twelve times its weight of axunge, has been recommended. We have found, for the greater number of cases, equal parts of the strong mercurial ointment and the unguentum cerusæ acetatæ sufficient; occasionally adding, in more obstinate diseases, a small proportion of the unguentum citrinum.

If the ulcers are not cicatrised by these means, the solution of blue vitriol, in the proportion of fifteen grains to an ounce of water, will be useful. Each application must be made by means of a camel hair brush, and the ointments softened by a gentle heat. When the ointments are used, they must be applied in the evening, and continue on the part all night: the solution must be used two or three times a day, and the redundant fluid washed away with a syringe and a little cold water. Tincture of opium may be occasionally employed. When the disease is violent, an adhesion of the eye to the upper lid sometimes takes place, which should be carefully separated, by raising the lid, and dissecting cautiously with a round-edged scalpel. Instead of the mercurial or the cupreous solution, the argentum nitratum, according to St. Yves, may be drawn along the edge of the palpebræ, washing the eye, immediately afterwards, with milk and water. The puncta lacrymalia should be kept open by injections of warm water, with a slight proportion of brandy.

In the general conduct of all these remedies, they should excite, on their application, a slight irritation, by which the puriform secretion is at first increased; but by degrees the edges of the eyelids become soft, the glands lessen, the internal surface of the palpebræ becomes smooth, and of its usual paleness.

In conducting the puriform ophthalmia of new-born children, we must recollect the intimate connection between this disease and the state of the bowels, nor is it one of the least important parts of the treatment to keep up a steady discharge by stool. The eyelids should be scarified by a lancet, and a leech or two applied in the neighbourhood.

The eye while in a tender inflamed state must be washed with a collyrium of equal parts of the common emulsion and julep of camphor, or warm barley-water; and until the swelling of the eyelids subside, cooling ointments and emollient cataplasms may be applied. When the turgescence of the eyelids abates, and the inflammation of the conjunctiva disappears, the decoctum corticis Peruviani is given internally, and astringent collyriums employed. Though blisters are generally applied, and commonly useful, they have not been considered as essentially necessary. Mr. Ware proposes on the first attack to resist the discharge of mucus, by strengthening

the external coat of the eye. He consequently directs the eye to be cleared of the morbid mucus, by injecting into it, by a syringe, a gentle astringent collyrium; in particular he prefers the aq. cupri vitriolati camphorata, diluted with common water, in the proportion of about a dram, to two ounces. This practice he uses in all the stages of the disease. As the matter increases, the collyrium may be employed more frequently, and gradually increased in its strength: in a slight case it may be used two or three times a day, but in the more violent ones it may be repeated every hour, and the astringency of the collyrium may be increased in proportion; as the disorder gives way, the strength of the medicine, and the frequency of using it, may both be decreased. Some authors recommend a solution of sulphats of copper and alumina. Of each a scruple may be dissolved in ten ounces of water, with a few drops of sulphuric acid, to keep the alumina suspended. But this we have found too stimulating, unless diluted with a third or fourth part of water. To abate the swelling of the eyelids Mr Ware prefers a cataplasm of the coagulum aluminosum et unguentum florum sambuci an. p. æq. applied cold. When the eyelids adhere strongly, they will be best separated by washing their edges with fresh butter dissolved in warm milk; but this may be prevented by interposing between the eyelids at night the unguentum oxydis zinci, or the combination of the mercurial and saturnine ointments. If the inside of the eyelids turns outward only when the child cries, and returns as soon as it ceases, nothing is particularly necessary; but if this symptom is constant, it will require a more frequent repetition of the injection, and immediately after the use of it, the lids must be returned, and a compress, dipped in the diluted aqua camphorata, constantly kept on it with the finger. When the inside of the eyelid is much inflamed, the diluted tinctura opii may be dropped on it with advantage every day; and when the quantity of mucus is so diminished as that the tincture may come in contact with the eye, it may be applied once a day to it. If there is reason to suspect any particular disease in the habit, the proper alteratives will be necessary.

Mr. Ware gives an instance of a case in which blood instead of mucus was discharged, and which gave way to the treatment here recommended.

See Heister's Surgery; Gooch's Cases and Remarks, p. 44, &c.; Lewis's Translation of Hoffman, vol. i. p. 38; White's Surgery, 223; Bell's Surgery, iii. 232; Kirkland's Enquiry, i. 473; Ware's Remarks on the Ophthalmy; Warner, &c. on the Eye and its Disorders; Scarpa on Diseases of the Eyes; Plenck de Morbis Oculorum; Pellier sur l'Oeil; Janin Memoires sur l'Oeil; Edmondson on Ophthalmia.

OPHTHA'LMIA SI'CCA, et TA'RSI. See XEROPHTHALMIA.

OPHTHALMIC or LENTICULAR GANGLION, is formed in the orbit by the union of a branch of the third or fourth pair of nerves with the first branch of the fifth pair. From this union the eye is sometimes affected in the TIC DOLOREUX, q. v.

OPHTHA'LMICI EXTE'RNI, (from οφθαλμος). See MOTORES OCULORUM EXTERNI.

OPHTHA'LMICUS WILLISII. The ophthalmic is the first branch of the fifth pair of nerves, which runs through the foramen lacerum to the orbit, connected in its passage with the sixth pair, and distributed to the ball of the eye, with the third; to the nose along with the olfactory, which the branch of the fifth that passes through the foramen orbitarium internum joins. This branch likewise supplies the parts at the internal canthus of the orbit; the glandula lachrymalis, fat, membranes, muscles, and teguments of the eyelids; its farthest extended branch passing through the foramen superciliare of the os frontis, to be distributed to the forehead. See TRIGEMINI.

OPHTHALMI'TIS, (from the same). See OPHTHALMIA.

OPHTHALMODY'NIA, (from οφθαλμος, and οδυνη, *pain*). An itching burning pain in the eye without redness, and without greatly increased sensibility. It is seldom distinct from ophthalmoponia, and has been ascribed to a rheumatic affection, or a spasm of the muscles. A deep-seated pain is sometimes felt from an accumulation of the aqueous humour (hydrophthalmia), sometimes from a cancer, or from a caries of a portion of the orbit.

OPHTHALMOPO'NIA, (from οφθαλμος, and πονεω, *to labour*). An intense pain in the eye, rendering light intolerable, usually arising from inflammation in the internal parts of the orbit.

OPHTHALMOPTO'SIS, (οφθαλμος, and πτοσις, *a fall*). A falling down of the eye, or its deplacement in any direction. The eye falls down almost exclusively from relaxation, but it may be displaced by blows, by tumours of any kind within the orbit. When staphyloma depresses the lower eyelid, the disease is referable to a different head.

OPHTHALMORRHA'GIA, (from οφθαλμος, and ρεω, *to flow*). Bleeding from the eye or eyelid.

OPHTHALMO'XYSIS, (from οφθαλμος, and ξυω, *to scrape off*). A brushing of the eye.

OPHTHALMOXY'STRUM, (from οφθαλμος, and ξυστρον, *a brush*). A BRUSH FOR THE EYE, *blepharoxysis*, formerly made of the beards from barley or rye. It was drawn across the inside of the eyelids, to draw blood.

OPIA'TA, (from *opium*). Medicines in which are opium; but an appellation also of ELECTARIUM, q. v.

O'PII. TINCTU'RA CAMPHORA'TA. See PAREGORICUM ELIXIR.

OPISTHO'TONOS, (from οπισθεν, *backward*, and τονος, from τεινω, *to stretch*). See TETANUS.

O'PIUM, (from οπος, *juice*; μηκωνος οπος; and, from hence, κατ' εξοχην, οπιον). *Affion, afiun, anfian, manus Dei.* Opium is the milky juice of the *papaver somniferum* Lin. Sp. Pl. 726, *α*, when incisions are made in their heads; and it is gradually dried in the sun to the consistence in which we receive it. Opium is brought from Turkey, Egypt, and the East Indies, obtained, according to Neumann, by pressing the juice from the heads of the poppies; but the best kind is that obtained from the incisions.

In many provinces of Asia they sow the white poppy (for this is the variety from which the true opium is procured) as we sow wheat. As soon as the heads appear, a slight incision is made in them, and some drops of a milky fluid exude, which are suffered to dry, and then collected. Tournefort tells us, that the greatest quantity of opium is made by bruising and pressing the heads; but Kæmpfer and Belon, though they speak

of three kinds of opium, describe each as produced by incision and exudation only. In Persia, the opium is collected in summer, when the heads are nearly ripe; and these are wounded on one side by a knife, which makes five incisions at once. The next morning, the inspissated juice is collected with a spatula. The operation is then repeated on the other side of the heads, but the first tears, styled *gobaar*, are preferred: these are whitish, or of a light yellow, but become brown in the sun, or when too much dried. The second tears are darker, and less efficacious; those of the third operation, black and inefficacious.

When the opium is collected, it is beat up with a little water or honey, till it has the brilliancy of pitch. It is then rolled into cylinders, and, in this state, offered to sale. If small quantities are wanted, they are cut off with scissars. Sometimes the honey is in so large a proportion as to prevent its drying, and to soften its bitterness. This is the state of the East-India opium. The most remarkable preparation of opium, in the East, is uniting it with nutmeg, cardamoms, canella, and mace. It is called *philonia*, and is the philonum of the Persians, supposed to strengthen the heart and the brain. Others add only saffron and ambergris, and almost every one varies the additions, according to his fancy. A celebrated liquor, called *Cocomar*, is mentioned by Kæmpfer, which is an infusion or a decoction of the leaves, sometimes of the heads, adding various ingredients to please the palate. Another preparation to produce a temporary intoxication is called an electuary, and often employed.

Olivier in his travels into Asia saw the plantations of poppies on a large scale, chiefly in the vicinity of a village, called Affiom-Kara-Hissar (the black castle of opium). The poppy is sown in autumn, transplanted in spring, and the harvest is collected about July.

Various attempts have been made to cultivate the poppy in England for the purpose of making opium, and Mr. Ball received a premium for this purpose from the Society for the Encouragement of Arts; but the quantity used is too inconsiderable to render it a national object, and the uncertainty of our climate will render it a very precarious speculation. The inspissated juice of the decoction of our white poppies is sometimes used, and the heads are boiled down to make the poppy syrup; but the former is of inferior virtue, though apparently less virulently narcotic, and white. We think the syrup, when properly made, an highly useful preparation, for reasons to be assigned hereafter: we fear, it is seldom the true watery extract of the poppy head. The seeds of the poppy are oily, and the flowers are cultivated in France for that purpose.

Opium is brought into Europe in flat cakes, or irregular masses, from four to sixteen ounces in weight, covered with leaves. It is a gummy resinous substance, softish, and tenacious, especially when warm, or much handled; of a dark reddish brown colour in the mass, and yellowish when reduced to powder, with a faint disagreeable smell, and a bitter taste. If chewed a little, it affects the tongue with a very slight sense of heat, which spreads to the palate, and then in a less degree to the lips, provoking a discharge of saliva, and sometimes sneezing.

That in which no visible impurities are lodged; which, when broken, appears of a dark red-blackish colour; dry, not unctuous, but moderately ponderous and compact; that which is inflammable, of an acrid bitter taste, a faint smell resembling the odour of unripe poppy heads, without any empyreumatic flavour, communicating to water a reddish tincture, is the best.

Belon observes, that sometimes a pound contains only about four ounces of pure genuine opium; but such adulterated kinds rarely reach us. Sand is added to increase its weight, and many foreign bodies are found mixed with it. It is ordered to be purified by dissolving it in twelve times its quantity of proof spirit, and distilling the tincture to dryness, after filtering.

Opium is softened by the heat of the fingers, but is not fusible, though highly inflammable. Water and alcohol dissolve it in different proportions, and no separation of the opium in the watery solution takes place on the addition of alcohol. When water is added to the tincture, some resin is deposited. Alcohol or water carry over, into a receiver, the narcotic powers of opium, which, by long boiling, or drying, are lost. A portion remains, which neither alcohol nor water will dissolve, supposed, by Gren, to be albuminous; by Bucholtz, caoutchouc; by Josse, a virulent glutinous substance; by Proust, wax, or combined with wax; by Duncan, gluten, approaching in its nature to the fibrin of the blood. Neumann procured from 1920 parts of opium 1520 of alcoholic, and 80 of watery extract; and, inversely, 1280 of watery, and 200 of alcoholic extract. In the first case, the residuum was 320, in the last 440 parts. The solutions of opium, especially the watery, give copious precipitations by infusions of galls. The resin is separated either in a soft or hard state, and the former is sometimes called its essential oil: in this the narcotic power has been supposed to reside. The gummy part seems to contain a small proportion of an earthy salt.

It would be useless to enlarge on the numerous disquisitions to which the chemical analysis of opium have given a temporary importance, but we shall add a few remarks, applicable to practice, that may be drawn from them. This celebrated drug contains, like all other matters, a resin and gum. The extractive matter contains the mucilaginous portion with resin, and it appears, that, while this union is least interrupted, we attain the sedative power with the smallest portion of the virulently narcotic. By the long tedious processes of the French chemists, we obtain a large portion of resin; but this is the product of the operator in consequence of the union of oxygen. The black drop, prepared at Lancaster, is not, we have said, the solution of opium in a vegetable acid; nor does it appear to be a strong spirituous tincture, and is certainly more active than any tincture, not virulent after its immediate action. It is equal, in efficacy, in the dose of four drops to seven of the common tincture of opium, and, in the mildness of its effects, though not in their degree, we have come near to it by a tincture made with a weak spirit; for we have uniformly found, that, with a diminished portion of the uncombined resin, the anodyne effects were best secured, without the subsequent inconveniences of headach, nausea, &c. We should therefore suspect, that it is a weak, spirituous tincture, with a proportion of watery extract. At least we know that, in this way, a medicine of very similar powers may be procured. With this exception, we think Dr. Duncan has very

justly observed, that the attempts of some pharmaceutists to obtain a preparation of opium, which should possess its sedative without its narcotic effects, only succeeded in so far as they diminished its activity.

The effects of opium on the living body have been represented in very opposite, contradictory, terms. It has been keenly disputed whether it is stimulant or sedative, as if it was necessary that it should be either. If by stimulant is meant a medicine, which, by its action on the stomach, will increase the heat of the body and the quickness of the pulse, it by no means deserves the title. If given to a healthy person, the pulse and the heat are both lowered; every pain, every care, is soothed; cheerfulness and hilarity are the consequence. If the dose is increased, the face is somewhat flushed, the hilarity rises to intoxication, the mind is unsteady, and the hands tremble. Nausea, faintness, and head-ach follow, when the influence of the medicine is at an end. This brings the medicine within our class of indirect stimuli, which are generally narcotics; and the error seems to have arisen from what we have often stated as a fundamental one in medical reasoning, viz. not distinguishing between increased and irregular action. If we speak of its effects more generally, to the serenity and calmness which it induces, we should add respiration slow and deep, a suppression of all the excretions, except that of the skin, pulse slower and fuller, with sleep in circumstances often the most unfavourable to it. With some persons, however, instead of sleep, a mild pleasing delirium comes on, the mind wanders in the delightful regions of fancy, and the duration of time is to the imagination greatly extended. It is a striking instance of a material cause influencing an intellectual idea. With others, this delirium is attended with horror. Suspended rocks are ready to fall; the torrent hastens to overwhelm them, or the edge of a precipice yields under their feet. After considerable doses, vertigo, convulsions, and apoplexy come on, the blood is confined to the large vessels, usually the veins, and a rupture has sometimes ensued.

To explain these symptoms has appeared difficult. It was supposed, from dissections where venous plethora was so conspicuous, that the blood was rarefied, and that sleep was produced from its pressure; but this opinion is no longer supported, for opium produces its effects in very small quantities, and more rapidly than will admit of its reaching the circulating system. In general, it has been concluded that it possesses both stimulating and sedative powers, the first of which is conspicuous soon after its exhibition, and at last conquered by the second. It is not easy however to conceive two such opposite powers in a substance, except where the excitement is so violent as to exhaust the irritability, and then the medicine would be strictly a stimulant.

In conformity with the principle which we have just stated, we think it will appear to be a sedative, or rather a narcotic only; and we shall endeavour to explain all its effects from this power. A sedative or narcotic remedy will necessarily first lessen irritability, and this power is immediately obvious in the calm serenity it induces, in consequence of lessening the effect of irritation. The pulse becomes slower and fuller, because the heart, less irritable, is more completely filled before it is stimulated to contraction; the mind is unsteady from diminished, and of course unequal, excitement; the secretions checked from the confinement of the blood in the larger vessels; and those of the skin more full, as the relaxation of the cutis, by which they are confined, diminishes the resistance. A similar effect we have seen from warm bathing. (See BALNEUM.) In the other secretions there is no obstacle to the fulness of the vessels from a constringing membrane.

Marks of a stimulus are however occasionally striking. If given in inflammatory complaints it will sometimes increase the action of the pulse; and if it does not produce sleep, it renders the patient unusually restless. Yet these effects may be readily explained without contradicting the general principle. If, as in cases of pneumonia, the solution of the disease depends on the yielding of the excretories, to oppose this effect must aggravate all the symptoms, particularly the fever. Yet it aggravates also acute rheumatism, though said to open the cuticular excretories. But, in this case, it opposes a disease which consists, as we shall find, in a constriction of the cuticular vessels, from a different cause. If this constriction is not relaxed by very different medicines, we must expect injurious effects from opium. This reasoning will be confirmed by the advantages derived from peculiar modes of administering it, which coincide with the principle laid down, of its being purely sedative. See RHEUMATISMUS.

Nor is it surprising, that, when it excites unpleasant images, and renders the patient restless and uneasy, it should increase fever. The constant agitation is alone sufficient for this purpose; and, when the excitement is unequal, it depends on idiosyncracy whether the delirium shall be pleasant or distressing.

When the idea of its changing the circulating fluids was abandoned, it was doubted whether it acted on the stomach or the heart; and the second Monro has published some experiments, which seem to show that its chief effects are on the latter. These, however, only prove that, when opium is injected into the sanguiferous system, it produces no effect till it reaches the heart. The small quantity which in the stomach will produce the peculiar effects; the little diminution which is found in a pill of opium, when it has proved fatal; and the rapidity of its action, sufficiently show that, in diseases, it acts exclusively on the stomach. All the subsequent symptoms, those which follow its continued use, and those which arise from the increased dose, contribute to show a sedative power.

The test of this reasoning must, however, be sought for in practice; and, for this purpose, we shall consider its utility in the various diseases for which it has, at any time, been recommended.

We know of no question either in theory or practice more difficult than the use of opium in FEVERS, q. v. We have in that article given the outline of its advantages, but we must consider the subject more carefully, at this time, when we possess the necessary information respecting its action. If fevers consist in debility and in irregular action, and opium is a sedative, producing also irregular action, it will appear that no medicine is so unsuitable to the disease. We might rest on this, and at once, with many respectable practitioners, condemn it; but experience forbids; and we must examine whether any unsuspected circumstance of the disease, or any new property of the medicine, either alone or in

combination, will explain the apparent inconsistency. When we spoke, with Dr. Darwin, of the quiescent state of the capillaries during fever, we did not exclude spasm, or irregular action, in consequence of debility; and in considering the state of the brain, we saw numerous proofs of unequal excitement. If, then, the irritation from the latter cause could be prevented; if, by any means, we could determine to the surface without increasing the heat, we might expect to relieve the febrile state. These ends may, we think, be obtained by moderate doses of camphor, joined with the opium, and occasionally with an antimonial. Each is assisted by the warmer ammoniacal neutral, and, as we have remarked, should opium not disagree, we preserve the strength by a few hours rest. When the unequal excitement, in consequence of increasing debility, is so great as to produce subsultus and convulsions, there can be little doubt of checking the inequality by removing all irritation; and this we are often compelled to attempt by opium, though aware of its sedative power, since the excitability would be soon destroyed by the violent excitement. Camphor, in this case, acts not only by its antispasmodic power, but also by its stimulus; for, in considering the effects of this peculiar medicine, we remarked, that we were more frequently obliged to add nitre than aromatics to it.

INTERMITTENTS. The use of opium in intermittents supports, we think, the former reasoning. It is employed with the warmer stimulants, sometimes with relaxants, to keep up the discharge from the surface, and prevent the formation of the cold fit. Boerhaave's *sudorificum antipyreticon raro fallens* contained two grains of opium; and the compound powder of ipecacuanha, assisted with the ammonia, will often succeed. In the hot fit it produces, according to Lind, that relaxation of the skin which hastens and facilitates the sweating stage, relieving by this means the head-ach and delirium, rendering the solution more complete, and the fever less liable to return.

In CONTINUED FEVERS, according to the same principles, it will contribute to determine the fluids to the surface, as we have already explained, and to diminish irritation; but we must be particularly cautious that it do not stop the other secretions, particularly the alvine, on which the success of our practice so much depends.

In INFLAMMATIONS, opium, for the reasons assigned, viz. its tendency to check secretions that would be salutary, is not very frequently employed. Yet with calomel it has been given in every form of active inflammation, with success; for reasons which will be readily understood, since to a medicine which determines so steadily to the skin, opium must be an useful auxiliary. In *phrenitis*, opium is inapplicable, except as a diaphoretic; and in *cynanche*, as it occasions thirst and dryness of the mouth, it can seldom be used with advantage. In *pneumonia*, except where a diarrhœa is found to exhaust the strength, and check expectoration, opium is seldom admissible, since it will have a similar effect; and is only employed to prevent exhaustion, since it is scarcely more than a temporary impediment to the salutary discharge. Yet De Haen gave two grains of opium with two ounces of olive oil, a practice which has not been imitated; and we have left it in doubt (see OLEUM) whether oil may really assist expectoration. In *enteritis* opium is highly useful; and we have already spoken of the propriety of checking the spasm previous to the exhibition of laxatives. But, independent of this power, it is often necessary to quiet that irritation of the stomach which prevents food or medicine from being retained. In *nephritis* it is often necessary, with oily laxatives, to relieve pain; but, as it powerfully checks the discharge of urine, diluting liquors should be freely drank with it. In *rheumatism*, with relaxing remedies, often with calomel, it is highly useful (see RHEUMATISMUS). In *gout* it is frequently indispensable to relieve the pain, nor is it found, if the action of the bowels be supported, really injurious.

In the EXANTHEMATA, opium is often a valuable medicine; and in *variola*, it is an exception to the injuries feared from it in inflammations, for when these tend to suppuration, no inconvenience results from its use. In the convulsions, previous to the eruptions, it is highly advantageous; and on the sixth and seventh days, it allays the pain of suppuration, without checking the ptyalism. In *morbilli* it is less useful, as will be obvious, if what we have alleged of the utility of a free discharge from the bowels be considered. In every view, the dry cough and the pneumonic symptoms forbid its use, unless considerable irritation prevail. In the *scarlatina*, as in cynanche, it is still less proper.

In the HÆMORRHAGIÆ it is not often employed, from the apprehension of its stimulus; but, as it sooths and calms, rendering the pulse slower, and determining to the surface, it will be often of service. We have found it so, and particularly in those hæmorrhages attended with considerable irritation, as the uterine, and those which precede or threaten abortion.

When hæmoptysis is aggravated by cough, it is equally so, and when discharges of blood from the anus are produced by diarrhœa, opium is the most salutary remedy, particularly if joined with demulcents.

In the PROFLUVIA of Dr. Cullen, it is chiefly useful in *dysentery*, and with the mild laxatives, occasionally with the relaxing antimonials, or with ipecacuanha, very effectually relieves. In *catarrh*, unless joined with peripneumony, it is a most useful medicine.

If there were in nosological systems a class of DOLORES, opium would be the chief remedy. It is useful in pains of the stomach, the violent pains from the passage of a biliary or urinary *calculus*; in *pyrosis*, in *dysmænorrhœa*, *odontalgia*, in those cases of *sphacelus* attended with great pain. In general also, in painful diseases, as in spasms, the dose of opium, however large, acts only on the constitution, in that portion which is in excess beyond what is necessary to relieve the pain. Thus, if ten grains are given, and nine are required, to procure ease, the constitution only experiences the inconvenience which would arise from one grain.

In SPASMS of every kind it is an almost indispensable remedy, particularly in *tetanus*, *trismus*, *convulsio*, &c. In *puerperal convulsions*, after bleeding, it is almost the only effectual remedy. In all flatulent diseases, it acts as the most effectual carminative.

Opium, some years since, was recommended as an infallible remedy in *venereal complaints*, and constantly used, for a time, in the military hospitals. It indeed seemed to *suspend* the disease, without making any progress in the cure. It may be used, therefore, like the nitric acid, to prevent the symptoms from increasing,

while the constitution recovers some degree of strength from former mercurial courses, but cannot be depended on for a complete victory over the disease.

With many opium disagrees, and numerous have been the correctors proposed. Ammonia sometimes succeeds; more often camphor; or camphor with castor. The vegetable acids, so highly extolled, have been in our hands useless in this respect. Five grains of camphor, with as much castor, made into three pills, with conserve, may be combined with a grain, or a grain and half, of opium; and, in this form, will frequently produce no inconvenience. While a blister is rising, opium will be often borne with ease; and, in almost every case of fever, camphor should be combined.

The nausea, the drowsiness, and vertigo, after taking opium, are relieved most effectually by a cup of strong coffee; but seldom disappear till after a night of sound sleep. Opium should not be given with astringents, alkalis, or metallic salts, as by these it is precipitated when in solution. It is not however certain that any real chemical change in the essential part of the remedy takes place; but should it be suspected, the combinations may be made in pills, where there is little room for the play of affinities.

The chief officinal preparations of opium are the pulvis ipecacuanhæ compositus; pulvis opiatus; tinctura opii confectio opiata; pulv. è creta C. cum opio. In the *pillulæ ex opio*, it is mixed with liquorice in the proportion of one grain to ten. In the *camphorated pills of opium*, each grain of the latter is united to two of the former. In the *compound opium pills*, a grain of opium and of camphor are united with a quarter of a grain of tartarised antimony. The *emplastrum opiatum* contains a very small proportion of opium, with the litharge plaster, stiffened with dry pitch and some wax. As an anodyne it is wholly useless. For opiate clysters and injections, see ENEMA and INJECTIO.

One grain of pure opium is generally a sufficient dose; three grains can scarcely be taken with impunity by a person not accustomed to it; though, by habit, even an ounce in a day may be administered. Garcias knew a person who took ten drams a day; and in Turkey, five or six drams are often taken when violent pains, or other symptoms, require it. Frequent experience manifests the propriety of large doses in spasmodic complaints; twenty-two grains of pure opium, besides three hundred drops of laudanum, have been given in the space of thirty-six hours, without any remarkable inconvenience. Different constitutions require different doses to produce the desired effect; so that practitioners should be careful in ascertaining the proper dose for each constitution, by beginning with small portions, and gradually increasing them till the end is obtained.

Where however opium disagrees, both small and large doses are equally inconvenient. In general the doses should seldom be less than a grain, unless often repeated. The effects of opium seldom continue above eight hours, and if the action is to be continued, it should be repeated in six. In large doses it does not check the secretions, but on the contrary sometimes seems to promote them. When it conquers obstructions, it often appears to do so; and in taking off the spasm which prevented the passage of a stone or obstructed the bile, or, in similar effects in the urinary passages, it seems to be laxative or diuretic.

When imprudent doses have been taken from mistake, or design, stupidity, giddiness, a redness of the face, swelling of the lips, troublesome dreams, starting, convulsions, cold sweats, a considerable dilatation of the pupil, imperfect speech, slow full pulse, quick breathing, nausea, itching in the skin, vomiting, madness, hiccough, fainting, &c. follow. A vomit of vitriolated zinc is then necessary, and after it a spoonful of sharp vinegar is recommended; sinapisms must be applied to the feet, blisters to the arms, and frictions freely employed. Vinegar is the supposed antidote, but cordials and ammonia will be more successful.

Alkaline salts diminish, it is said, the soporific effect of opium; and the fixed alkaline salts are supposed to render it diuretic. The volatile carries it through the skin; and acids, in the opinion of many authors, destroy its powers.

See Kœmpfer's Amœnitates Exoticæ; Wedelius's Opiologia; Cullen's and Lewis's Materia Medica; Neumann's Chemistry; Alston's Dissertation on Opium in the Edinburgh Medical Essays, vol. v.; Medical Museum, vol. i. page 473, &c.; Jones's Mystery of Opium; Tralles' Usus Opii.

OPOBA'LSAMUM, (from ὀπος, *juice*, and βαλσαμον). BALSAM OF GILEAD. See BALSAMUM.

OPOCA'LPASON, (from ὀπος, and καλπασον, a tree of that name). *Opocárpason*, or *opocárphathon*. See CARPASUS.

OPODE'LDOC. The name of a plaster said to be invented by Mindererus; but often mentioned by Paracelsus. (See LINIMENTUM SAPONACEUM). A composition is sold under the name of *Steer's Opodeldoc*, considered as a powerful remedy for strains, bruises, and similar complaints. It is made in the following manner: ℞ Solution. saponis cum camphora aq. ammoniæ acetatæ āā ℥i. aquæ ammoniæ puræ ℥ss. m.

OPODEOCE'LE. A hernia through the foramen ischii, and into the labia pudenda.

OPO'PONAX, (from ὀπος, *juice*, and ϖαναξ, *the panacea*). The plant from whence the gum *thus* is produced is known by the names of *opoponacum*, *panax heracleum*, *costinum*, and *pastinacea*. HERCULES' ALL-HEAL, *pastinaca opoponax* Lin. Sp. Pl. 376, nat. order *umbellatæ*. See PASTINACA OLUSATRA.

This gum is brought from Turkey and the East Indies, sometimes in little round drops, but generally in irregular lumps, of a reddish yellow colour on the outside, with specks of white, internally of a paler colour, and often variegated with large white pieces. It has a disagreeable smell, and a bitter, acrid, nauseous taste, dissolving in water and in spirit, and yielding a little essential oil in distillation. As a medicine, it is used as an attenuant and deobstruent; and in large doses is said to be laxative: its dose is from ℈i. to ℥i. *Opoponax* resembles, and is the least disagreeable of the fetid gums, probably also of the least virtue. See Raii Historia; Cullen's and Lewis's Materia Medica; Neumann's Chemistry.

OPPILA'TIO. See OBSTRUCTIO.

OPPO'NENS POLLI'CIS. The flexor of the metacarpal bone of the thumb.

OPPOSITIFO'LIUS PEDUNCULUS, (from *oppo-*

situs and *folium*). Growing opposite to a leaf of a plant.

OPPRESSIO. See CATALEPSIS.

OPTICI NE'RVI, (from ὀπτομαι, *to see*). The OPTIC NERVES are the second pair united in the brain, but soon becoming two distinct cords, each passing through the foramen opticum of the sphenoid bone, to their respective orbits. They unite on the anterior part of the glandula pituitaria, before they escape from the skull; but soon separate again, without mixing their fibres, and are inserted obliquely towards the nose. The optic nerves are surrounded by the four recti muscles of the eye.

OPU'NTIA. *Cactus opuntia* Lin. Sp. Pl. 669, a shrub which nourishes the cochineal insect, whose flowers expand like a case, having each a great number of stamina in the centre, growing upon the tops of the ovary. The ovary becomes a fleshy umbilicated fruit, with a soft pulp, inclosing many seeds of an angular shape. The leaves are used as emollients in inflammation. See COCCINILLA.

OPUNTIOI'DES, (from *opuntia*, and εἶδος, *likeness*), a marine plant, shaped like the opuntia, but brittle and hard, reckoned among the vermifuges.

O'RANGIA. See AURANTIA HISPALIENSIA.

ORBI'CULARIS LABIO'RUM, (from *orbiculus, a little ring*). See LABIA.

ORBICULA'RE OS, (from the same). *Lenticulare os.* See AURIS.

ORBICULARIS PALPEBRA'RUM MUSCULUS, (from the same). *Constrictor palpebrarum.* The orbicular muscles of the eyelids rise fleshy from the outer edge of the orbitar process of the superior maxillary bone, and from a tendon near the inner angle of the eye. The fibres run a little downward and outward over the upper part of the cheek below the orbit, covering the under eyelid, and surround the external angle. Then passing over the superciliary ridge of the os frontis, they mix near the inner canthus with the fibres of the occipito-frontalis and corrugator supercilii. After covering the upper eyelid, they descend to the inner angle, and adhere to the inner angular process of the os frontis, and to the short round tendon which serves to fix the palpebræ. It is inserted into the nasal process of the superior maxillary by a tendon which covers the anterior and upper part of the lacrymal sac. The fibres which run on the eyelids are elliptical. These muscles shut the eyelids, compress the lacrymal gland, and convey the tears to the puncta lacrymalia.

ORBICULA'RIS, (from the same). See SPHINCTER ANI, and LYCOPERDON VULGARE.

ORBICULA'RIS CLAUSOR. The orbicular muscle of the eyelid.

ORBICULA'RIS LABIO'RUM. See SPHINCTER LABIORUM.

O'RBITA, (a dim of *orbus, a globe*). *Cyclos.* The ORBIT of the EYE, or the spheroidal cavity in which the eye is placed; its angles are called *canthi.*

ORBITA'LES ARTE'RIÆ, (from *orbita*), are branches of the inferior maxillary arteries. See MAXILLARIS ARTERIA.

ORBITA'RE EXTE'RNUM FORA'MEN, is in the os maxillare, below the orbit. Through it the nerves and vessels, which come from the teeth, pass to the cheek.

ORBITA'RE INTE'RNUM FORA'MEN, is a little above the os planum; through it goes a branch of the fifth pair of nerves to the nose.

ORBITA'RII NE'RVI. See MOTORES OCULORUM EXTERNI.

ORBITA'RIUS PROCESSUS. See MAXILLARIA SUPERIORA OSSA, FRONTIS OS, and SPHENOIDES OS.

ORCHE'A, (from ὄρχις, *a testicle*). See SCROTUM.

O'RCHIS, (from ὀρέγομαι, *to desire*), the name of a plant with a testiculated root; *satyrion; cynosorchis; testiculus caninus; serapias; orchis morio* Lin. Sp. Pl. 1333. MALE ORCHIES; SATYRION.

This plant hath six or seven long, narrow, smooth leaves, variegated with dark-coloured spots, issuing from the root, and one or two embracing a single, roundish, and striated stalk. On its top appears a long loose spike of irregular, naked, purplish-red flowers, consisting each of six petals, one of which is large, cut into three sections, hanging downward; the other smaller, forming a kind of hood above it, with a tail behind. The root consists of two roundish, whitish tubercles, about the size of nutmegs; one plump and juicy, the other fungous and somewhat shrivelled, with a few large fibres at the top. It is perennial, grows wild in shady grounds and moist meadows, and flowers in May.

The plump roots, which are alone used in medicine, have a faint smell, and sweetish viscid taste. When the seed is formed, and the stalk ready to fall, the new bulb, of which the salep is made, has arrived at maturity, and may be distinguished from the old one by a white bud, rising from the top, the germ of the orchis of the succeeding year. It is mucilaginous, and similar to the althæa. The dried roots are brought from Turkey, under the name of *salep;* but those of our own growth are equally good. The salep brought from Turkey is in yellowish white oval pieces, hard, clear, and pellucid, without smell, tasting like gum tragacanth. Our orchis roots, decorticated and dried in the air, are similar in appearance. Reduced to powder, and boiled in water, they form a very nourishing mucilage. Half an ounce of the powder will produce a gallon of thick mucilage, if first sprinkled with a little boiling water, then mixed well with it, and afterwards with the water in which it is to be boiled. If kept dry, it never spoils, so that it might form an excellent part of seamen's diet; and as a dram and a half of salt in a pint of portable salep is not disagreeable, it may be made with a portion of salt water when fresh is scarce. As a diet, it excels rice; and for children particularly it is peculiarly proper, as it seems to retard the acetous fermentation of milk. This powder, and the dried gelatinous part of flesh, or portable soup, dissolved in boiling water, form a rich thick jelly, capable of supporting life for a considerable time. One ounce of each of these articles, with two quarts of boiling water, will be sufficient subsistence for a man one day. Dr. Percival thinks that a small proportion of it would be an useful addition to flour in making bread; but we perceive that it must be small, and less than one eighth. As a medicine, the salep is mucilaginous, demulcent, and sheaths, it is said, the acrimony of the sea-scurvy. In diarrhœas and dysenteries it is useful by lubricating the bowels and correcting putrefaction. In symptomatic fevers, from the absorption of pus, a

plentiful use of salep acts as a demulcent. In the strangury and dysury it is of service by its mucilage; and it is a useful aliment for calculous patients. See Cullen's and Lewis's Materia Medica; Percival's Essays; Georgical Essays, vol. iv.

O'RCHIS BIFO'LIA, Lin. Sp. Pl. 1331. See BIFOLIUM. Dr. Cullen has seen salep prepared from this species as perfect as that from Turkey.

O'RCHOS, (from ορχος, *a plantation*, or *orchard*). The extremities of the eyelids where the eyelashes grow; from the regularity of their insertion. See OCULUS.

ORCHOTO'MIA, (from ορχις, *testicle*, and τεμνω, *to cut*). See CASTRATIO.

O'RDO, (*method*, or *disposition*). ORDER. The second division under which naturalists arrange the objects of nature. See NOSOLOGIA, and Cullen's Synopsis Nosologiæ Methodicæ.

OREI'LLONS. See CYNANCHE PAROTIDÆA.

ORELLA'NA. See ORLEANA.

OREOSELI'NUM, (from ορος, *a mountain*, and σελινον, *parsley*). MOUNTAIN PARSLEY. *Athamanta oreoselinum* Lin. Sp. Pl. 352. *Apium montanum nigrum; oreoselinum apii folio minus.* The roots are slenderer than those of the daucus, and not lactescent; the leaves like those of the parsley; the seeds oval, flat, large, striated, marginated, and sometimes cast off their husks. It grows on the mountainous parts of Germany and other countries, is pungent and diuretic.

OREOSELI'NUM PRATE'NSE CICU'TÆ FO'LIO; *peucedanum Alsaticum* Lin. Sp. Pl. 354. *Daucus Alsaticus; angelica pratensis apii folio.*

OREOSELI'NUM A'PII FO'LIO MA'JUS; *athamanta libanotis* Lin. Sp. Pl. 351. *Libanotis nigra; gentiana nigra; daucus montanus; cervaria nigra; daucus selinoides major;* MOUNTAIN-DAUKE, or BLACK HERO-FRANKINCENSE. The seeds of these plants resemble those of the mountain parsley, and are styled diuretic and emmenagogue, but are seldom employed.

ORE'STION, (from ορος, *a mountain*); *helenium Dioscoridis, inula helenium* Lin. Sp. Pl. 1236. See ENULA.

ORGA'NUM. Any part of the animal body, which from its structure is adapted to particular offices. This structure is from thence called *organizatio.*

ORGA'SMUS, (from οργαω, *turgeo*). SUDDEN VEHEMENCE, generally applied to the venereal impulse. Hippocrates transferred this term to the agitation excited by superfluous excrementitious fluids, to produce the necessary discharges. Linnæus calls it a subsultus of the arteries. Quincy considers it as an impetus of the blood or spirits, distending the muscles with unusual force. It is in fact a violent determination of the blood to any organ.

ORI'CIA. A species of fir, called from Oricus, a city of Epirus, where it grows.

ORIENTA'LIA FO'LIA, (from *oriens, the east*). See SENNA ALEXANDRINA.

ORIENTA'LE GU'MMI. See GUM SENEGAL.

ORI'GANUM, (from ορος, *a mountain*, and γανοω, *to rejoice;* because it grows most luxuriantly on mountains). WILD MARJORAM; *marjorana sylvestris, oleracea, et mancarana; origanum anglicum, et spontaneum; onitis major; origanum vulgare* Lin. Sp. Pl. 824. *Heracloeticum*, from Heraclea. COMMON WILD MARJORAM is a plant with firm round stalks; oval, acuminated, uncut, and somewhat hairy leaves, set in pairs on short pedicles. On the tops grow scaly heads of pale-red labiated flowers, whose upper lips are entire, the lower cut into three segments, set in a convex umbel, intermixed with roundish, purplish leaves; each flower is followed by four minute seeds inclosed in the cup. It is perennial, grows wild on dry chalky hills and gravelly grounds in several parts of England, and flowers in June.

The leaves and flowery tops have an agreeable aromatic smell, and a pungent taste, warmer than the garden-marjoram, and much resembling thyme, with which they agree in medicinal virtue, as well as with marjoram. Infusions of the leaves are drank as tea in weakness of the stomach, and disorders of the breast, to promote perspiration, the fluid secretions in general, and the catamenia. They are sometimes used in anti-rheumatic baths; and the dry leaves powdered are a good errhine. For internal use, half an ounce of the leaves is infused in a pint of water. In distillation with water they yield a moderate quantity of a very acrid, penetrating, essential oil, smelling strongly of the origanum, but less agreeable than the herb, called *oil of thyme*, often put into a hollow tooth to allay pain. See Lewis's Materia Medica, and Neumann's Chemistry.

ORI'GANUM CRE'TICUM. See DICTAMNUS CRETICUS.

ORI'GANUM MAJORA'NA, seu FOLIIS OVATIS. See MAJORANA MAJORI FOLIO.

ORLEA'NA, (from the place where it grows), *arbor Mexicana; orellana;* the ROUCOU or ARNOTTO-TREE, *bixa orellana* Lin. Sp. Pl. 730.

This curious shrub rises commonly to the height of eight or nine feet, thrives best in a cool rich soil, and shoots most luxuriantly near springs and rivulets. The seeds are covered with a kind of wax called *terra orellana, roucou*, and *arnotto*. When the seed vessels are mature, the seeds are put into convenient jars, to which is added as much hot water as will suspend the wax. When this is washed off, the seeds are taken out, and the fluid left at rest till the wax thoroughly subsides. The clear liquor is then decanted, and the sediment dried gradually in the shade. This mass is afterwards made into balls or cakes, and dried in an airy place, until fit for use, or the market. The wax is a cool, agreeable, rich cordial, and hath been long in use amongst the Indians and Spaniards in America, who still mix it with their chocolate, both to heighten the flavour and raise the colour. It is said to be a successful remedy in dysentery, is used as a pigment, and often mixed with other ingredients both by painters and dyers. The roots resemble in virtue the wax, but are more diuretic. The Indians prepare an arnotto of a bright shining red colour, almost equal to carmine.

The arnotto dissolves with difficulty in water, tinging it of a pale brownish yellow; more readily in rectified spirit of wine, to which it gives an orange-red colour; and it is used in varnishes, to give an orange hue to the pale yellows. Alkaline salt renders it soluble in boiling water, without altering its colour. See ACHOTE.

ORNITHO'GALUM, (from ορνιθος, *of a bird*, and γαλα, *milk;* because the colour of its flower resembles the milky fluid found in eggs). *Ornithogalum umbellatum medium angustifolium; ornithogalare, ornithogalum umbellatum* Lin. Sp. Pl. 441, the STAR OF BETHLEHEM, flowers in May. The root is bulbous or tuberous, and

is a wholesome nutrient: indeed the roots of all the species possess the same properties. (See Raii Historia.) It is also a name for squills. See SCILLA.

ORNITHOGLO'SSUM, (from ορνις, *a bird*, and γλωσσα, *a tongue*, from their shape). BIRD'S-TONGUE. The seeds of the common ash-tree.

ORNITHROPO'DIUM, (from ορνις, and πες, *a foot*, from the likeness of its pods to a bird's claw). BIRD'S-FOOT: *telephium; chironium; scorpioides;* SCORPION-WORT; *ornithopous scorpoides* Lin. Sp. Pl. 1049, grows on sandy and gravelly places, and flowers in summer. The seeds are said to destroy the stone in the kidneys; but are very rarely used. See Raii Historia.

O'RNUS, (from the Hebrew term *orn*). See FRAXINUS ORNUS. It is also an appellation of the *sorbus aucuparia*. See SORBUS SYLVESTRIS.

OROBA'NCHE, (from οροβος, *a wild pea*, and αγχω, *to suffocate*; because it twines round and suffocates the orobus). See HYPOCISTIS.

O'ROBUS, (from ερεπτω, *to eat*). *Karemyle astragalus; astragaloides; orobus tuberosus* Lin. Sp. Pl. 1028. WOOD-PEASE, HEATH-PEASE; grows in woody places, flowers in April, ripens its seed in May. The tubera of the root are highly nutritious, taste like liquorice, and in Scotland are used for the same purposes, and chewed like tobacco. See Raii Historia.

O'ROBUS, and OROBRY'CHIS PEREGRI'NA, (from οροβος, and βρυχω, *to eat*). See ERVUM.

OR'PIMENT. See AURIPIGMENTUM.

O'RRIS. See IRIS VULGARIS.

ORTHOCO'LON, (from ορθος, *straight*, and κωλον, *a limb*). See ANCHYLOSIS.

ORTHOPONŒ'A, (from ορθος, *erect*, and πνεω, *to breathe*). This disease, when neither connected with asthma nor dyspnœa, is only a symptomatic. It consists in a sighing suffocating respiration, and the patient must be erect to breathe. It is a symptom often of hysteria, sometimes of hydrothorax, occasionally of polypi and diseases of the heart or larger vessels. In some cases it arises from fat, from poisons, deleterious vapours, or any cause of compression on the lungs.

ORVA'LA, (from *orvale*, French). See HORMINUM.

ORVIETA'NUM. A celebrated antidote, called from Orvieto, a city of Italy, where first used, or from Orvietanus, its inventor.

ORY'ZA, (from the Arabic term *orez*). RICE; the seeds of the *oryza sativa* Lin. Sp. Pl. 475; ARAC. Its grains are disposed in an oval panicle, covered with a thick husk, like barley. It is less viscous than wheat, but less nourishing, and used as a diet in diarrhœas; but the salep is preferred by Dr. Percival. It ferments slowly, and corrects putrefaction imperfectly; but is preferred by Dr. Cullen as a grain highly productive and nutritious. The idea of its being hurtful to the eyes is without foundation. Rice flourishes in a moist soil, and even in water. In China the liquor called *arrack* is distilled from it. See ARAC.

ORY'ZA GERMA'NICA. A species of barley.

OS, *ossis*, (from the Hebrew term *ozam*, *strength*). A BONE. Bones consist of a mucilage and an earthy matter. Acids dissolve this earthy matter, leaving the bone of its original shape, but soft. See BONES.

OS, ORIS, (from οσσα, *the voice*). The MOUTH. Its external parts are the lips, the angles of the mouth, the border or edge of each lip, the fossula which runs from the septum narium to the edge of the upper lip, and the transverse fold which separates the under lip from the chin. The internal parts are the palate, the septum palati, the uvula, the amygdalæ, the gums, the fræna of the lips, and the tongue, with its apex, root, sides, and frænum.

OS EXTE'RNUM, and INTERNUM. The first is the entrance into the vagina; the second the mouth of the womb.

OS LEO'NIS. See ANTIRRHINUM.

OS TINCÆ, *amphidion* and *oscheon*. If the os internum is long and hard, when pains, like labour, come on, a clyster and an anodyne may be given, for labour has not commenced. The os tincæ is sometimes open, a month or two before the period of labour; but its thickness and softness remain the same, until labour comes on. Nor does it always point in one direction during pregnancy, or in the beginning of labour. When opened by the membranes, it is soft, and if contracted again from the discharge of the waters, it is easily dilated. It sometimes is hardened and thickened by age, or by frequent labours; and the birth, though natural, is in that case somewhat retarded. To dilate these parts, the fingers must be gradually introduced, and when the hand is in the vagina, the os internum must be slowly and cautiously dilated; and the more carefully in proportion to the rigidity of the parts. When the hand can be introduced into the uterus, the back should be contiguous to it, and the palm to the membranes.

OSCE'DO, (from *os*). See OSCITATIO.

OSCHEOCE'LE, or OSCHEOPHY'MA, (from οσχεον, *the scrotum*, and κηλη, or φυμα, *a tumour*). See HYDROCELE and HERNIA.

O'SCHEON, (οσχεων). See SCROTUM, and OS INTERNUM.

OSCILATO'RIUS MO'TUS, (from *os*, *a mouth*, and *cilleo*, *moveo*). VIBRATION; as of a *pendulum*. Borelli thinks that such a motion takes place in the blood by means of the inspired air mixed with it in equal proportions, regulating and governing the motion of the spirits by its elasticity; and physiologists, without any distinct ideas, have spoken of a similar motion in the extreme blood vessels. They certainly act often irregularly, and perhaps independent of the heart, as in blushing; but such action is very different from oscillatory motion, and the introduction of the term only produces confusion.

O'SCITANS, (from *oscito*, *to gape*). The YAWNING FEVER.

Yawning is undoubtedly an early symptom of fever; but there is no peculiar kind distinguished by this symptom.

OSCITA'TIO, (from the same); *chasme*, *oscedo*. YAWNING. The effect of yawning in the healthy, according to Boerhaave, is to move, accelerate, and equally distribute the fluids through all the vessels of the body, consequently to fit the muscles and organs of sensation for their various functions. It is an irregular, partly a convulsive, action of the muscles of the lower jaw, and like stretching takes place when the muscular power is not completely restored. A French physiologist has told us that it is designed to

restore the due power to the extensor muscles, which they lost by the superior action of the flexors during sleep. See MUSCULI.

When yawning is troublesome, a long deep respiration, or drawing in the air at long intervals, cures it. Hippocrates.

OSCULATO'RIUS MU'SCULUS, (from *osculo, to kiss*). See SPHINCTER LABIORUM.

OSCULUM, (a diminutive of *os*), a small orifice.

OSMA'ZOME, (from οσμη, *smell*, and ζωμος, *broth*). We should not have introduced this singular term, but that the experiments of M. Thenard, who suggested it, were not within our reach when the former part of this work was written. It is the animal substance peculiar to muscles, or muscular flesh, which gives odour and flavour to the decoction or soop; and by these qualities, as well as its colour, is distinguished from gelatine. Its proportion to the latter, in flesh, is as about one to five. Four pounds of muscular flesh, bruised and washed with cold water, produced nearly six drams of this substance. The decoction of bones is gelatinous only. This is the animal matter not yet sufficiently examined, which gives the zoonic acid its peculiar properties, for it is originally the acetous.

OSMU'NDA VULGARIS, PALU'STRIS, and REGA'LIS. See FILIX FLORIDA.

O'SSA BA'TUS. See BOROZAIL.

O'SSA SPONGIOSA, sometimes distinguished by the epithet *inferiora*, as two turbinated portions of the ethmoid bone, by some anatomists described as parts of the ossa palati, are frequently called *superiora*. They are certainly distinct in the early periods of life, and consist of a spongy lamella in each nostril, the convex surface of which is towards the septum, and the concave towards the maxillary bone, covering the opening of the lacrymal duct. Two processes rise from its upper edge. The posterior (the broadest) hangs on the edge of the antrum highmorianum; and the anterior forms the os unguis, and a part of the lacrymal duct. These bones are complete in the fœtus, and lined with the mucous membrane. The sides of the maxillary sinus, apparently turned downwards, seem to form two other bones, and some smaller bones, irregular in their size and uncertain in their number, occasionally project into the nostrils to extend the surface of the olfactory organ.

O'SSA E CO'RDE CE'RVI. The BONE of a STAG'S HEART, formed by the ossification of the arteries, was formerly used in asthma.

OSSI'CULA AUDI'TUS. See AURIS.

OSSI'CULUM, (a dim. of *os, a bone*). In botany it is the shell or hard covering of seeds, like bony lamellæ.

OSSIFICA'TIO, (from *os, a bone*, and *fio, to become*). OSSIFICATION. The calcareous phosphat of which bone consists is deposited from arteries; but previous to the deposition, the arteries are distended; and those which did not before carry red blood are now visible from their containing this fluid. In this blood the knife discovers hard particles, which gradually unite; for these bony fibres are flat, and radiate as from a centre; no membranous parts are formed, and their shape is generally irregular. In the blood vessels the membranes supply the place of those usually connecting the osseous particles in cartilages, forming the body of the cartilage from which the bone by maceration slips perfectly distinct. While the bones are increasing within cartilages, the cartilages are extended; and from the pressure which they suffer from the bone within and the integuments externally, they decrease continually, and are at last entirely destroyed.

Dr. Hunter, in his Lectures, supports this opinion, by curious anatomical preparations, in opposition to Kerkringius and others, who contend that bones are originally cartilaginous.

Dr. Hunter had a preparation of the patella, in which he demonstrated that the ossification of that bone began by the arteries ossifying in the centre of the cartilage, which, in young subjects, supplies the place of the bony patella. Mr. Cruikshank prosecuted the subject, from the first appearance of an ossifying artery, to the perfect formation of the patella. He supposed that the same thing took place in all other bones, and demonstrated that ossification is not only begun but carried on by the ossifying of the arteries.

Morbid ossifications frequently happen in the aorta, lungs, pericardium, and even in the corpora cavernosa penis. The natural process advances in infants in proportion to their strength. In flat bones it begins in the centre, and shoots towards the circumference; in long ones, in the middle, shooting towards the extremities.

See Kerkringius, Ruysch, Nesbit, Albinus, and Monro.

OSSIFRA'GA, (from *os, a bone*, and *frango, to break*). See OSTEOCOLLA.

OSTA'GRA, (from οστεον, *a bone*, and αγρα, *a laying hold of*). A forceps to take out bones; and also a pain in the bones.

OSTI'TES, OSTEOCO'LLA, (from οστεον, *a bone*, and κολλαω, *to glue*); *ossifraga*, *osteolithos*, *holosteus*, *amosteus*, *ostracites*, *stelochites*, GLUE-BONE, STONE or BONE-BINDER, is the petrified root of a poplar, or pine; found in sandy places in several parts of Germany. This sand hath a large mixture of fine, white, calcareous earth, which sticks to the fingers, resembles meal, and when washed by the rains into any cavity hath the appearance of an emulsion. Of this sand, and calcareous earth insinuated into the roots of the trees, is the osteocolla formed, long famed for its virtues of promoting a coalition of fractured bones. See Lewis's Materia Medica; Neumann's Chemistry; and the Philosophical Transactions.

OSTEO'COPAS, (from οστεον, *a bone*, and κοπος, *uneasiness*). A constant and remarkable pain of the bones from an affection of the internal periosteum, not increased by pressure, arising chiefly from acrimony of the humours in the spina ventosa. These pains resemble those of great weariness.

OSTEOGENEI'A, (from οστεον, and γενεια, *generation*). OSTEOGENY, treats of the production of a bone in its progressive states. See OSSIFICATIO.

OSTEOGE'NICA, (from οστεον, and γενναω, *to beget*); medicines ridiculously supposed to promote the generation of a callus.

OSTEOGRA'PHIA. OSTEOGRAPHY (from οστεον, and γραφω, *to describe*), describes a skeleton, and all the bones which compose its different parts.

OSTEOLI'THOS, (from ὀστέον, and λίθος, *a stone*). See OSTEOCOLLA.

OSTEOLO'GIA, (from ὀστεον, and λογος). A DESCRIPTION OF THE BONES. The doctrine relative to the bones includes osteogeny, osteography, and synosteography. See Monro's Osteology.

OSTEOSARCO'SIS, (from ὀστέον, *os*, and σαρξ, *flesh*). Softness and flexibility of the bones.

OSTIA'RUS, (from *ostium, a door*). See PYLORUS.

OSTIO'LA, (a dim. of *ostium*). The valves in the vessels of the heart. Mundinus.

OSTRACI'TES, (from ὀστρακον, *a shell*). *Ostrea labris non crenatis*. HOBGOBLIN'S-CLAW, a stony substance, of the shape of an oyster-shell, used instead of the pumice-stone, to take off hairs. A name of the *osteocolla*; see also CADMIA.

O'STREA, (from the same). The OYSTER. A light, easy, nutritious diet, which is said not to pass off freely by perspiration. In the reign of Galen it was supposed to be cold; and Dr. Moffat tells us, that to eat oysters and drink cold water is certain death. It has been since recommended, so mutable is fashion, as an aphrodisiac. If roasted or scalloped, it is hard of digestion; and vinegar seems to add to its insolubility. The shells are excellent absorbents, and generally used to correct acidity in the primæ viæ. When burnt in the fire, they are supposed to form a lime peculiarly adapted to calculous complaints; and after being repeatedly used for making lime water, they may be employed, were it necessary, as absorbents. The hollow shells contain most of the fine white earth; the rougher matter of the shell much sea-salt. See Neumann's Chemistry; Lewis's Materia Medica.

OSTRU'TIUM. See IMPERATORIA.

OSY'RIS; *cassia poetica Lobelli, cassia Latinorum, lignea Montspeliensium. Osyris alba* Lin. Sp. Pl. 1450. POET'S ROSEMARY: the whole shrub is astringent; it grows in the southern parts of Europe, and is sometimes corruptly called *auxyris*.

OSY'RIS, (from οὖρον, *urine*; because it promotes a discharge of urine). See LINARIA.

OTA'LGIA, (from οὖς, *an ear*, and ἄλγος, *pain*). A PAIN in the EAR. This disorder affects the concha, and the whole meatus auditorius; and is attended with inflammation, tumour, pulsation, and a sense of weight. Dr. Cullen considers it to be a variety of phlogosis phlegmone, from its situation.

It is, in general, an inflammatory complaint, often from its usual cause, cold, directed from a crevice to the part, and sometimes followed by suppuration; but any cause of irritation may produce pain in this very sensible organ; and hardened wax, or any extraneous body, in the meatus auditorius, are frequent causes. Numerous are the causes and distinctions in authors, and in our predecessor's work; but acrimony, the fermentation of the wax, or turgid glands, are at least unfrequent sources of the complaint. Indeed they are incompatible with the nature of the organ or its secretions. We must therefore confine our ideas to inflammation and irritation. In the former case, blisters behind the ear, cooling laxatives, and the frequent injection of warm fluids are necessary, and alone often complete a cure, especially if joined with the relaxing diaphoretics and anodynes. Warm olive oil seems to have no particular claim to our notice, above any other warm fluid; but it has probably been preferred, from apprehension of the pain being occasioned by some insect, which it often destroys. If this be the case, however, he may be enveloped in the cerumen; and tobacco smoke has a better chance of relieving the complaint. Other warm applications are, warm sea-water, a roasted onion, and similar modes of conveying heat. If these fail of giving relief, they at least hasten suppuration when the pain ceases. Suppuration seldom takes place within the tympanum; but when it does so, the matter finds a way through it.

Inflammation in the part itself is not the only cause of this disease. It may be secondary from the throat, the teeth, and occasionally from rheumatism on the side of the head. It is only necessary to be aware of these causes to ascertain their existence, and obviate them by appropriate remedies.

There are, however, pains in the ear, whose sources are less obvious. If it be hardened wax, it may be seen by throwing a strong light into the meatus auditorius; and, in that case, syringing the ear with soap and water is often effectual. Salt water is a better menstruum for the wax, and may be employed. There is reason, however, for apprehending one bad effect from this remedy, viz giving such a susceptibility to the organ, that it is more liable in future to be affected by cold, and therefore this remedy must be employed with caution.

When the wax is not in fault, and the pain is deeply seated, we cannot ascertain the cause, and our conduct must be more empyrical. In these cases a warm infusion of poppy heads, the warm essential oils, the balm of Gilead, a solution of camphor, joined with opium and similar medicines, may be dropped into the meatus with good effect.

OTENCHY'TES, (from ὠτος, the genitive of οὖς, *an ear*, and ἐγχέω, *to pour in*). A SYRINGE for the EARS.

OTHO'NNA, (from ὀθόνη, *lint*). See CHELIDONIUM MINUS.

OTI'TIS, (from οὖς, *the ear*). Inflammation in the internal ear, inducing fever, restlessness, and even, in some cases, delirium. Independent of the remedies of OTALGIA, q. v. from inflammation, the general remedies for fever are required.

OTOPLA'TOS, a fetid discharge from behind the ears. It is generally critical, and consequently must not be imprudently checked. The utmost cleanliness is, however, indispensable.

OTOPUO'SIS, (from οὖς, and πύον, *pus*). A purulent discharge from the ear.

OTORRHŒ'A, (from οὖς, and ῥέω, *fluo*). A discharge of blood or of bloody matter from the ear.

OUY'COU. See CASSADA.

OU'RLES. See CYNANCHE PAROTIDÆA.

OVA ZEPHY'RIA. Eggs not impregnated by the cock; WIND EGGS, said to be conceived in a westerly wind.

OVA'LE FORA'MEN, (from its shape). See COR.

OVA'RIA, (from *ovum, an egg*). The OVARIES; formerly called the female testicles; but now supposed to be the receptacles of *ova* or the female seed, taken up and conveyed in the form of an ovum by the Fallopian tube to the uterus. (See GENERATIO.) The ovaries are two small bodies situated behind each

Fallopian tube, near the fundus uteri, to which they are fixed by a short round ligament, and inclosed with it, between the folds of the ligamenta lata. The substance of the ovaria, like that of the testicles, is spongy; but each ovarium seems to contain numerous little vesicles, styled *ova*, each of which seems surrounded by a spongy covering. The outer coat of the ovary is from the peritonæum; and when a woman has conceived, a fissure is observable on this coat of a different size and figure, even in the same body. At the age of puberty they are of the proper size, and continue plump and full until the menses begin to disappear. They receive vessels from the spermatics, which run on to the uterus, and anastomose with the hypogastrics. The nerves are from the intercostals, lumbal and sacral. Besides the liquor which resembles the white of egg, they contain two or three vascular bodies called *corpora lutea*, and which, by some, are called the eggs, but in reality are apparently the part of the ovarium from which the egg has dropped, since it is not found before a woman has conceived. It is not again wholly filled for three or four months, but is very vascular, as is the case when any lost substance is to be supplied.

The ovaries are subject to great distension from water. See HYDROPS OVARII, and also a singular case in Gooch's Observations and Remarks.

OVA'TUS, or OVIFO'RMIS HU'MOR. OVAL, EGG-SHAPED. See OCULUS.

OVI CA'NDIDUM, (from *candeo, to shine*). See ALBUMEN OVI.

OVI DUCTUS, the Fallopian tube.

OVIPAROUS, animals which exclude their young under the covering of an ovum.

OVO'RUM TE'STÆ; *anatum*, and, when calcined, *anora*, EGG-SHELLS, are prepared by boiling them in water, separating the membrane, which lines the inner surface, and powdering them by levigation. They are similar to the other absorbents, but said to be less astringent.

OVUM, (from ωον). An EGG. Eggs are nutritious, but if boiled hard are with difficulty digested. They seem to be less alkalescent than almost any other animal substance, and during digestion to be less stimulant; but they should be eaten when quite fresh, for as they approach to a putrescent state they become offensive to the stomach; nor is it material from what birds they are taken, except those which feed almost exclusively on putrid animal substances. The yolk is used as a medium for uniting balsams with water. There is great analogy between the serum of the blood and the white of an egg. See Neumann's Chemistry. Cullen's Materia Medica.

OVUM PHILOSOPHO'RUM. A glass whose body is of an oval figure, by which a liquor may be distilled by circulation.

OVUM SUBLIMATO'RIUM. See CUCURBITA.

O'XALAS, (from *oxalis, wood-sorrel*). OXALATS. Salts formed by the combination of the oxalic acid (*acid of wood-sorrel*; see ACETOSELLA) with different bases. These salts are decomposed by lime-water, and the precipitate is soluble in the acetous acid. Most of the alkaline oxalates are capable of combining with an excess of acid. The earthy oxalates are generally insoluble, but may be decomposed by a red heat.

OXA'LIC ACID. See CHEMIA.

OXA'LIS (from οξυς, *sharp*). See ACETOSA.

OXA'LME, (from οξυς, and αλς, *salt*). A mixture of vinegar and salt.

OXELÆ'UM, (from οξυς, and ελαιον, *oleum*). A mixture of vinegar and oil.

O'XYA, (from οξυς). See FAGUS.

OXYACA'NTHA, (from οξυς, and ακανθα, *a thorn*; from the acidity of its fruit). The BARBERRY. See BERBERIS and SPINA ALBA.

OXYCE'DRUS, (from οξυς, and κεδρος, *a cedar*; from the sharp termination of its leaves). See CEDRUS FOLIO CYPRI.

OXYCO'CCUS, (from οξυς, and κοκκος, *a berry*); *vaccinia palustris, vitis Idea palustris*. *Vaccinium oxycoccos* Lin. Sp. Pl. 500. MOOR or CRANE-BERRIES. This plant grows in marshy and rich soils, and flowers in June. The fruit is cooling and astringent; and in Sweden they are used as refrigerants. See Dale, and Raii Historia.

OXYCRA'TUM, (from οξυς, and κεραννυμι, *to mix*). OXYCRATE; vinegar mixed with a portion of water, and rendered milder by the addition of a little honey.

OXYCRO'CEUM EMPLA'STRUM, (from οξυς, and κροκος, *saffron*); a plaster containing saffron and vinegar.

O'XYDS, (from οξυς, *acid*). Substances formed by the union of oxygen with any basis; as a metal or an acid.

O'XYGEN, (from οξυς, and γεινομαι, *gignor*). The atmospheric air is composed of two aëriform fluids (see AER); one of which, oxygen, is capable, by respiration, of contributing to animal life, in which metals are calcinable, and combustible bodies may burn;—the other azot, on the contrary, is distinguished by opposite qualities. The properties of this base is to form acids by combining with many different substances: and this process is termed *oxygenation*. The union of oxygen with caloric is called *oxygen gas*, the same as was formerly called empyreal, vital, dephlogisticated, or pure air. When oxygen is united with a combustible substance, it is said the conversion of that substance into an acid is to oxygenate it. See CHEMIA.

OXYGENATED MURIATIC ACID. Muriatic with an excess of oxygen, by distilling it from any metallic oxide, particularly that of manganese. It is yellow, transparent, with a peculiar suffocating smell; apparently less acid than the common muriatic, and its oxygen is soon separated by light.

OXYDE'RCES, and OXYDE'RCICA, (from οξυς, and δερκω, *to see*). Medicines which relieve those affections of the eyes which occasion imperfect vision.

OXYDO'RCIA. See DACNERON.

OXY'GA'LA, (from οξυς, *sour*, and γαλα, *milk*). SOUR MILK.

OXYGA'RUM, (from οξυς, *acid*, and γαρον, *garum*). See GARON or GARUM.

OXYGENA'TIO, and OXYGE'NIUM. See OXYGEN.

OXYGLI'CUM, (from οξυς, and γλευκος, *sweet*). See APOMELI.

OXYLA'PATHUM, (from οξυς, and *lapathum*). See ACETOSA, and LAPATHUM ACUTUM.

O'XYMEL, (from οξυς, *vinegar*, and μελι, *honey*). Honey and vinegar, boiled together so as to form a

syrup, is called *simple oxymel* and *apomeli*. To this Hippocrates applies the term *adipson*, a preventer or allayer of thirst. (See MEL.) Oxymels of different denominations are made by macerating medicinal ingredients in vinegar, and then boiling them with honey.

O'XYMEL ÆRU'GINIS. See ÆGYPTIACUM UNGUENTUM.

O'XYMEL CO'LCHICI. See COLCHICUM.

O'XYMEL SCI'LLÆ. See SCILLA.

OXYMYRRHI'NE, or OXYMERSI'NE, (from οξυς, and μυρρινη, *the myrtle*, from its resembling myrtle.) See RUSCUS.

OXY'OPIA, (from οξυς and οφις, *vision*); a peculiar acuteness of sight usually found in fair persons, the pigment of whose choroid coats is of a light colour.

OXYPHLEGMA'SIA, (from οξυς, and φλεγω, *to burn*). See INFLAMMATIO.

OXYPHŒ'NICA, (from οξυς, and φοινιξ, *the tamarind*). See TAMARINDUS.

OXYPHY'LLON, (from οξυς, and φυλλον, *a leaf*); *cnicus* of Oribasius; but he seems to intend by it a different plant from that which we call by that name; probably a species of carthamus.

OXYPHO'NIA, (from οξυς, and φωνη, *voice*). See PARAPHONIA.

OXYRE'GMIA, (from οξυς, and ερευγω). An ACID ERUCTATION.

OXYRRHO'DINON, (from οξυς, and ροδινον, *oil of roses*). A composition of vinegar and oil of roses.

O'XYS. See ACETOSELLA.

OXYSA'CCHARUM, (from οξυς, and σακχαρον, *sugar*). A composition of vinegar and sugar.

O'XYSAL DIAPHORE'TICUM, (from οξυς, *acid*, sal, *salt*, and διαφορεω, *to perspire*). Salts with an excess of acid, prepared by Angelus Sala; but nature offers us many such in the tartar, salt of wood-sorrel, &c.

OXY'TOCA, (from οξυς, *quick*, and τικτω, *to bring forth*). Medicines which promote delivery.

OXYTRIPHY'LLUM, (from οξυς, and τριφυλλον, *trefoil*). See ACETOSELLA.

OZÆ'NA, (from οζη, *a fetid smell*). See ABSCESSUS NARIUM.

P.

P, In prescription, sometimes signifies *pugillum, pugil,* or *the eighth part of a handful;* sometimes *parts.*

P. Æ. Partes æquales. Equal parts.

PA'CAL. A tree in Peru, the ashes of which mixed with soap, in the form of an ointment, are used for the cure of leprous disorders. It is not noticed in the botanical systems. See Raii Historia.

PACHIONIA'NÆ GLANDU'LÆ. See Cerebrum.

PA'CHYS, (from *παχυνω, to incrassate).* Thick. The name of a disorder unknown to us, but which has been described only by Hippocrates, more probably by the Cnidian school. Hippocrates condemns them for multiplying the species of diseases without necessity; and of this they make four species, with symptoms very incompatible. The description of this disease, which is called *παχυ' νόσημα,* occurs indeed in the treatise, De Internis Affectionibus, which is generally accounted spurious; and the different species are certainly different diseases; for the first is an asthenic typhus, with considerable accumulations of bile, &c. in the epigastric region; and the last, the dropsy, which follows fevers of peculiar severity. See James's Medical Dictionary, and Le Clerc's Histoire de Medicine, lib. iii c. 11. page 181.

PACO-CA'ATINGA. A coniferous species of Brasilian canna, the *costus arabicus* Lin. Sp. Pl. 2. Its stalk, if chewed, occasions a spitting: if the saliva is swallowed, it is said to cure gonorrhœa in a few days; and to be occasionally lithontriptic. See Raii Historia Plantarum.

PACOEI'RA. See Banana.

PA'DRI. A siliquous tree in Malabar, not yet accurately described: the juice of the leaves is a cure for mania; that of the bark, mixed with the fruit of the pera, is supposed to restrain the menses. See Raii Historia.

PA'DUS; *prunus padus* Lin. Sp. Pl. 677; *cerasus avium nigra, cerasus racemosa;* the wild-cluster-cherry, the bird's cherry, grows on mountains, and the berries are used to hang about the necks of children as a cure for the epilepsy; and internally to cure dysentery. The bark, a narcotic bitter, and slightly astringent, has been said to cure intermittents and syphilis. (See Dale, and Raii Historia.) A name, as is said, also for the lauro-cerasus, but in reality a species of prunus, resembling the lauro cersus, so called by Clusius. See Lin. Sp. Pl. 678, where it is arranged with this trivial name.

PÆDA'NCHONE, (from *παις, a child,* and *αγχω, to strangulate).* See Angina.

PÆDARTHROCA'CE, (from *παις, αρθρον, a joint,* and *κακον, an evil).* The joint-evil; as it frequently appears about the joints of children, and oftener than in adults. Severinus calls the spina ventosa by this name; and adds, that its tumours are frequently attended with pain, redness, and all the appearances of inflammation, while the pædarthrocace has little or no pain in the beginning. But these names are used very promiscuously; and the term is sometimes applied to anasarca. Dr. Cullen places it as a variety of the first species of phlogosis, under phlogosis phlegmone. See M. A. Severinus's Treatise De Reconditâ Abscessuum Naturâ; also Spina ventosa, and Caries.

PÆDOPHLEBOTO'MIA, (from *παις,* and *φλεβοτομια, opening a vein).* The bleeding of children.

PÆNO'E, *vateria indica* Lin. Sp. Pl. 734. A large tree in Malabar; the root, bark, and fruit of which yield a resin, which is burnt instead of incense in their sacrifices. The kernels of the fruit, made into an emulsion with warm water, is supposed to strengthen the stomach, relieve nausea, colics, and cholera. See Raii Historia.

PÆO'NIA, (from *Pæon,* who is supposed to have first used it). Piony; *ephialtia, idæus dactylus, pentorobus, pæonia officinalis* Lin. Sp. Pl. 747, *α* and *β,* viz. male and female piony.

The male piony hath dark green leaves, pale-red single flowers, long thick roots, with red streaks in the stalks and pedicles; the female, longer, pale, and narrower leaves, deep-red, double flowers, and irregular roots, composed of several tuberous pieces, hanging by rough filaments from one head. The male is preferred; but the difference is inconsiderable, and the female is most frequently used. The fresh roots and seeds have a faint narcotic smell, with a slight acrimonious bitter and astringent taste; but, when dried, lose wholly, or in a great degree, both. Watery extracts are insipid, spirituous ones bitter, and slightly astringent.

Every part of this plant has been considered as antispasmodic and tonic. The roots were at first directed to be hung round the neck; and if relief did not follow, a dram of the dried root was to be taken two or

three times a day. On the continent the expressed juice is preferred. The piony is chiefly used in epilepsy; but in this country it has not succeeded, and is now neglected. The roots, flowers, and seeds, are anodyne, but their efficacy is very inconsiderable. The flowers impart their colour, smell, and taste, to water and to spirit. See Lewis's Materia Medica.

PAGA'NICA. A ball used by the Romans in their exercises; confined to the villages.

PAGI'NA, (from πηγνω, *to compose*). The superior and inferior superficies of the leaf of a plant.

PAGU'RUS, (from παγος, *a rock*, and ουρεω, *to keep*; because found in rocky places). See CANCER MARINUS.

PAHUATLA'NICA. See CHINA OCCIDENTALIS.

PAIA'NELI; *bignonia Indica* Lin. Sp. Pl. 871. A tall pod-bearing tree in Malabar, used by the natives in several disorders. See Raii Historia.

PAIDATRO'PHIA, (from παις, and ατροφια, *atrophy*). See ATROPHIA.

PAIDI'ON, (from παις, a perfect child in the womb). Hippocrates. See CONCEPTIO.

PAIN DE MADAGA'SCAR. See CASSADA.

PAI PARŒA, *couradi*; *grewia orientalis* Lin. Sp. Pl. 1367. A bacciferous shrub in Malabar. An apozem prepared of the leaves, fruit, and roots in water, is said to be useful in gout. See Raii Historia.

PA'LA. See NUX MOSCHATA. Also a tall pod-bearing tree in Malabar, *tabernæmontana citrifolia* Lin. Sp. Pl. 308; used in various disorders. See Raii Hist.

PALÆ'TYRUS, (from παλαιος, *old*, and τυρος, *cheese*). See CASEUS.

PALATI O'SSA, (from *palatum*, *palate*). The BONES of the PALATE are two, irregular, and continued up the back part of the nostrils to the orbit. These additional parts, viz. the pterygoid process, the nasal lamella, and orbitar process, we shall soon notice. The square bones situated in the roof of the mouth join each other backwards, and the maxillary bones forward; on the posterior part there is a lunated edge, whence the velum pendulum palati is suspended. The upper part of its internal edge rises in a spine, to be joined with the vomer: its anterior edge is ragged, to connect it more firmly with the process of the maxillary bone. The internal edges, by which they join, are thick and smooth. The internal point projects, for the origin of the palato-staphylinus. On the side towards the maxillary bone there is a fossa, which, applied to a similar one in the maxillary bone, forms a passage for the palatine branch of the fifth pair of nerves, and a small twig passes through a hole behind. The pterygoid process of this bone passes between the ox maxillare superius, and the pterygoid process of the os sphenoides: it is of a triangular shape, broad at its basis, and small above. The nasal process is very thin and brittle, rising upwards, covering a large part of the aperture of the maxillary sinus, and closing the cavity between the sphenoid and the projecting part of the maxillary bone. From the middle internal side of this plate, a cross ridge, resting on a similar one of the maxillary bone, extends, and on it the back part of the os spongiosum inferius rests. A perpendicular fossa, made by the palate nerve, is observable on its outside. At its superior part the os palati divides into two processes, called the *orbitar*, of which the anterior is the larger, and its fore part is contiguous to the back of the maxillary sinus: its posterior surface is cellular, contiguous to the ethmoid cells, and placed on the opening of the sphenoidal sinus, so as to leave a small hole above. Sometimes this hole is wholly in the palate bone, and through it a nerve artery and vein belonging to the nostrils pass.

The palate bones are very complete in the infant, and the nasal plates are thicker and stronger than in the adult, but the orbitar processes have no cells. In old persons, all these bones are firmly united. From the connections described, we see why the eyes are so often affected in ulcers of the palate; or why, on the other hand, the palate suffers from EGYLOPS, q. v.

PALATI'NÆ GLA'NDULÆ, (from *palatum*, *the palate*), are conglomerated glands, situated in the septum and arch of the palate, near the tonsils.

PALATI'NUS, (from *palatum*, *the palate*), is a branch of the upper maxillary branch of the fifth pair of nerves, running before the pterygoid apophyses of the os sphenoides in the canal formed by the os maxillare and os palati, and through the foramen palatinum posterius: it spreads in the glandular coat of the palate, and parts adjacent.

PALATI'NUS DUCTUS. The Eustachian tube.

PALATI'NUS PROCE'SSUS, (from *palatum*). See MAXILLARIA SUPERIORA OSSA.

PALA'TO-PHARYNGÆ'US, (from *palatum* φαρυγξ). See CONSTRICTOR ISTHMI FAUCIUM; PERISTAPHILO PHARYNGÆI; and PHARYNX.

PALA'TO SALPINGÆ'US, (from *palatum*, and σαλπιγξ, a trumpet, from its origin and shape). See CIRCUMFLEXUS PALATI.

PALA'TUM, (from *palo*, *to hedge in*, as it apparently is by the teeth). The PALATE, *cerebri basis*, *hyperoa*, is that arch of the mouth which is surrounded before by the teeth and gums, and extending backward the whole breadth of the upper part of the mouth, as far as the great opening of the pharynx. This arch is partly hard and immoveable, and partly soft and moveable. The solid part is formed by the two ossa maxillaria, and the two ossa palati. The soft part lies behind the other, and it is lined by a membrane full of small glands. When a child is born with the hare-lip, the fleshy and the long parts of the palate are sometimes defective, from a fissure, or a division through it into the nostrils; the uvula also is occasionally divided into two. In this case the child must be fed by a spoon, for it cannot suck.

PALA'TUM MO'LLE; *septum*, and *valvula palati*. Behind the bony palate lies the soft palate, from the middle of which the uvula hangs down: the two arches on each side are called *columnæ septi palati*.

PALEA, (from παλλω, *to agitate*, because easily driven by wind). CHAFF, POLLEN. In botany it is applied to the thin membrane which separates the floscules.

PALEA DE ME'CHA. See JUNCTUS ODORATUS.

PALIMPISSA, (from παλιν, *iterum*, and πισσα, *pitch*). See PIX NIGRA.

PALIU'RUS, (from παλλω, *to move*, and ουρον, *urine*). CHRIST'S THORN, or WILD JUJUBE; *œnoplia*, *rhamnus*, *zyzyphus* Lin. Sp. Pl. 282, is a species of thorn in the southern parts of Europe. The leaves and roots are moderately astringent and diuretic; but from the length of its spines it is more valuable for making hedges.

PA'LLIUM PURPU'REUM, from *pallium, a cloak*). A PURPLE CLOAK. A powder, prepared of an amalgama of gold and mercury put into a retort, where the mercury being separated, what remains is calcined with sulphur, and turned a purple colour. Basil Valentine.

PALMA, (from παλλω, *to move*). The PALM of the HAND; *thenar, ages, agostus*.

PALMA, (so called because its leaves are extended from the top like the fingers upon the hand), the PALM-TREE. The *palms* are a family of plants, which generally grow between the tropics, and furnish, with little trouble, food, clothing, and habitations.

They are remarkable from their height, from the perpetual verdure of their tops, and the abundance of their fruit. The stalk is simple and shrubby, composed of the leaves of the former growth. The green foliage of the top is ranged circularly by stages, each leaf covering the other, at its base. These leaves rise from a large bud, which terminates the stalk.

The stalk of the palm-tree does not enlarge by successive annual strata. Each leaf of a palm is formed by an elongation of the woody fibres, and the cellular substance of the trunk; and the latter is formed by the remains of leaves, which annually rise out of it. As the woody and the cellular substance, however, of the new leaves arise from the centre, they throw back the old ones. On this account the density of the trunk is greater, the nearer it is to the circumference; and when this density has arrived to a certain degree, the expansive power of the centre will have no effect in enlarging it. Such at least is M. Daubenton's explanation. Desfontaines, in an excellent memoir on the organisation of the monocotyledones, in the first volume of the Memoirs of the Institute, observes, that the size of the trunk is not always the same, but depends on the degree of nourishment. Thus, if a young palm is transplanted from a barren to a rich soil, the later shoots will be larger than the old ones, which will retain their former size, and the contrary.

Palm trees bear two sorts of leaves; the one resembling in shape a fan, others compounded of many leaflets on a common foot-stalk. Their number is usually the same in each individual. The leaflets are folded lengthwise double, resting against the foot-stalk, which is turned back. The disposition of the leaves, rising out of the trunk, resembles that of the ferns, to which the palms are related. Strictly speaking, the palms have no trunk, though rising often to the height of one hundred feet; but what has been styled so is a prolongation of the root, and the leaves are truly radical ones. The flowers are usually small, yellowish, or greenish, without any splendour. They are not provided with separate peduncles, but are collected in great numbers on common simple peduncles, naked at their base, more or less ramified or paniculated at the upper parts, to which the name of *spadix* has been assigned, and this spadix arises from the axillæ of the flowers. They are concealed before the bloom in very thick coriaceous spathæ, which, though monophyllous, are subject to be torn in two, or more pieces. Independent of this general spatha, which is not found in many of the genera, there are smaller ones enveloping each division. Few palms bear hermaphrodite flowers: they are, in general, monoicous or dioicous. In the former case, each sex is sometimes inclosed by the same spadix, sometimes by distinct ones. In each sex we find the rudiments of the other, so that palms appear monoicous or dioicous only in consequence of abortive blossoms.

Fourcroy, in the sixth number of the Annals of the Museum of Natural History at Paris, gives an analysis of the pollen of the date tree, by which it appears to contain a large proportion of malic acid already formed, which may be separated by cold water; phosphats of lime and magnesia, separated by the washing, as the acid contributes to their solution; an animal matter dissolved also in the water by means of the acid, found to be a kind of gelatine; a powdery substance, apparently covered by the former bodies, insoluble in water, and, by putrefaction, producing ammonia. Thus this pollen has a considerable resemblance to animal substances, and still more to the seminal fluid of animals, which some of the species show by the smell of the flowers. Bory St. Vincent has also shown, by an ingenious experiment, that at the moment of blooming, the antheræ of the palm trees had a temperature superior to that of the atmosphere.

The fruit of the palm is commonly a dry berry, whose shell is formed of numerous fibres, closely compacted, concealing a woody kernel, varying in its form, and sometimes equalling in size a man's head, with two or three seeds which are very hard, and inserted at the base of the kernel. The embryo is very small, situated in a cavity on the back sides, or base, of the perisperme; at first soft, often liquid, eatable, and gradually hardening to the consistence of horn.

The genera of palms are twenty-three in number, arranged in four divisions, determined by the sex of the flowers, and which may be sub-divided according to the shape of the leaves; but many are imperfectly known.

1. The palms with hermaphrodite flowers, include the Rotang, licnalis, and the corypha Lin.
2. Those with polygamous flowers, the chamærops Lin. and the raphis.
3. With monoicous flowers, the areca, the elate, and the cocos Lin. caryota, nipa, sagus, bactris, arenga, hyphœna, and euterpe.
4. With dioicous flowers, phœnix, and borassus Lin. elais, laodicea, and cleophorus.

The palms, whose sex is scarcely, if at all, known, are the mauritia, caranda, maniquana, and hyophorbis.

The palms are of the most general utility to the inhabitants of the tropics, for every part is of use. The external parts of the trunks of some species furnish a wood, hard and durable as iron, and indeed substituted for it by many savage tribes of India and America. In others, the spatha is so compact as to contain the thinnest fluids; and, in some places, vessels are made from them which will bear the fire. The trunks of the larger palms may be formed into planks, by which houses, unaltered by the air, may be built, and covered with the leaves: the latter, transformed into mats, blinds, &c. serve to adorn them within.

The fibrous pericarpium in many species, the filamentous membrane which covers the trunk in others, the leaves and the foot-stalk in almost all, furnish

threads, which may be wove into garments, twisted into cords, &c. Many subordinate advantages may be derived from these trees; fans, hats, paper for writing, a substance for artificial flowers, canes, dishes, &c. are furnished by them. Let it not be supposed that we are relating a fairy tale. They are the giants of regions where nothing is minute, where nature exerts her most active powers with the utmost energy, in the greatest and least of her productions; where all is grand or beautiful; often salutary, and generally useful.

We must not, however, in these more extensive views, overlook our more immediate object. As administering to the necessities of mankind, in the most important points of nourishment and medicine, the palms are of the greatest importance. Not one species possesses injurious properties; almost every one is salutary or useful. We find in the soft pulp of some the perisperme of the seeds of many, and the terminal bud of almost all, a wholesome and savoury food, which may be dressed in a variety of ways. The fluid found in the green spathæ, or the vast cavity of the perisperme, affords a copious and a salutary draught, from which, by evaporation, good sugar may be procured; and by the common processes, wine, spirit, or vinegar. From the pericarp, or seeds, sweet oil, or a butter scarcely inferior to that from milk, may be expressed. If the trunk of other species are split, a very wholesome fœcula, the sago, is obtained. The medicinal palms we shall notice under their proper titles.

PA'LMA A'DY. See ADY.

PA'LMA CHRISTI, and OLEUM. See CATAPUTIA.

PA'LMA COCCIFERA; *cocos, nucifera* Lin. Sp. Pl. 1658, *palma Indica coccigera angulosa, cocceira Indica, coccys, palma Indica nucifera, nux Indica.* The COCO-NUT TREE.

From this tree the Indians extract a species of sugar called *jagra*, the liquor *suri*, from which they distil the arrac. The milk in the shell of the nut is grateful and cooling. The exterior covering of the nuts, in their early state edible, are gratefully acid and gently restringent. By boiling, an oil like that from almonds is obtained from the kernel of the nut.

PA'LMA DACTYLI'FERA. See DACTYLUS PALMULA.

PA'LMA HU'MILIS. See MUSA.

PA'LMA JAPO'NICA; *sagou, palma Indica, arbor farinifera, todda, monta panna*; the LIBBY-TREE, INDIAN BREAD, or SAGO-TREE. *Cycas circinalis* Lin. Sp. Pl. 1658. The medulla of this tree, well beat in a mortar with water, forms a fæcula, which, when dried, is sago. The fruit is somewhat astringent; but this quality is moderated when eaten with sugar.

Sago is very nourishing, and used by the Indians when rice is scarce. Boiled in water it becomes an insipid, almost transparent, jelly, readily soluble, and an useful aliment in weak constitutions and consumptive complaints. It is demulcent, never ferments in the stomach, and is therefore preferable to wheat flour for the food of infants.

PAL'MA MA'JOR. See DACTYLUS, and DACTYLUS PALMULA.

PA'LMA MINOR, *palma humilis dactylifera & Hispanica spinosa, & non spinosa, palmites, chamæriphes, chamærops humilis* Lin. Sp. Pl. 1657. The DWARF PALM. Its fruit is astringent.

PA'LMA NO'BILIS, *regulis Jamaicensis & Barbadensis, palmiste, palmeto royal*, a species of *areca*, Lin. Sp. Pl. 1659, styled *oleracea*. The CABBAGE-TREE; the cabbages of which are called *chou de palmiste*. It is a tall straight tree, often more than two hundred feet high. The terminal bud is a white, tender, savoury, medullary substance, which, if eaten raw, resembles a walnut, but boiled and pickled with the white leaves, which surround it, is one of the greatest delicacies in the Leeward Islands. In the Isle of France, where it is chiefly found, there is another species which is poisonous. See Raii Historia.

PA'LMÆ O'LEUM is produced from the PALMA *foliorum pediculis spinosis, fructu pruniformi luteo oleoso*. PALMA SPINOSA *minor fructu pruniformi*, &c. of Brown, called in Jamaica the MACKAW-TREE. He observes that the rind of the fruit is thick, and yields a fattish substance, not unlike or inferior to the real palm-oil. The fruit of the great mackaw-tree differs but little from that of the little mackaw-tree, and the husks of the fruit are also full of oil. He adds, that the negroes say it is the tree which yields the true palm-oil. In the Pharmacopœia of the Edinburgh college this species is described as being the *palma foliorum pediculis spinosis, fructu pruniformi luteo oleoso*. Sloane's Jamaica, and Adanson's Senegal. Mr. Curtis, in his Catalogue of Medicinal, &c. Plants in the London Botanical Garden, calls the tree *palma oleosa* Lin.; but it has been more lately referred to the genus cocos, with the trivial name of *butyracea*. The tree is tall and unbranched, with long-winged leaves, furnished with two ranks of simple leaflets. Several species of it are met with in the warmer countries. The fruit is pressed, or first bruised, and then boiled in water; by either of these methods an oil of the consistence of butter is obtained, and eaten by the inhabitants of Guinea, and the Cape Verd islands. It is of a strong, but not disagreeable, smell, and hath but very little taste. The colour, whilst good, is of a deep yellow inclined to red; but by long keeping it becomes pale, and is then to be rejected. There is indeed some little inconsistency in the different accounts, which may be reconciled, by supposing that a sweeter butter, which will not soon become rancid, may be prepared without pressure. This oil is used when mixed with some warm penetrating ingredients to rub on parts affected with old pains, and in some nervous disorders.

PALMA'RIS BRE'VIS, and CUTA'NEUS, (from *palma*). *Caro musculosa quadrata* of Brown. Cananus pointed out this muscle to Fallopius, and it was first published by Valverda, in his Anatomy. It rises from the fascia of the annular ligament, runs across the ball of the little finger, and is inserted into the os pisiforme, and lost in the skin and fat that cover the abductor minimi digiti.

PALMA'RIS LO'NGUS, (from the same); *ulnaris gracilis*. This muscle lies on the inside of the extensor carpi radialis, and, rising tendinous from the inner condyle of the os humeri, soon becomes fleshy, and then again unites in a long slender tendon, which, near the wrist, separates into two portions, one of which is inserted into the internal annular ligament, and the other loses itself in the aponeurosis palmaris. Some of the fibres of this muscle adhere to the metacarpal bones, and the first joint of the fingers. It bends the hand, and stretches the aponeurosis palmaris.

PALME'TO RO'YAL, and PALMI'STE. See PALMA NOBILIS.

PALMITES. See PALMA MINOR.

PA'LMOS, (from παλλω, *to beat*). A PALPITATION OF THE HEART. See PALPITATIO.

PA'LMULA, (a dim. of *palma, the hand*). A DATE. The name also of the broad and flat end of a rib; from *palma*.

PA'LPEBRÆ, (*à palpitando*, from their frequent motion). The EYELIDS; *blephara*; are connected to the circumference of the socket by the tunica conjunctiva (see ADNATA); and composed of the common teguments, a cartilage called *tarsus*, and an external membrane. They have two angles or corners styled *canthi*, one small and external, the other large and internal. The form of each eyelid is that of a segment of a large circle, and when both eyelids are shut they make an uniform arch, adapted to the convexity of the eye, and in contact with it; but when shut, their edges leave a very minute opening, narrow toward the outward and wider toward the inner angle, serving to conduct the tears and the sebaceous matter to the lachrymal points. The margin, or basis of each eyelid, is a cartilage of a considerable thickness, divided into the outer and inner edges; but the outward edge only of each lid is supposed to join when they are shut, the inner edge forming by its obliquity the channel first mentioned. This margin is called the tarsus, of which that in the upper eyelids is the broadest; and the edges furnished with hairs are called *cilia*. The cutis is very thin, and almost transparent on them. On the internal edge of each lid in the tarsus is a row of small holes, which are the excretory ducts of the ciliary glands. From the upper edge of the upper tarsus, and the inferior of the lower, is contained a membranous expansion to the neighbouring edges of the orbit; each of those membranes, together with its respective tarsus, has the form of the eyelid to which it belongs, and is called *ligamentum tarsi*. The ligaments of the eyelids are reckoned to be three: from the inner angle, to the nasal process of the os maxillare superius, we see one which is the tendon of the orbicularis; at the external angle we see another ligament more diffused on the bony brim, blended with the cellular membrane; a third goes all round, proceeding out of the brim of the orbit from the periosteum. The broad ligaments of each tarsus are membranous elongations, formed by the union of the periosteum of the orbits and pericranium along both edges of each orbit. The superior is broader than the inferior, and each is fixed to the edge of its cartilage.

In man the superior palpebra has much more motion than the inferior. *Twinkling* is the effect of the alternate contraction of the levator palpebræ and orbicularis. The inside of the eyelids are lined by the ADNATA, q.v. The muscles subservient to the motions of the eyelids are the orbicularis, and levator palpebræ superioris; and these, as well as the lids, are furnished with branches from the angular, temporal, and frontal arteries, which communicate with those sent to the internal membrane of the eyelids. The levator palpebræ receives a branch from the internal maxillary artery. The veins correspond very nearly with the arteries, and carry their blood into the external jugulars, by means of the veins in the temples and face. The nerves proceed from the ophthalmic branch of the fifth pair, from the superior maxillary branch of the fifth pair, and from the portio dura of the seventh pair; the levator palpebræ superioris receives a branch from the third pair. The eyelids defend the eyes from the light during sleep; and preserve the eye from becoming dry by their frequent motion, which spreads the tears over the external surface of the globe. See LACHRYMALES GLANDULÆ, LACHRYMALIA PUNCTA.

PALPE'RIA. See APOPLEXIA.

PALPITA'TIO, (from *palpito, to vibrate*). *Palmos* of the Greeks. Dr. Cullen places it among the *spasmi*, defining it a violent, irregular motion of the heart. The only species is the palpitatio cardiaca; a palpitation almost constant, at least often returning, without any other evident disease. The arthritic, chlorotic, hysteric, melancholic, and febricose palpitation, with some others, are species; but rather symptomatic.

There is a morbid chronical palpitation of the heart, when violent, called *diogmus*; and in persons otherwise healthy the disease may be occasioned by strong passions, surprise, violent exercise, &c. Actuarius distinguishes palpitation owing to plenitude or heat in the blood, from the disease in consequence of vapours. In the first, he says, the pulse is unequal; in the latter unaffected.

Those most subject to palpitation are of a sanguine temperament, very mobile and irritable, of delicate minds, and in whom natural or artificial evacuations have been suppressed.

Palpitation may be owing to general mobility when the heart shares in the irritability of the whole system, or from any disease of this organ or the larger vessels in its vicinity. A common, though often an unsuspected, cause is, accumulations in the stomach and bowels; and in our experience it has brought on the disease in sixteen of twenty. Plethora will alone often produce it; for this is a very frequent cause of increased irritability. See PLETHORA; and MORBI FLUIDORUM.

The more remote causes are organic diseases of the heart, or the distant parts. Of the first kind, the most frequent and considerable are polypous concretions in the ventricles or auricles of the heart, sometimes extending to the veins, or the arteries, according to their situation; ossifications in the heart, which sometimes are found in its substance, frequently in the valves shooting out in little processes resembling crystalisations; aneurisms of the heart or larger vessels; dropsy of the pericardium, sometimes of the chest.

The more distant causes are, costiveness; obstructions in the circulation through the abdominal viscera; repelled gout or eruptions; disturbances of mind; intense thought; particular odours; flatulent aliment, or indigestion. It is not easy to see how these causes operate, except by increasing general irritability; and indeed those which immediately affect the heart would appear rather to produce a tardy circulation than spasm, but, in a muscle regularly acting, every cause of irritation, every thing which disturbs that regularity, produces in a certain degree spasm or convulsions, as we perceive in the stomach and bowels, in the eye, and occasionally in the urethra. See POLYPUS.

The disease frequently intermits, especially while at

rest; but from any cause of agitation or increased circulation it returns: the pulsations are sometimes so great that the motions of the heart may be perceived on the outside of the clothes. Sometimes it attacks during sleep, and awakens the patient suddenly; often only during the day, and is worse after eating; occasionally preceded by anxiety or uneasiness in the precordia. In the paroxysm of palpitation, the breathing is difficult; and though the pulse intermits, it does not correspond with the motion of the heart, but is languid and diminished. In a violent paroxysm, a great uneasiness is perceived in the region of the precordia; and a considerable languor of the body, with a tremor of the joints, remains after the paroxysm is over. When from polypous concretions in the heart, the palpitation is immediately increased after violent exercise, or the slightest increase of the circulation; and indeed this is the case when any enlargement of the vessels of the heart, or any contraction of the cavities around, takes place; and in such circumstances a flushed or even a livid countenance, with sense of suffocation, and fainting, also occur. When a redundance of blood is the cause, the countenance is florid, the vessels turgid, and the pulse full. In a very violent paroxysm the pulse is peculiarly slow, and the longer the intervals, the more strong are the attacks.

A palpitation of the heart should be distinguished from that which is perceived in women about the last months of pregnancy in the epigastric region, and which is only a pulsation of the cœliac arteries, in consequence of too much blood being conveyed through them. One remarkable symptom attending a violent palpitation of the heart is an acute pain immediately above the right orifice of the stomach, which is easily accounted for when the course of the right phrenic nerve, round the apex of the heart, already described, is considered.

When palpitation frequently returns, continues long, or is violent, it often ends in a fatal syncope, or a suffocation. An unequal pulse, or difficulty of breathing attending the paroxysms, are dangerous circumstances. When the disorder is idiopathic, there is very little dependence on any remedy; when symptomatic, as is most frequently the case, the cure is often easily effected by the removal of the original complaint. When it proceeds from terror, and returns often, it produces polypi, which again may increase the disease, and at last produce a fatal termination. Palpitations attend various diseases, and always increase their danger.

The complaint is best relieved by keeping the mind and body at rest, avoiding every cause of irritation, mental or bodily, and keeping up a proper equilibrium of the circulation. All ligatures should be avoided, and the clothes made easy. The patient should never continue long in the cold; and, when the fit approaches, a clyster should be instantly administered, and the extremities rubbed.

During the paroxysm, bleeding is often necessary, except the cause be debility or relaxation. In these circumstances warm cordials are more salutary. An emetic, with repeated cathartics, should be early employed, for the reasons assigned; but, in full plethoric habits, bleeding should be premised, unless the fulness be accompanied with peculiar irritability. In full and irritable habits the diet should be carefully regulated. It should not be of vegetables, because of their flatulence, nor of strong animal foods. The meat of milder, young, animals will be the best, and, in such cases, fish may be also allowed. When, by this means, and gentle laxatives, there is less danger from emetics, these should be also given.

With a view of keeping the circulation in its due equilibrium, besides gentle laxatives, nitre, with small doses of camphor, may be given, and Hoffman's anodyne liquor is often serviceable. Opium, where it does not produce restlessness, is highly useful, and may be joined at night with the camphor. The feet should be kept dry and warm, frequently rubbed, and if not otherwise warm, with powdered mustard-seed. When it does not yield to the evacuations, and has followed suppressed gout and evacuations, a perpetual blister, or a seton, with warm cordials and tonics, are often necessary, and essentially useful.

In the intervals, the bark, with valerian, perhaps the arsenic, will be useful, especially if any considerable irritability of the system accompanies the disease; and could it be certainly ascertained that no fixed obstruction occurs in the heart, or larger vessels, the cold bath also in the intervals would greatly contribute to prevent the return. Steel, as a tonic, has been advised; but its stimulus is too inflammatory, and our utmost exertions should be employed to keep the circulation tranquil. All violent emotions should be avoided, and the external heat regulated with the utmost caution. The room should be large and airy, the head raised, the bed covered with a mattress, and the coverings slight. On the access of a fit, the volatile tincture of valerian may be given, unless the disease proceeds from an affection of the heart; and, in that case, the extremities should be rubbed, and every means tried to assist the circulation in the most distant branches. The stimuli then employed should be chosen with care, and perhaps the camphorated julep with æther will be the best, as it combines an antispasmodic power with a stimulus, not very diffusible. The event of such cases, however, is often sudden and fatal.

See Actuarius, Hollerius, Sennertus, Lommius, and Hoffman; Cullen's First Lines, vol. iii. p. 372. edit. 4; Memoirs of the Medical Society of London, vol. i. p. 77.

PALUDA'PIUM, (from *palus, a lake*, and *apium, smallage*; because it grows in moist places, and near rivulets). See APIUM.

PA'LUS SA'NCTUS, (from its woody texture, and the numerous virtues ascribed to it). The HOLY POST. See GUAIACUM.

PAMPINIFO'RMES, (from *pampinus, a tendril*, and *forma, likeness*). See DUCTUS THORACICUS.

PANACE'A, (from πᾶν, *all*, and ακος, *a remedy, an universal medicine*). There are many panaceas in most of the former dispensatories, for the ancients were particularly anxious to cure all diseases with a single medicine, among which we may notice

PANACE'A DUPLICA'TA. See NITRUM.

PANACE'A LAPSO'RUM. See ARNICA MONTANA.

PANACE'A MERCU'RII. See MERCURIUS DULCIS SUBLIMATUS.

PANACE'A VEGETA'BILIS. See CROCUS.

PANACE'A MOSCHA'TA. See HERBATUM CANNADENSIUM.

PANA'DA, *quasi* PANA'TA, PANATE'LLA, (from *panis, bread*). Bread boiled in water, to a proper consistence, as food for children, in febrile complaints, and in states of considerable debility. It should be made from bread thoroughly baked, from baked flour, or rusks. Salt is a better condiment than sugar.

PANARI'TIA. See PARONYCHIA.

PANA'VA. See GRANA TIGLIA.

PA'NAX. Synonymous with panacea. See PASTINACA OLUSATRA.

PA'NAX ASCLE'PIUM. See FERULA GLAUCO FOLIO and MINOR.

PA'NAX CHIRO'NEUM. See CHAMÆCISTUS.

PA'NAX COLO'NI, *stachys palustris fœtida; galeopsis angustifolia fœtida; sideritis Anglica, strumosa radice; galeopsis palustris betonicæ folio, flore variegato; marrubium aquaticum acutum; tertiola Cæsalpini, stachys palustris* Lin. Sp. Pl. 811. CLOWN-WOUND-WORT, or ALL-HEAL. This and some other species of stachys have been used as astringents.

PA'NAX CO'STINUM, HERA'CLEUM, HERCULE'UM, PASTINA'CEA. See OPOPONAX, and PASTINACA OLUSATRA.

PA'NAX QUINQUEFO'LIUM. See GENSING.

PANCHYMAGO'GUM (from πᾶν, χυμος, *humour*, and αγω, *to bring away*). The name of some cathartic extracts, supposed to carry off fluids of every kind.

PANCRA'TIUM, (from πᾶν, and κρατεω, *to conquer*); a gymnastic exercise consisting of wrestling and boxing. The SEA-ONION; named from its power in overcoming all obstructions.

PANCREAS, (from πᾶν, and κρεας, *flesh*); *callicreas; pancrene.* The SWEET-BREAD; a long, flat, conglomerate gland, situated transversely in the duplicature of the posterior portion of the mesocolon, reaching from the duodenum to the spleen, and in shape resembling a dog's tongue. Its head lies in the first curvature of the duodenum, and from thence it runs across the spine to the spleen behind and below the stomach, to the last curvature of the duodenum. There is a natural cavity into the epiploon, between the lower sides of the stomach, and the upper side of the mesocolon; and here the arteries, veins, and nerves enter, and the cystic and hepatic ducts come out to form the ductus communis choledochus, which goes into the duodenum near the pancreatic duct. The vessels of the pancreas come from those of the spleen, which run along it. That head next the duodenum hath vessels from the mesenterica and gastrica dextra. The substance of this viscus, composed of united masses which occasion an uneven surface, is that of the conglomerate gland; in the whole length of the gland is a duct called ductus Wirtsungii, from its discoverer, but generally spoken of by the name of ductus pancreaticus: it is white and almost transparent, beginning towards the spleen; and receiving branches, it grows larger, and proceeds into the duodenum, in the same canal as the biliary duct. The branches are large near the trunk, and smaller at the edges, but always lie in the same plane. The duct is sometimes double, sometimes winding, and generally nearest the lower side; very thin, without valves; and does not always go out jointly with the biliary duct, but seldom otherwise. Malpighi makes the pancreas a cluster of vesiculæ; Ruysch finds these vesicles to be vascular. The nerves come from the plexus hepaticus, plexus splenicus, plexus mesentericus, &c. The pancreatic juice resembles the saliva, but is less viscid, an contains a larger proportion of salts. All the pancreatic juice is sent into the duodenum, and is secreted most when the stomach is fullest. This viscus is subject, like the spleen, to inflammation; but this disease has no appropriate distinguishing symptoms.

PA'NCREAS MI'NUS. Where the great extremity of the pancreas is connected to the duodenum, it sends out an elongation, with a distinct duct in it, which opens into the duodenum.

PANCREA'TICÆ ARTE'RIÆ, (from *pancreas, the sweet-bread*). The splenic artery runs from the cœliac, under the stomach and pancreas, to the spleen: it adheres to the lower posterior part of the pancreas, to which it gives several branches called *pancreaticæ arteriæ.*

PANCREA'TICÆ VE'NÆ, (from the same). They are several branches from the splenica, which run to the pancreas along its lower side. There are other small pancreatic veins which do not arise from the splenica.

PANCRE'NE, (from πᾶν, and κρηνη, *a fountain; from its great secretion*). See PANCREAS.

PANDALITIUM. See PARONYCHIA.

PANDE'MIUS, (from πᾶν, and δημος, *a people*). See EPIDEMICUS.

PANDICULA'TIO, (from *pandiculor, to gape* and *stretch*). STRETCHING; *distentio*; is that restless stretching and uneasiness which accompany the cold fit of an intermitting fever, and one of the irregular actions from debility.

PANI'CULA. A PANICLE. A stalk diffused into several pedicles, sustaining the flowers or fruits, like the oat, millet, &c. Panicula is also a diminutive of panus, a species of tubercle; and a name for crude bile.

PA'NICUM, (*à paniculis*, from its many panicles); *elymagrostis; elymos;* COMMON PANIC; *panicum dactylon* Lin. Sp. Pl. 85. The spike consists of innumerable thick seeds, disposed in lesser spikes, so as to appear like a cluster. It is cultivated in Germany; and the seeds have been used as food, but are not regarded in medicine. See Raii Historia.

PA'NIS, (from πάω, *to feed*). BREAD; *artos, farinacea panis.* Good bread should be composed of flour well kneaded with the lightest water, seasoned with a little salt, fermented with the yeast, and sufficiently baked. The viscidity of unfermented bread, called *duratos*, is destroyed by fermentation; and the bread is thus rendered more digestible, but at the same time inclines the substances fermented to acidity, whence unfermented bread only can be proper where acidity abounds in the stomach. (See BREAD.) To this article we have little to add except the kinds distinguished by ancient authors. The purest and best bread was styled *panis siligineus, mundus, athleticus; isungia coliphius,* and *robys.* The next in quality, from which the bran was not wholly sifted, had the appellations of *secundus, similaceus,* or *similagineus;* the third, containing the whole of the bran, was styled *autopyrus, syncomastus,* and *confusaneus.* A fourth kind consisted wholly of bran, and was styled *cacabaceus, sordidus, furfuraceus,* or *furfuratitus, bissus,* and *leibo.*

PA'NIS CANINA'CEUS. See CANICÆ.

PA'NIS FURFURA'CEUS, IMPU'RUS, A'TER, CIBA'RIUS, GREGA'RIUS. See COLIPHIUM.

PA'NIS CU'CULI. See ACETOSA.

PA'NIS PORCINUS. See ARTHANITA.

PANNI'CULUS ADIPO'SUS. See CELLULOSA MEMBRANA.

PANNI'CULUS CARNO'SUS. A fleshy membrane which assists the corrugation of the skin, found, with a very few exceptions, only in brutes.

PANNO'NIUM. See ARTHOICUM.

PANNO'NICA, (from *pannus, a rag*). See HIERACIUM ALPINUM.

PA'NNUS, (from πονεω, *to labour*). WOOLLEN CLOTH; synonymous also with albugo, and with a venereal spot.

PANO'CHIÆ. See BUBO.

PANOPHO'BIA, (from παν, and φοβεω, *to fear*). MELANCHOLY, attended with groundless fear. See MELANCHOLIA.

PANTARBE. An imaginary stone, supposed to be capable of attracting gold as the magnet attracts iron.

PANTI'CES. See INTESTINA.

PA'NULA, or PA'NUS. A sort of crude bile.

PA'NUS. See PHYGETHLON.

PAO-A'GULA. See AGALLOCHUM.

PA'PAGA and PAPAGA'LLI. Names for the seeds of bastard-saffron, denominated from the magpies eating them.

PA'PAS. See BATTATAS.

PAPA'VER A'LBUM; *papaver hortense semine albo; somniferum, α*, Lin. Sp. Pl. 726; WHITE GARDEN POPPY; *papaver somniferum album*. The watery extract of this plant is chiefly used, and it amounts to about one-fifth of the weight of the poppy heads boiled. It is said not to produce a nausea or giddiness, which generally follows the use of opium; and the dose is about double that of the latter. It is supposed to check a diarrhœa as well the Asiatic opium, but does not so powerfully check expectoration; but in reality it seems only to be weaker. The seeds, without a portion of farinaceous, contain a great quantity of oily, matter, obtained copiously by expression, which has been employed both in diet and medicine. In the former also the seeds have been used in considerable quantity, without the least trace of a narcotic quality. A cataplasm is formed of the heads, and applied to parts in an irritable or a painful state.

The cataplasm of white poppy is made in the usual way with a strong decoction of white poppy heads; and may be rendered more sedative, if necessary, by adding a solution of opium, or the extract.

In the fomentation of white poppy, four ounces of the heads are added to six pints of water reduced by boiling to a quart.

The syrup of white poppy is made in the following manner: take of the heads of dried white poppies, without their seeds, three pounds and a half; of water, eight gallons. Slice and bruise the heads, and boil them in the water to three gallons; in a water bath saturated with sea salt, reduce it by boiling to about four pints, and strain while hot, first through a sieve, and then through a thin flannel: set it by for a night, that the fæces may subside; boil the liquor poured from the fæces to three pints, and dissolve six pounds of double refined sugar in it. Pharm. Lond. 1788.

This syrup is given to children in doses of from ℥ss. to one dram or more; to adults of an ounce and a half. In general an ounce of this syrup is equal to one grain of opium; but it is subject to great variation in point of strength, from the different degrees of maturity, and the soil and seasons in which the poppy heads are produced. See OPIUM.

PAPA'VER CORNICULA'TUM LUTE'UM. See CHELIDONIUM MAJOR.

PAPA'VER NI'GRUM; *papaver hortense nigro semine, papaver somniferum* Lin. var. *β*. BLACK GARDEN-POPPY, as the seeds are black.

These plants are often found wild, and several varieties are produced by culture in our gardens. The head, stalks, and leaves, have an unpleasant smell, and a bitterish pungent taste, like opium. The smell and taste are lodged in the milky juice of the cortical part of the heads, which is collected in the manner already described. (See OPIUM.) It is, however, weaker as a medicine though stronger in smell and taste. The juices obtained from the white or the black poppy are the same; but the white affords the largest quantity. The seeds contain an insipid oil, obtained by expression, without any narcotic quality.

PAPA'VER RU'BRUM; *rhœas*, and *erraticum; calocatanos*; CORN-ROSE; WILD POPPY; *papaver rhœas* Lin. Sp. Pl. 726. This plant hath deep red flowers, dark-coloured seeds, hairy leaves and stalks; is common in corn-fields, and sometimes varied by culture. The heads contain a narcotic juice similar to the preceding, but in a very small quantity. The leaves of the flowers, on expression, yield a deep red juice, which they impart to watery liquors, and a bright though pale red to rectified spirit. The London College orders a syrup to be made in the following manner.

Take of the fresh flowers of the wild or red poppy, four pounds; boiling distilled water, four pints and a half: put the flowers by degrees into the boiling water, in a water-bath, constantly stirring them. After the vessels are taken out of the bath, macerate them for twelve hours; press out the liquor, leaving the fæces to subside. Lastly, make it into a syrup with double refined sugar. Pharm. Lond. 1788. This syrup has been thought useful as an anodyne and pectoral; but it is more employed for the beauty of its colour.

PAPA'VER SPINO'SUM; *argemone Mexicana* Lin. Sp. Pl. 727. PURGING THISTLE. Its juice is called *glaucium*, and is used as a cooling external medicine.

PAPA'VER SPUME'UM. (See LYCHNIS SYLVESTRIS, BEHEN ALBUM, PEPLION, or PEPLOS.) *Euphorbia peplis* Lin. Sp. Pl. 652. See EUPHORBIA; Lewis's Materia Medica; Neumann's Chemistry.

PAPAYA MAS ET FŒ'MINA; *papaya Peruvianis, papayamarum, platanus, mamæra mas et fœmina*. MALE and FEMALE PAPA-TREE. *Carica papaya* Lin. Sp. Pl. 1466, nat. order *cucurbitaceæ*. The fruit resembles a melon; it is eaten raw, sometimes with vinegar, or prepared with sugar, and is said to strengthen the stomach.

PAPILIONA'CEA, (from *papilio, the butterfly*). PAPILIONACEOUS. Flowers are thus called from their resemblance to the wings of a butterfly when expanded; irregular and usually four-petalled. The lower petal is shaped like a boat, and called *carina* or *keel*; the upper petal, which spreads and rises upwards, *vexillum, standard*, or *banner*; the two side ones separated by the keel are called *alæ*: the keel is sometimes split, and then this corolla is properly five-petalled. These flowers form a natural class, named *papilionaceæ*; and are

chiefly comprehended within the order *decandria*, of the class *diadelphia*, in the artificial system. This is one of Tournefort's classes, and is the *leguminosa* of Ray and other authors. Of this tribe are peas, beans, kidney-beans, vetches, and other leguminous plants, hence called pea-blossomed flowers. See Miller's Dictionary; Martyn's Language of Botany.

PAPILLA, (from *pappa, a dug*). The NIPPLE; *mamma* and *mamilla*; the little eminences on the breast. In children of both sexes, and in males of all ages, they appear to be no more than cutaneous tubercles; but, in reality, their structure is the same, but the parts are not evolved. In females arrived at the age of puberty the nipple begins to increase; in pregnant women, and those who give suck, it is large; in old age it decreases, and becomes flabby. The body of the nipple seems to consist of extensive elastic fibres, containing the terminations of the tubuli lactiferi. Their convolutions act as valves: but when distended, as the nipple is drawn out, they become straight; the breast also is equally elongated, and its convoluted vessels become straight, so that the milk flows freely. The lactiferous tubes are about twelve or fourteen in number, and pass out from the apex in as many apertures. Its surface is uneven, wrinkled, and covered, like the inside of the mouth, by a very soft, thin, epidermis.

The nipples are sometimes flat, sometimes drawn in. When flat, which was formerly more common from wearing tight stays, they were with difficulty drawn out, and the suction of a strong child was necessary. The retraction of the nipple seems to be owing to adhesion of some of the convoluted fibres, which has taken place at early age, so that the breast has swelled beyond it. It is drawn out by the suction of glasses, and often with great pain.

Excoriations of the nipples is a most distressing complaint. It is more common in the first than in subsequent nursings, and, when independent of any disease in the child's mouth, is owing to the unusual irritation of the new stimulus. In many instances bathing them with a little port wine or brandy will succeed. A more effectual remedy is the tincture of opium, which can be more easily washed off, while the salts of iron and of zinc are often deposited in the rugæ of the nipple, and with difficulty removed. A remedy extremely simple, and said to be certain, was given us by an old woman. When the child has done sucking, the nipple is to be sprinkled over with equal parts of finely-powdered gum-arabic and sugar of candy. This absorbs the acrimonious fluid, and defends the breast. When the child also takes hold of the nipple, he is attracted by the sweetness and the irritation given by taking hold, and capriciously dropping the nipple, in which the pain chiefly consists, is avoided. By this term Peyer calls the intestinal glands.

PAPI'LLÆ CAPITA'TÆ, LENTICULA'RES PYRAMIDA'LES. See LINGUA.

PAPI'LLÆ MEDULLA'RES. *Tubercula mamillaria.* Small eminences on the medulla oblongata.

PAPI'LLÆ PYRAMIDA'LES, are observable on the surface of the skin. They are longer in some parts, as in the fingers, and called *villi*, appearing in rows, each having two ranks contiguous. They are the organs of touch, being the terminations of the cutaneous nerves, each of which is inclosed in two or three membranous coverings. See CUTIS.

PAPILLA'RE OS, (from its resembling a *papilla*). See SPHENOIDES OS.

PAPILLA'RES CARU'NCULÆ. See CARUNCULA.

PAPILLA'RES PROCE'SSUS. The extremities of the olfactory nerves entering the mucous membrane of the nose.

PAPILLA'RIS HERBA. See LAMPSANA.

PAPILLO'SUS. A leaf, whose surface is covered with little points or protuberances like nipples.

PA'PPAS, PA'PPUS. POTATOES. See BATTATAS. The down also of the seeds of plants, which are hence called *pappose*, or *pappescent*.

PA'PPOS. PATERNAL. The downy hairs upon the chin.

PA'PULA, (a dim. of *pappa*). A PIMPLE or ULCEROUS TUBERCLE. A very small and acuminated elevation of the cuticle, with an inflamed base, not containing a fluid, nor tending to suppuration.

PA'PULÆ. This term is applied to a variety of different eruptions by medical authors; but confined by Dr. Willan to those enlargements of the papillæ of the skin, occasioned by a strong determination of the blood, sometimes attended with a degree of inflammation; the small papillæ, thus enlarged, elevating the cuticle immediately above them, and appearing red. A slight effusion of lymph often takes place in these circumstances, and gives a pustular form to several papulæ; but the fluid does not break the cuticle, and the pimple does not suppurate. The duration of papulæ is uncertain, but they usually terminate in scales. Of this order he enumerates three genera, which with their species are STROPHULUS *intertinctus, albidus, confertus, volaticus,* and *candidus*: the second, LICHEN *simplex, agrius, pilaris, lividus,* and *tropicus*: the third, PRURIGO *mitis, formicans,* and *sensilis*. Vide in verbis.

PAPY'RUS, (from παπυρος, *an Egyptian term*). The PAPER-TREE; *papyrus Nilotica Alpina, Egyptiaca; Cyperus Niloticus* vel *Syriacus. Cyperus papyrus* Lin. Sp. Pl. 70. This tree afforded to the Egyptians food, boats, furniture for beds, and other utensils in houses, sails for ships, shoes for priests, and paper. The paper of modern times is, we know, made of flax, first woven into cloth. We have mentioned under ODONTALGIA its OIL; and have only to add, that the magma of which paper is made, or into which it may be reduced by maceration in water, is recommended in diarrhœas. See Maryatt's Art of Healing, p. 40, 41.

PAR, (παρ, *equal, even*). A PAIR. Some vessels are called *sine pari*; because there is no corresponding one on the other side.

PAR CUCULLA'RE. See POSTICI.

PAR LINGUA'LE. The ninth pair of nerves from the head.

PAR MENTA'LE. See LEVATORES LABII INFERIORIS.

PAR VA'GUM. The eighth pair of nerves from the head, *nervi vagi*, and *sympathetici medii*. This pair is made up of several small chords which come from almost the whole length of the medulla oblongata, and when joined with the accessorius Willisii, a small chord running up laterally from the medulla spinalis, pass through the foramen to join this pair, which goes out

by that common hole between the temporal and occipital bones, where likewise the internal jugular vein goes out of the cranium. The par vagum goes down the neck, by the side of the carotid arteries, and behind the internal jugular, and is accompanied by the intercostal nerve to the last cervical vertebra. In the neck the par vagum sends off the lingual and superior laryngeal branch; thence passes down into the thorax, gives branches to the pharynx, larynx, &c. and joins many nerves. As they enter the thorax they go across the subclavian arteries, and, as the right trunk passes before the subclavian, it sends off a twig, which bends backwards under the artery, and runs up the side of the aspera arteria; called the *recurrent nerve*. Afterwards the par vagum runs down behind the lungs, to which they give a plexus, and then form two chords, one anterior, the other posterior, called *nervi stomachici*, which pass along the œsophagus through the aperture in the diaphragm, and are dispersed on the stomach, &c. See NERVI.

PA'RA. A Greek preposition, often signifying in composition, *disease* merely; sometimes, *beyond* and *besides*. It occasionally increases and sometimes diminishes the force of the word compounded with it.

PARACE'NTESIS, (from παρακεντέω, *to make a perforation*), *compunctio*, TAPPING; an operation employed for discharging water through the integuments of the belly from its cavity. The place formerly appointed for the perforation is about four fingers' breadth from the navel, or rather in the middle betwixt the navel and the upper part of the os ilium. The left side is usually preferred, as the spleen does not extend so low as the liver. Mr. Sharp observes that, if the navel protuberates from water only, a small puncture made in the tumour with a lancet will discharge the water, without endangering a rupture. The signs of ascites, and the distinction between it and the pregnant state, we have already considered. (See ASCITES.) It is now only necessary to remark, that in the young and robust this operation may be performed; but when fever, schirrus, or abscess, concur, it should be omitted. In exhausted constitutions, in consumptions when attended with jaundice or with general dropsy, if allowed, it should be only for temporary benefit, and the patient should be apprised that nothing more can be expected.

If the extravased fluid remains in the same proportion for several years, particularly if the health in other respects is good, the evacuation is a radical cure, provided that the health is otherwise unaffected; but while the bulk of the water increases, there is not that confidence of a radical cure.

Upon a sudden evacuation of the waters in a hydrops pectoris, or in an ascites, deliquium ensues, because when the pressure of the water is taken off, the flow of blood into the descending aorta leaves the vessels of the brain not sufficiently supplied.

In this operation, therefore, it is proper to have, 1. A roller of flannel, or a flannel laced about the belly, previous to the evacuation of the water, that it may be tightened at pleasure, and the bowels pressed against the diaphragm. 2. A piece of flannel, for a compress about a foot square. 3. A sufficient quantity of proof spirit, to moisten the roller and compress. 4. A piece of sticking plaster about two inches square, to lay over the pledgets of lint. 5. The trochar with its canula, and a probe to thrust back any thing that may obstruct its mouth. 6. Two assistants, to keep a proper pressure, observing to press from behind, and on the sides, rather forward, continuing this pressure during the time that the water is passing off, until the roller or the laced flannel is securely applied.

A flat trochar is now preferred; and, when the bandage is prepared, the trochar is introduced, pressing on its end with the palm of the hand. It was usual first to perforate the skin, that the impetus in overcoming the resistance might not carry the instrument too far; but a check is sometimes affixed to the canula, though, in general, pressing on it with the fingers, about an inch from the extremity, will be sufficient, and the want of resistance will show when it has reached the cavity. The trochar should not be small, as the fluid is sometimes glutinous, and a blunt probe should be occasionally introduced, if there is any interruption to the flow. Should the resistance be very great, after penetrating the integuments, it is probable that the water is contained in a cyst; and, in that case, the abdomen will not be completely emptied. It is then advised to tap on the other side, as a cyst is seldom single; but in this variety of the disease, the operation is useless; nor is it certain that on the other side we may certainly meet with another cyst.

Lately it has been more common to introduce the trochar in the middle of the abdomen, between the umbilicus and the symphisis of the pubes, through the linea alba. The only advantage is, that we certainly avoid every branch of the hypogastric artery, which sometimes varies its direction in the minuter ramifications. The wound however does not contract so soon, and often continues to leak for many days; but though this is perhaps an inconvenience, it is not a disadvantage.

When the water is drawn off, lay the pledgets upon the wound, and secure them with the plaster; over them lay the flannel cloth, and then begin with the bandage or laced flannel, as already mentioned. See Heister's Surgery; Le Dran's Operations; Sharp's Observations; Bell's Surgery, vol. ii. p. 337, 354; White's Surgery, p. 298, 306.

PARACMA'STICI, (from παρακμάζω, *to decline*). See ACMASTICOS.

PARACO'E, (from παρακουα, *difficult hearing*). DULLNESS OF HEARING.

PARA'COPE, (from παρακοπτω, *to be delirious*). A slight delirium. Hippocrates.

PARACYNANCHE, (from παρα, *de*, κυων, *a dog*, and αγχω, *to strangle*, species of quinsy; a distemper to which dogs are subject). *Juxtangina*. See CYNANCHE.

PARACU'SIS, (from παρακουω, *non rectè audio*). DEPRAVED HEARING; of the order *dysæsthesiæ*. In Cullen's Nosology the species are: 1. *Paracusis imperfecta*; in which sounds are difficultly distinguished. (See SURDITAS.) 2. *Paracusis imaginaria*; when the sound is excited within the ear; *susurrus*; *syrigmus*, *syringmos*. See TINNITUS AURIUM.

PARADISAI'CA ARBOR. See THUYA.

PARADI'SA GRANA. GRAINS OF PARADISE. *Amomum grana paradisi* Lin. Sp. Pl. 2, have been supposed to be the seeds of the larger cardamoms, and called *maleguetta*, *maniguetta*, and *cardamum piperatum*. They

are brought from the East Indies, are angular, of a reddish brown colour without, and white within; smaller than pepper; in appearance resembling cardamom seeds. They grow in pods, in shape and size like unripe figs, divided internally into three cells, in each of which are two rows of seeds. They join the flavour of cardamoms to the pungency of pepper; but the latter pungency resides in their resin; the distilled oil possessing only their smell. These seeds are sometimes used instead of pepper, but more often employed to adulterate it. Their medicinal virtues are the same as those of the semina cardamomi, though they are rather more pungent. See Neumann's Chemistry; Lewis's and Cullen's Materia Medica.

PARAGLO'SSA, (from παρα, and γλωσσα, *the tongue*). A PROLASPUS of the TONGUE. A SWELLED TONGUE.

PARAGU'A. See CASSI'NE.

PARALA'MPSIS, (from παραλαμπω, *to shine a little*). See ALBUGO OCULORUM.

PARALLE'LA, (from παρα αλληλων). A scurf or leprosy, affecting only the palms of the hands, and running in parallel lines, sometimes occurring in the venereal disease.

PARALO'PHIA, (from παρα, and λοφια, *the first vertebra of the back*); the lower and lateral part of the neck. Keill.

PARA'LYSIS, (from παραλυω, *to dissolve* or *weaken*). A PALSY; *catalysis, attonitus morbus*, and *stupor*; though the last appellations are sometimes confined to the palsy, which follows apoplexy. Dr. Cullen places this disease in the class *neuroses*, and order *comata*, defining it a loss or diminution of the power of voluntary motion, but only affecting certain muscles or parts of the body, often accompanied with drowsiness. He distinguishes four species. 1. *Partialis*, palsy of some particular muscles; 2. *hemiplegica*, of one side of the body; 3. *paraplegica*, of the upper or lower half of the body; 4. *venenata*, when from sedative poisons external or internal.

The apoplexy, hemiplegy, and palsy, diseases nearly similar, may be considered in one view. In the beginning, the palsy, connected with sanguineous apoplexy, is acute; but it soon becomes chronical, like other palsies.

The most violent form of palsy is that which succeeds apoplexy, and it is usually the HEMIPHLEGIA, q. v. That which equals it in obstinacy and degree is the *paraphlegia*, where the lower extremities are affected; and the rare occurrence of the palsy of the right hand and left foot, which Sauvages would call *hemiphlegia transversa*, is scarcely less difficult of cure. The partial palsies are of inferior importance; but we must notice each in the order mentioned.

Hemiphlegia might be considered as a consequence of apoplexy, but that it sometimes attacks without loss of sense, and sometimes comes on gradually, the head on one side losing the acuteness of its sensation, then the hand, till the whole side is paralised. When preceded by an apoplectic attack, the patient is for a time dull and heavy, with a sensation of cold, trembling, and debility. The principal attack is, however, usually sudden, and with all the symptoms of apoplexy, as stertor, insensibility, a slow pulse, and slow impeded respiration. Even during the insensibility the mouth is drawn on one side, a certain proof of the nature of the disease; and when recollection returns, one side is usually either insensible, without motion, or both. In general, the whole of the side is affected in unequal degrees; but sometimes the head only suffers, in a few instances the hand and leg, while the head remains free. When the apoplectic symptoms have receded, the power over the voluntary motions of one side is lost, the vital and animal functions are weakened only. This circumstance has been already explained by the connection of the nerves in ganglia and plexuses, where nerves are united, so that the functions are diminished only, instead of the organ losing its power in any given portion. The action of the tongue is impaired; but it is also locally paralytic, for it trembles, and, when put out, is turned to one side. The side affected is in general dry and cold, though sometimes bathed in cold colliquative sweats: the extremities swell, are often affected with cramps or convulsive motions, and the limbs lose their muscular fulness and colour; the flexors are contracted, the nails white and livid; the mouth, wanting the power of the antagonising muscles, is drawn down on one side.

The mind is affected with the body. The memory is impaired, the recollection fails, the judgment is often considerably weakened. The paralytic patient cries and laughs without an adequate cause, is timid, irascible, violent. The distortion and vacancy of countenance give the air of fatuity to his look and manner; and the tongue hanging from the mouth, the saliva dropping from the chin, the articulation imperfect, contribute to render him an object highly distressing. It is the most dreadful lot of humanity.

In this state the paralytics often continue for many years a burthen to themselves, and objects of the highest distress to their sympathising friends. If however the patient be young, and previously in health (but it is not a disease in general of the young), they gradually recover some portion of strength, and some action of their limbs. The articulation of their words is again, in appearance, learnt, and very gradually acquired; the limbs are moved by the concurrence of other muscles with those affected, though each recovers some share of its power. The amendment comes on with a creeping sensation, and often with violent pain, occasioned by the distension of contracted vessels. A glowing heat, increased power of motion, and a greater degree of sensibility, are slowly and gradually conspicuous. The patient sometimes completely recovers; but we must add, that this rather happens from the powers of nature than from those of medicine.

We saw, in our examination of the nerves, that there were no exclusive branches destined for sensation, except when depending on organisation, as in the eye and ear. It is difficult therefore to explain, why sometimes the motion, sometimes the sensation only, is affected. It has been supposed that a greater degree of active power in the nerves is required for the former than the latter office; and it seems that sensation is most commonly destroyed in the lighter forms of the disease. The two defects are however so often in different degrees, without any striking connection between either and the violence of the palsy, that we offer this solution with doubt and hesitation. On dissection, we find sometimes an effusion of watery fluids, or extravasation of the

blood, sometimes extososes at the base of the skull; in a few instances, local abscesses and tumours. In local palsies the nerve leading to the part appears sometimes shrivelled; but in no instance has any organic change of the brain, in an extensive degree, been found. When the brain is unusually dry, shrivelled, &c. the disease has been rather mania than palsy. Often dissection discovers no alteration in any part of the encephalon. In more partial palsies the spinal marrow is chiefly affected, but this happens in new-born children, from the spinal marrow being deficient in this part. In adults, it is sometimes owing to a shock, but more often to distortion or partial dislocation.

The more immediate cause of hemiphlegia seems to be, therefore, some partial compression on the origin of the nerves, or some change in the state of the nervous power. The latter we infer from the absence of any cause of compression, and the nature of the remote cause, which is incapable of producing any organic affection, as deleterious gases or sedative poisons.

The remote causes are such as favour determination to the head, either constantly, or in particular circumstances only. The constant causes of this kind are those which depend on form and constitution, as short necks, or large heads; and, as the effusion is most commonly venous, lax fibres with large veins. As forms and imperfections are inherited by children, so far hemiphlegia is hereditary. The causes which determine to the head, accidentally, or in particular circumstances, are convulsive and epileptic paroxysms, violent passions, the repulsion of cutaneous eruptions, the suppression of the usual discharges, great heat, close or confined rooms, and improper use of warm bathing.

The causes which leave no traces, and which we suppose to have produced some change in the nervous fluid, are sedative poisons, particularly of lead; cold, with moisture, long continued grief, deleterious gases, syphilis, scurvy, and excess of venery.

The prognostics are generally doubtful. A spasmodic apoplexy and sanguineous hemiplegy may be removed, but they are apt to return and end in a fatal hæmorrhage of the brain. In cold weather palsies are not soon relieved; and it has been said that relief may be less expected, if the muscles of the head and face are affected, if the disease be in the arms rather than in the legs. The other species of palsy, and a serous hemiplegy, do not suddenly prove mortal; but the cure is more difficult the more the senses are injured, and such diseases frequently continue during life. The palsies of infants are sometimes relieved about the years of puberty, but adults rarely recover completely. A palsy in the belly and lower limbs is generally mortal, and often accompanied with a gangrene. If convulsions occur in the parts opposite to those that are paralytic, the danger is greater. When a palsy follows an apoplexy, or comes on in old age, it is scarcely in any instance cured. Palsy, from pressure on the medulla spinalis, is often relieved by art, but slowly yields to the powers of nature. If the part affected is painful, yet capable of sensation, not cold, nor extenuated, there are some hopes of a recovery, which is still more to be expected if there is a sensation of formication and a pricking pain in it.

The indications are, 1. To remove the causes, which interrupt the influx of the fluid into the nerves. 2. To excite increased action in the parts affected, and the whole nervous system.

Effusion of the brain, the most frequent cause, is, we have said, very frequently venous; but if the disease occurs in a young person, after violent exercise, in consequence of a blow or fracture, arterial effusion is probably the cause, and in this case only is bleeding in any considerable degree admissible. The remote causes, when they can be traced, will point out the probability of serous effusion, and the appropriate remedies can be soon ascertained. Bleeding in this case is improper, though countenanced by Dr. Cullen, from an opinion that the red veins absorb in the brain, since lymphatics have not been discovered in it. The existence of the common absorbents is now, however, admitted, though it has not been demonstrated; and the general state of relaxation in constitutions of this kind render indiscriminate bleeding, formerly so common, highly improper. There are indeed very few instances, and these we have mentioned, where this remedy is proper.

Of *emetics* we have already spoken, and the controversy to which they have given an origin; nor can we add to what we have already said on that subject. See EMETICS.

Cathartics are remedies of considerable importance in this point of view, and their nature must be varied according to the difference of the disease. The younger and more robust require those of the cooling kind, as the salts; but a mixture of those which are more active is often necessary, as large quantities cannot often be swallowed. In the more lax and debilitated habits, rhubarb, aloes and their tinctures, quickened with the tinctures of sena and of jalap, are useful. The degree of the discharge by stool must be regulated by the strength of the patient, and if that is so much exhausted as to excite apprehension from its excess, clysters must be trusted: in the torpid state of the patient they must not be inert. When nothing can be swallowed, clysters are the only resource, and decoctions of the colocynth, with a large proportion of salt and oil, are most useful: the aloes is also not an useless ingredient. Tobacco clysters are effectual ones; but the languor they induce, and the faintness which often follows their action, render them improper in this disease.

Blisters we consider among the evacuants, since we have found little advantage from their stimulus. They should be applied very near the head; and when the discharge is lessened, others should be applied either to the vertex, or behind each ear. Setons, &c. are applicable to the chronic form of the disease, which we shall afterwards notice.

Diuretics and *sialogogues* are also evacuants, which have been sometimes used. Of the former the cantharides were for a time highly esteemed; but their diuretic power is inconsiderable. Mercury, the chief sialogogue, is inadmissible from the debility which any considerable dose of it induces, and it has indeed seldom been employed as a remedy for this disease.

Diaphoretics of the warm stimulating kind are highly useful in those hemiphlegias which arise from effusion. The foundation of their utility we have already seen, vide in verbo; but this subject we shall return to under the second indication.

The next indication is sufficiently obvious; but it must not be followed until the venous congestion or

extravasation, if either appear to exist, are relieved. The imprudent use of stimuli, at a very early period, often produces a fatal apoplexy.

As fever has been sometimes found to relieve palsies, and as some heat and increased action will occasionally come on, after an attack of this disease, we are directed, by some old authors, to excite fever. This need not lead us to any very nice disquisitions respecting the connection between the disease and the remedy; for by exciting fever was only meant the effects of stimulants in increasing the rapidity of the pulse and the heat; and when fever was supposed to cure palsy, the relief was owing to the stimuli usually employed. There is an imposing simplicity in the direction to relieve the congestion, previous to the use of stimuli, which will mislead the young practitioner; for, such is the tender structure of all the nervous organs, that compression, continued for even a short time, will so far injure their organisation as to make every future attempt more hopeless. We have, therefore, found it more convenient to follow the intentions of ancient authors, and not delay, for any long period, the stimulating plan. What that period should be, must be left to the discretion of the practitioner in the peculiar circumstances of the case. In general, the more torpid and exhausted the habit, the more violent the cause, the more urgent the symptoms, the less delay is admissible; nor need we add, that, in cases of sedative poisons, any delay is improper. In general, when some stools have been procured, not mere evacuations from the rectum, but a free discharge through the whole canal, and a blister is found to have begun its action, the stimulating plan may commence; and we ought to reflect, that by this means the torpid absorbents may be roused to action. The whole class of stimulantia have been occasionally employed; but in general, the aromatics and ammonia are preferred, as more quickly active, more generally diffusible, with less suspicion of acting indirectly as stimuli, than any other medicines. When activity is less necessary, the tetradynamiæ, the siliquosæ, and the alliaceæ, are employed; and the mustard, the horse-radish, the onion with the whole tribe of their congeneres, are called to our assistance. They must be frequently changed, variously combined, and often alternated with gentle laxatives, to prevent returns of accumulation on the brain. In this part of the conduct little skill is necessary; and the medicines may be varied as caprice or fancy may direct, provided no one is continued for a long period.

Though these are the most powerful and active stimuli, yet others have been occasionally employed. These are the essential oils and the balsams. The most active and useful of the former is the etherial oil of turpentine, and of the latter the balsam of Peru, though this is less useful, as in the larger doses which the disease requires it is highly offensive to the palate. The oil of cinnamon and the balm of Gilead, often used, are less effectual. The arum, the serpentaria, and the guaiacum are stimulants of a less active kind and less diffusible, and the latter has perhaps gained a great share of its reputation from the volatile spirit with which it is usually combined in the officinal preparation employed.

External stimulating applications are highly useful with the internal stimuli. Of these the most commonly useful, or from abuse injurious, is the warm bath, particularly that at Bath. It is easy to understand, why it is so often injurious in hemiphlegia depending on congestion; and useful where congestion, together with the tendency to it, is wholly removed; or where the disease arose from sedative poisons. Common warm water, of a moderate temperature, from 92°, for instance, to 96°, is much less dangerous. It has been usual to combine such baths with aromatics, but little advantage is gained by the union, and the heat is more generally efficacious. The cold bath is often more safe, since the repulsion of the fluids from the skin is transitory only, and it excites increased action by giving additional tone; but the other tonics are less generally employed. The tepid salt-water baths and sea-bathing are very useful remedies. The bitters are of an equivocal nature, and do not seem very essentially useful; and the metallic tonics have not perhaps been sufficiently tried. Even the steel, except in chalybeate waters, is seldom given; but these are so frequently useful, that they have tempted us to try this and some others of the same class, though we have not done so sufficiently to induce us to offer any remarks on their efficacy. If arsenic is so active a tonic in the paralytic state of chronic rheumatism as Dr Bardsley has represented it, we may expect some efficacy from it in paralysis.

External applications are, however, more particularly useful in partial palsies; and in these the Bath waters may, without hesitation, be freely employed. In the palsy from the endemial colic of Devonshire, from lead, or any other cause, it often relieves; and the mustard, the ammonia, with many other stimulants, are often useful. The acknowledged utility of mustard has been seized on, to render it a vehicle of quackery; but, in reality, the supposed essence of mustard is a superior application, viz. the etherial oil of turpentine, combined with spirit of wine, some camphor, and apparently opium. Cold and warm pumping is also very serviceable in partial palsies, as well as in particular states of the more general disease, where the congestion is removed, and some organ is peculiarly weak.

Electricity was, for a time, highly fashionable; but it has lost its credit, except when in cases of partial palsy sparks are drawn from the part. It is undoubtedly a stimulus, but a slight and transitory one. All Europe was informed of its success in curing the locksmith of Geneva; but very few heard that he soon relapsed, and died in his former palsied state. Success is usually blazoned, while failures are concealed.

Galvanism has lately been employed, it is said, with great success; but we have often mentioned our distrust of the boasted powers of a new remedy. There is, however, a striking instance in the Annals of Medicine, or its successor, the Edinburgh Medical Journal, of its success in a considerable disease of a nerve of the leg, inducing epilepsy.

After some time, when little advantage is apparently gained by medicine, the prudent physician will discontinue, to resume it again after some weeks or months. The artful one will, however, persevere to gain the laurels which are due to the activity of nature's powers. 'Tis a dishonest warfare! In these cases, however, nature generally, when unassisted, exerts all her energy, and either by the increased activity of the smaller branches, perhaps by the accumulated excitability of the whole nervous system, some degree of strength and mo-

tion is regained. This constitutes what we have styled the chronic form of the disease; and though we have declared medicine useless, yet some slight general regulations will be advantageous.

The diet should be solid, gently restorative, and stimulant; sleep moderate, on a hard mattress, in a large, cool room, situated on a gravelly soil, but not exposed to cold winds. In the summer the neighbourhood of the sea is highly salutary. The bowels should be kept open by gentle laxatives, generally aloetics, or rhubarb; and in torpid habits these should be given in the form of tinctures. Such exercises as can be admitted should be taken daily, and walking so far as the strength will permit, or gestation in a carriage, not too easy, will at other times be advantageous. To avoid congestion, which, if the original source of the disease, will be liable to recur, it is necessary, in addition to the laxatives, to open some drain near the head by a perpetual blister, or by a seton; and friction, particularly on the affected side, should be used morning and evening. When the tongue is particularly affected, an infusion of mustard and horse-radish should be often held in the mouth, or a bit of ginger frequently chewed. The mind should be soothed by cheerful company, and every varied amusement, by prospects held out of recovery, by changes of place and objects, with every other affectionate service.

Paraplegia sometimes arises we have said from distortion, sometimes from a violent shock, or occasionally from long continued cold. Distortion has its appropriate remedies, and the limbs gradually recover strength and motion; but we must add, that, independent of any remedy, this disease is more often progressive in amendment than any other form of palsy. In the disease from the other causes, blisters to the sacrum, and the warmest stimulants; externally and internally, are necessary. We need not apprehend danger from congestion; so that the bath waters, sea bathing, warm and cold pumping, may be freely employed. Great inconveniencies arise, sometimes from an inability to retain the water, or the stools. Each is often relieved by blisters to the sacrum, and the former by the cautious internal use of cantharides. Astringent injections, and bathing the parts around with cold water, will be frequently serviceable in the latter case.

The *hemiphlegia transversa* of Sauvages has not been described by any late author, and Sauvages seems often more eager to accumulate the number than the value of his authorities. It was seemingly an accidental occurrence, and probably a combination of two partial palsies. The only author cited is professor Fabricius of Helmstadt, who describes it as arising from a dysentery, prematurely suppressed by opiates and astringents.

We have not, in our enumeration of the remedies, mentioned the mosch, camphor, or castor. These however, with opium, are sometimes useful, when convulsions, which are not unusual on the affected side, come on. Camphor is sometimes given as a stimulant; but this property rests, as we have said, on a very uncertain foundation. We have sometimes thought that, joined with ammonia, it is more certainly carried to the skin, acting as a diaphoretic.

Some varieties of paralysis are too curious to be wholly omitted. One of these is mentioned by De Haen, arising from *vomica* in the lungs, which compresses either the thoracic ganglion, or the brachial nerves above. The *intermitting* palsy is described by Torti, and seemed to depend rather on accumulation and compression on one part of the brain than effusion, since it was at once relieved by the recession of the disease, and was cured by the remedies of intermittents. Its form was that of hemiplegia.

The *arthritic hemiphlegia* merits particular notice. It is mentioned by Musgrave, but particularly described in the Upsal Transactions. The peculiarity of the disease consists in its being relieved by cooling medicines, and aggravated by stimuli of every kind. The *syphilitic palsy* appears in many different forms; but it is chiefly owing to exostoses in the inner table of the skull, and is scarcely ever removed; for though the disease be cured, its effects remain.

See Ætius, Celsus, Cœlius Aurelianus, Aretæus, Trallian, Hoffmann, London Medical Observations and Inquiries, vol. iii. p. 160, &c. p. 257, &c.; Cullen's First Lines, vol. iii. edit. 4; Edinburgh Medical Commentaries, vol. iii. p. 9.

PARA'LYSIS, (from their use in palsies.) *Primula veris* Lin. Sp. Pl. 204 α. *Verbasculum pratense odoratum; primula veris odorata, flore luteo simplici; primula veris major*, PIAGLES, COMMON COWSLIPS. This plant is valued for its flowers, which have an agreeable smell, are used to give flavour to a wine, and are gently anodyne, and antispasmodic.

Primula veris minor. P. veris γ Lin. The PRIMROSE, grows in hedges and woods; its flowers are weaker than those of the cowslip; the leaves and roots resemble asarum, and are powerful errhines and emetics.

Primula veris β Lin. *herba petri; primula inodora lutea; verbasculum pratense.* OXLIPS, or GREAT COWSLIPS. The flowers are slightly diuretic.

PARAME'SOS, (from παρα, *near*, and μεσος, *middle*). See DIGITUS.

PARANOI'Æ, (from παρα, dim. and νοεω, *to understand*). See DELIRIUM.

PARAPHIMO'SIS, PERIPHYMO'SIS, (from παρα, and φιμοω, *to tie, as with a string*). An inflammation of the prepuce, when it cannot be drawn over the glans. See LUES VENEREA; Bell's Surgery, vol. i. p. 534; White's Surgery, p. 345.

PARAPHO'NIA, (from παρα, and φωνη, *the voice*). *Cacophonia.* DEPRAVED VOICE, including in general dumbness and difficulty of speech. Dr. Cullen, confining it to the depraved voice, distinguishes the following species: 1. *Puberum*, that change of voice remarkable in boys about fourteen years of age. 2. *Rauca*, the hoarse and rough voice, from the dryness of the fauces. (See RAUCEDO). 3. *Resonans, rhenaphonia*, when the voice seems to come whistling through the nostrils. 4. *Palatina*, from a defect of the lip, the palate, or uvula (see ASAPHIA, or ASAPHODES). 5. *Clangens, leptophonia, oxyphonia*, when the sound is shrill or squalling. (See CLANGOR.) 6. *Comatosa*, a voice resembling stertor.

PARAPHRENE'SIS, (from παρα, and φρην, *the mind*). See DELIRIUM.

PARAPHRENI'TIS, (because commonly attended with delirium). *Diaphragmitis.* An INFLAMMATION OF THE DIAPHRAGM. In this disease the pain is very violent and deep seated in the lower part of the breast, under the short ribs, or striking between them and the

back; the fever very acute, and the delirium constant. The belly is drawn up, and kept as much at rest as possible; the respiration excessively quick, erect, small, suffocating, difficult, performed principally by the muscles of the breast; the patient frequently affected with sickness and hiccough, often with involuntary laughter, convulsions, and madness. The pulse is very frequent and small, often irregular; great anxiety; and symptoms of irritation come on, with a rapid, fatal termination. In general the progress, termination, and manner of treatment, are nearly as in pleurisy. The pain is greatly augmented during inspiration, coughing, sneezing, repletion of the stomach, nausea, vomiting, or in discharging the fæces and urine. The termination is often in suppuration; the risus sardonicus, convulsions, and madness are supposed to be distinguishing symptoms of the disease. Sagar observes, that it is an inflammation, attended with an obscure pain at the spurious ribs, oppression of the breast, often bloody sputum, difficult breathing, anxiety, the sensation of tightness, like the stricture of a cord, at the precordia; a retraction, almost involuntary, of the angles of the mouth; delirium, and sometimes a lethargy. The pulse is unequal, intermitting, irregular, and hard; the hypochondria drawn inwards; respiration without the motion of the diaphragm; the urine sometimes pale, at others high-coloured, with a sensation of burning at the precordia. See PLEURITIS; Boerhaave's Aphorisms; Fordyce's Elements, part ii.

PARAPHRO'SYNE, (*alienation of mind*, from *παραφρονεω*), is a transitory insanity without fever. See MANIA.

PARAPHYMO'SIS, (*παρα*, and *φιμοω*, *obligo*). See PHYMOSIS.

PARAPLE'GIA, PARAPLY'XIA, (from *παρα*, *trans*, and *πληττω*, *to strike*). A palsy of all the parts below the neck; but Hippocrates means by this term a palsy in any particular part, from apoplexy or epilepsy. Dr. Cullen confines it to that species of palsy which affects the lower extremities only. See PARALYSIS.

PARAPOPLE'XIA. See APOPLEXIA.

PARARY'THMUS, (from *παρα*, and *ρυθμος*, *number*). See ARYTHMUS.

PARATHRE'MA, (from *παρα*, and *αρθρον*, *a joint*). (See LUXATIO.) A tumour also from protrusion. See HERNIA.

PARASITICA'LES PLA'NTÆ, (from *παρασιτος*, *a hanger-on*), are produced from the trunk or branches of other plants, and do not draw their nourishment from the ground; as misleto, ivy, &c.

PARA'SPHAGIS, (from *παρα*, and *σφαγη*, *the throat*). The part of the neck contiguous to the clavicles.

PARA'STATA, (from *παριστημι*, *to stand near*); any thing situated near another.

PARA'STATÆ. *Assistentes, astites glandulosi*; the EPIDIDYMIS. Herophilus and Galen distinguish this part of the testicle by the name of *varicosa parastata*, while they style the prostate *glandulosa parastata*. See EPIDIDYMIS, and TUBÆ FALLOPIANÆ.

PARASTRE'MMA, (from *παραστρεφω*, *to distort*). A convulsive distortion of the mouth or any part of the face.

PARATHE'NAR MA'JOR, (from *παρα*, *near*, and *θεναρ*, *the sole of the foot*). This muscle in each foot is fixed backward by a fleshy body to the outer part of the lower side of the os calcis, from the small posterior external tuberosity, all the way to the anterior tuberosity, where it joins the metatarsus, and at the basis of the fifth metatarsal bone separates from it again, forming a tendon, inserted in the outside of the first phalanx of the little toe, near its basis, and near the insertion of the parathenar minor. It separates the little toe from the rest.

PARATHE'NAR MI'NOR. A muscle in each foot, fixed along the posterior half of the outer and lower side of the fifth bone of the metatarsus; terminating under the head of the bone, in a tendon, inserted in the lower part of the basis of the first phalanx of the little toe. These muscles are sometimes called *transversales pedis*.

PARAU'. See BEZOAR ORIENTALES.

PAREGO'RICA, (from *παρηγορεω*, *to mitigate*). An epithet for medicines which relieve pain. See ANODYNA.

PAREGO'RICUM ELI'XIR; *tinctura opii camphorata*. Take of hard purified opium, flowers of benjamin, of each one dram; camphor, two scruples; essential oil of aniseseeds, one dram, by weight; proof spirit of wine, two pints: digest for three days. Pharm. Lond. 1788. It is useful in allaying the tickling sensation from cough, without diminishing expectoration or producing dyspnœa. It is given to children in the chincough, from five drops to twenty; to adults from twenty to a hundred and twenty.

PAREI'RA BRA'VA, (*pareyra*, Span.), *ambutua*, *caapeba*, *convulvulus colubrinus*, *botou*. WILD VINE, *cissampelos pareira*, *α*, Lin. Sp. Pl. 1473; the root of an American climbing plant, brought from Brasil, generally in crooked pieces of different sizes. The outside is brownish, and variously wrinkled; the internal substance pale, dull, yellowish, and on a transverse section, a number of concentric circles, crossed with striæ, running from the centre to the circumference, are conspicuous. There is a white species, the bark of whose root is white, and the substance within like the root of liquorice.

This medicine has been highly esteemed as an attenuant, expectorant, and diuretic, in suppressions of urine, in nephritic and calculous complaints, in ulcers of the kidneys and bladder, in humoral asthmas, in fluor albus, rheumatism, and jaundice; but is neglected in this country, since it has been found inefficacious. The dose of the powdered root is from ℈j. to ℈ij.; in decoction ℥iij. to a pint, divided into three doses. It yields its virtue to water or to spirit. See Lewis's Materia Medica; Neumann's Chemistry.

PARE'NCEPHALIS, (from *παρα*, and *εγκεφαλον*, *the brain*). See CEREBELLUM.

PARE'NCHYMA, (from *παρεγχυω*, *to pour into*). A term introduced by Erasistratus for the substance contained between the blood vessels of the viscera, imagined to be extravasated and concreted blood. It sometimes means any of the viscera through which the blood is supposed to be strained.

PARENCHYMA'TICI, (from *parenchyma*). INFLAMMATIONS of the SUBSTANCE of the VISCERA.

PARE'SIS, (from *παριημι*, *to relax*). A palsy of the bladder, when the urine is either suppressed or dis-

charged involuntarily. (Aretæus.) In modern authors an imperfect paralysis, synonymous with ANAISTHESIA, q. v.

PARETU'VIER. See GUAPARAIBA.

PARIETA'RIA, (from *parietes*, because it grows on walls). COMMON PELLITORY of the WALL; *parietaria officinalis* Lin. Sp. Pl. 1492, *muralis, helxine, perdicium*, because partridges feed on it; *vitriaria* and *urceolaris*. This plant hath tender reddish stalks, rough, uncut, oblong leaves, pointed at both ends, and imperfect rough flowers growing in clusters along the stalks, followed each by a small shining seed; perennial; flowering in May. The leaves have been used externally as refrigerants; and internally as diuretic and emollient, though now disused, notwithstanding it is retained in the British Pharmacopœias. See Raii Historia.

PARIETA'RIA O'SSA, (from *parietes*; because they defend the brain like walls); THE BONES OF THE SINCIPUT. These bones form an irregular square, whose upper and fore sides are longer than those behind or below. The inferior side is a concave arch, receiving the convex part of the temporal bone. Together they form the sides and upper part of the head.

The external surface of each parietal bone is convex, and about the middle is a transverse arched ridge where the temporal muscle is attached: at its concave side the temporal bone unites with and rises above it, to prevent apparently its starting from blows. Near the upper and the posterior part of each bone is a small hole, through which a vein passes to the longitudinal sinus, and sometimes a branch of the temporal artery. The situation of this hole should be attended to, lest, if a branch of the artery is cut, it retract into the bone, and occasion an incurable hæmorrhage. Internally there are numerous furrows on the concave surfaces of these bones, and they are largest and deepest near the anterior angle of the lower edge. In these furrows there are sometimes passages into the diploe. On the inside of the upper edge there is a large sinuosity, where the upper part of the falx is fixed, and the superior longitudinal sinus lodged. Near the angle formed by the lower and posterior angles of these bones are the depressions of the lateral sinuses. The pits made by the brain are also very conspicuous on the internal surface of this bone.

The parietal bones join the os frontis by the coronal suture; at their long inferior angles the sphenoidal bone by part of the sphenoidal suture; at the lower edge the bones of the temple by the squamous suture; the os occipitis by the lambdoidal suture; and one another by the sagittal suture.

In the new-born child none of their sides are complete, and no hole exists in the ossified part near the sagittal suture. The unossified part of the head was supposed to be kept open for the evacuation of the superfluous moisture of the brain, then called the *fountain* (BREGMA, q. v.); sometimes with the epithet *pulsatilis*, for the arterial pulsation is there felt; and accoucheurs judge by this beating, and the fulness of the bregma, whether the child, on the head presenting, is alive. The bregma is usually ossified before the seventh year; and previous to that age, sometimes after it, applications have been made to that part, with a view to draw off noxious vapours from the brain. We still apply blisters to the vertex, though perhaps without any decided advantage, as the brain is there covered by a thick ligament, scarcely more pervious than bone.

PARIETES. The soft inclosing membranes and muscles of any cavity.

PARI'GUA. See CASSINE.

PA'RIS QUADRIFO'LIA. See HERBA PARIS.

PARISTHMIA, (from παρα, and ισθμιον, a part of the throat so called). See TONSILÆ.

PARISTHMIOTOMUS, (from παρισθμια, and τεμνω, *to cut*). An instrument with which the tonsils were formerly scarified.

PARMENTA'LE. See LEVATORES LABII INFERIORIS.

PARMESAN. A rich cheese made at Parma, from the milk of cows fed on the banks of the Po. See CASEUS and ALIMENT.

PARNA'SSIA PALUSTRIS, Lin. Sp. Pl. 391. *Hepatica alba; gramen Parnassi; cistus humilis; pyrola rotundifolia*; GRASS OF PARNASSUS, OR WHITE LIVERWORT. The leaves are roundish, and disposed in a circle; it grows in flowery marshy places, and flowers in August. The whole plant is said to be cooling and diuretic; but it is not now used. See Raii Historia.

PARONY'CHIA, (from παρα, and ονυξ, *the nail*). A WHITLOE, or FELON, *penaris, dogga, pandalitium, panaritium, passa digitum, onychia*, an abscess at the end of the fingers. The symptoms and treatment greatly differ, according to its situation. If at the root of the nail, an astringent spirituous application, often the camphorated spirit of wine, kept constantly applied, with a moderate pressure, will cure it. Should suppuration, however, come on, at its first appearance as a white speck at the base of the nail, the cuticle should be removed, and the spiritus Mindereri, or any slight discutient, applied. The appearance of the white spot, however, must be caught at, since a few hours delay will render the attempt abortive.

When it attacks the finger, but is seated only under the skin, it is troublesome in consequence of the thickness of the cuticle. It is, therefore, convenient to disperse it; and this may be done by immersing it frequently in warm water, or applying saturnine lotions. Should these fail, a knife may be at once passed through the prominent point, to relieve the inflammation by a topical bleeding, though the matter be not yet formed. When suppuration has taken place it may be opened early, or the cuticle pared down, so that the natural opening may be more quickly made.

When the paronychia is seated under the sheath of the flexor tendons, it is known by a violent pain, affecting the internal condyle of the humerus; and it is a disease so excruciating as to excite violent fever, and often delirium, with convulsions. The pain is occasioned by the resistance of the compact tendinous sheath, which prevents its pointing outward, and the matter insinuates itself upward to the palm, where it is felt under the aponeurosis of the palmaris, and, passing under the annular ligament, sometimes reaches the fore-arm.

When the disease is, therefore, ascertained, as it may be by the pain in the condyle, the abscess should be

immediately opened, and the incision must extend so far as the matter has penetrated. If the tendon should be sloughy, that portion must be separated; but, in general, a part of it must be taken away; for when the distension is taken off, the wound will close in consequence of the elasticity of the tendinous expansion.

It is sometimes necessary to follow the matter beyond the annular ligament into the fore-arm; for a cure can only depend on the freest opening. The best dressings are warm spirituous ones, and the oil of turpentine is well adapted to the complaint.

In the last kind, the abscess is formed within the periosteum, and the pain, as well as fever, are considerable, though not so great as in the preceding, and the characteristic symptom of a pain in the internal condyle of the humerus is wanting. The swelling and tension of the fingers are also less; but the latter are often livid, and covered with dark-coloured vesicles.

In this case a bistoury must be introduced at the side of the finger, and plunged deep into the bone, through the periosteum. A slight sanious discharge only, in general, follows; but this gives relief, and the next day it is often more considerable, flowing copiously for some time. Should this not succeed, amputation of the finger should not be delayed.

See Le Dran's Operations; Heister's Surgery; Kirkland's Medical Surgery, vol. ii. p. 269; Bell's Surgery, vol. v. p. 431; Pearson's Principles of Surgery, vol. i. p. 82, &c.; White's Surgery, p. 18.

PARONY'CHIA, (from its supposed virtues in curing paronychia). *Sedum, saxifraga, alsine; saxifraga tridactylites* Lin. Sp. Pl. 578, WHITLOW GRASS; is said to be emollient, but is of too little efficacy to be trusted.

PARO'PIÆ, (from *παρα,* and *ωψ, the eye*). See OCULUS.

PAROPTE'SIS, (from *παρα,* and *οπταω, to roast*). Sweating from external heat.

PARO'RASIS, (from *παρα,* and *ὁραω, to see*). An IMBECILITY of SIGHT. See DYSOPIA.

PARORCHI'DIUM, (from *παρα,* and *ορχις, the testicle*). A DETENTION of the TESTICLES, in the abdomen or at the ring of the muscles, called *cripsorchis,* or concealed testicles. Usually about the time of the child's birth they descend into the scrotum; but the time of their descent is very uncertain in different persons, and in the same person both testicles will not always descend at the same time; sometimes they never pass into the scrotum. Mr. Pott observes, that he knows not of any particular inconvenience arising from the detention of a testicle within the cavity of the belly; but its lodging in the groin exposes it to be hurt by accidents. When hurt it may be mistaken for a different disease, and occasion very improper treatment. To which considerations he adds, that there is no kind of disease to which the testicle is liable in its natural situation, but what may also affect it in any or all its unnatural ones. In the first case related by Mr. Pott, a testicle being detained in the groin of a young healthy seaman, who hurt the part by hitting it against a piece of timber, the tumour became extremely painful, and was mistaken for a bubonocele, from which it might have been more readily distinguished by the following circumstances, had not the extreme tenderness of the injured testicle prevented any examination by the touch; and the very hard swelling of the scrotum precluded any certainty of a testicle being there or not. Mr. Pott adds, that the tumour in the groin did not, like the bubonocele, point obliquely from the ilium towards the pubes, but lay across the groin, and when the scrotum became soft no testicle could be felt; two striking circumstances to determine the nature of the case. In the earlier part of this young man's life, the detained testicle had been mistaken for a rupture, and a truss had been applied to it. In the second case the testicle was detained in the groin; and the patient was also advised to wear a truss, which he could not bear from the pain it occasioned. At last, when infected with a gonorrhœa, this detained testicle inflamed, forming a hernia humoralis, unfortunately mistaken for a bubo. The tumour, however, was moveable, and the scrotum on that side contained no testicle; two circumstances of importance in the diagnosis. Each patient was cured by the remedies for inflammations of the testicles in their usual situation.

PAROTIDÆ'A, (from *παρωτις, the parotid gland*). See CYNANCHE PAROTIDÆA.

PARO'TIS, (from *παρα,* and *ους, the ear*). The PAROTID GLAND, *eparma* and *eparsis;* together styled *dioscuri.* It is seated on each side in a cavity below and before the ear, between the maxillary process, the zygomatic process, and the angle of the lower jaw. Its duct passes over the buccinator to pierce the membrane of the mouth, near the third dens molaris of the upper jaw. It is a secreting salivary conglomerate gland, supplied with vessels from the temporal artery, with an appendicle at the tendinous beginning of the masseter muscle. It is also an inflammation, or an abscess of the parotid gland, considered by Dr. Cullen as synonymous with bubo. See ABSCESSUS PAROTIDIS.

PAROXY'SMUS, (from *παροξυνω, to irritate*). A PAROXYSM, chiefly applied to fever or spasm. Sometimes this term is applied to a crisis, or that more acute exacerbation previous to the solution of the disease.

PARTHENIA'STRUM, (from *parthenium, tansy*). BASTARD FEVERFEW. WILD WORMWOOD. *Parthenium hysterophorus* and *integrifolium* Lin. Sp. Pl. 1402, used as a vulnerary in Jamaica and South America, the country of each.

PARTHE'NIUM, (from *παρθενος, a virgin*; from its use in diseases of young women), *tanacetum, matrimacaria,* and *artemisia; achillœa atrata* Lin. Sp. Pl. 1267.

PARTURI'TIO, (from *parturio, to be in labour*). LABOUR; the bringing forth of a child.

Women are generally delivered about the end of the ninth month, or very early in the tenth: instances, however, have occurred of the birth of healthy children, at different periods, from seven to eleven months after conception.

Labours are either *natural,* when the delivery is accomplished by the efforts of nature; *laborious,* when protracted beyond the usual time, or requiring extraordinary assistance; and *preternatural,* when any part besides the head presents, requiring also obstetrical aid. When the period of gestation, at which the fœtus can enjoy independent life, is arrived, either the uterus admitting of no farther distension, the active efforts of a stronger and perfect child, the irritation occasioned by the presenting part on the os tincæ, excite this hollow muscle to contraction. Either of these causes, or all combined, may produce this effect; but difficulties and objections

may be made to all. It is, however, sufficient for our purpose, that in the latter months, some days before labour commences, the tumour sensibly falls down. This, however, sometimes occurs twice, in a few instances oftener, before labour really comes on; and in each, the swelling again rises, not from the fœtus changing its position, but from its increase of bulk, or from its assuming a straiter posture. When, however, labour is actually at hand, efforts are made by nature, usually called pains. These, in the beginning, are slight, and the intervals considerable: after some of these efforts the uterus begins to contract, and a glary mucus, sometimes bloody, is discharged from the vagina. The pains then become more severe, return more quick, and continue longer. From the pain and agitation, the pulse is affected, the skin becomes hot, the face reddens, and the mucus is more copiously tinged with blood; the os tincæ opens; its edges grow thin; the membranes, with the waters, dilate and widen the orifice. When the pain ceases each time, the womb rises, but not so high as before; the tumour formed by the membranes disappears; the os tincæ is relaxed, and the diameter diminished; the child falls, by its gravity, upon the lower part of the womb; and the part of the body which presents, may be easily distinguished through the relaxed membranes.

Towards the end of labour the succession of pains is rapid, and the efforts violent: at first the pains usually begin in the small of the back, and terminate about the pudenda; but at this period they are perceived in the umbilical region, pressing with a sense of weight towards the fundament. The tumour formed by the waters distending the membranes below the mouth of the womb dilates the parts, until at length it bursts, and the waters are discharged. If the child's head presents fairly, it stops the discharge of the remaining waters; and the same effort which bursts the membranes often expels the infant; though at other times the interval is long before the delivery of the child. The head of the child having passed the os internum, enters the vagina, which becomes wider in proportion as it shortens; the perinæum is stretched by the child's head, and the frænulum sometimes torn in the passage; the nymphæ are obliterated; and the labia pudendi confounded in the general distension. At length the head forces the os externum, and the body readily follows, with the rest of the waters, mixed with blood. At this last period the woman trembles and is convulsed, but is soon relieved by the expulsion of the child. A calm succeeds, until returning efforts are exerted for the exclusion of the placenta, &c. called *secundines*. Parturition therefore demands the concurrence of several agents. The cause and determination of labour is in the womb itself, which contracts, and forces its contents by the vagina, where there is the least resistance; for if from any cause that resistance is insurmountable, the uterus itself is lacerated. The womb is muscular and reticulated; some of its fibres run uniformly parallel upon the inner surface, from the fundus to the neck: others diagonally or horizontally, and so closely interwoven towards the fundus, as to have been mistaken for a muscle destined for the separation of the placenta. The uterus, in short, is capable of dilatation and contraction, acting like other hollow muscles, assisted by the diaphragm and the abdominal muscles. The irritation which the womb suffers at the end of pregnancy is supposed to be the chief cause which determines its action; for before conception its cavity is triangular and flattish; the angles very pointed; and the uterus consequently more thick in the middle, and at the fundus; apparently consisting of fibres, coiled and doubled, as it were, in reserve, to expand with the gradual developement of this organ. The expansion once begun, continues with the growth of the fœtus until all the fibres are unfolded; so that when farther stretched, pain, contraction, and labour, follow. The prelude to labour consists of gentle efforts of short duration, gradually and almost insensibly expanding the orifice or os tincæ. When this is sufficiently dilated to admit the head, the pain remits, but is renewed when the head enters and distends the vagina. As the neck of the womb varies in length and thickness; as the developement of its fibres may be retarded or accelerated by various circumstances; and as the increase of the child may be faster or slower; it will be obvious that the birth will be accelerated or protracted, at least within certain limits. However small the dilatation of the os internum, it will occasion a separation of the chorion from the uterus, rupture the communicating vessels, so that the fluid which circulated between them will escape, and become the source of a mucous discharge at the first period. If the membranes are strong, their progressive separation continues until it arrives at the borders of the placenta, where the adhesion being greater, the bag generally bursts; though in rapid labours, the child and the membranes and the secundines have been discharged together.

When the vertex first presents, as is the case in a natural labour, one ear is turned to the pubis, the other to the sacrum, so that the forehead must be towards one side of the pelvis, and the occiput to the other: thus the broadest part of the head is in the widest of the pelvis; so that, when compressed and propelled, the vertex descends into the lower part of the ischia, where the pelvis is narrower at the sides. The forehead now turns round into the concavity of the sacrum, and the vertex towards the pubis, a position in which advantage is still taken of the width of the pelvis: it is then pushed forwards, turning as on a fulcrum, until the forehead rises gradually from under the perinæum.

With respect to preternatural presentations, see PRÆSENTATIO.

Natural labours are, we have observed, when the head presents and is delivered by common pains, requiring no other assistance than what is needful in saving the perinæum from being lacerated. Laborious labours, called also lingering, non-natural, and difficult, are when the head presents; but labour-pains being insufficient, some safe contrivance becomes necessary to bring it forward. These are of two kinds; when delivery is effected without destroying the child; or when the head of the child must be opened, that its size may be lessened to adapt it to the passage. Preternatural labours are when the legs or breech are delivered first, the body and head last; or when different parts of the body present, except the head, or the head presents in such a situation that the child must be forced back, turned, and delivered by the feet.

Some pains come on about the time of labour without assisting the progress of the child, and are called false

pains, occasioned by spasm, from the child pressing on some nerve, from costiveness, sometimes from plethora. They are known from the os tincæ continuing shut during the pains. A clyster, followed by an opiate, will relieve them; but true labour pains, after a little interval, are promoted by opium. False and true pains sometimes attend at the same time; but an opiate will relieve the former without impeding the latter. The prognostics are taken from the age, the state of health, and the temperament of the patient; from the force, duration, and recurrence of the pains; from their effect in dilating the os tincæ; from the rapidity with which the child follows the rupture of the membranes; from the bulk and posture of the child.

Until the woman is likely to be soon delivered, she may be up, or in bed; but at the time the most convenient posture is on her left side upon a bed, with the knees drawn up. If asthmatic, the head may be raised, or they may be delivered in a sitting posture.

The assisting powers in a natural labour are particularly the diaphragm, and abdominal muscles. The feet should be placed against a fixed object, to assist the abdominal muscles; and a strong inspiration made at the beginning of each pain, to fix the other extremities of the muscles. A deep inspiration, or an effort to strain, except what nature excites, should be avoided, especially as the pain goes off, since it retracts the fœtus, and lessens its force in distending the parts.

When the child's head forces strongly against the perinæum, which is the consequence of the external orifice not being in the axis of the pelvis, it should be supported by a gentle pressure from the hand with a napkin, during a pain The palm of the hand should be firmly, but not with too violent pressure, lest inflammation should be the consequence, fixed against the tumour, repressing the passage of the child backward, and endeavouring to conduct the head to the aperture, when the vertex will pass from under the pubes and the forehead, rise over the distended perinæum, which, with a little assistance, will slide over the face.

This part of the process is now completed. The body is not immediately excluded; but after a few moments respite, the whole is gradually concluded, for the body is born without difficulty; except that, of a large child, the shoulders pass with less ease.

After the parts are cleaned and dried, the patient has a little respite till the placenta begins to separate. This process was some time since, under the direction of Dr. Hunter, entrusted wholly to nature; nor was art suffered to interfere, though a day or two elapsed before the separation took place. This was an error in many respects. The mind was kept in anxiety, for the patient was not completely a mother till restored to her former state; nor, till the circulation in the uterus was free, was there any probability of the flow taking place to the breasts. Modern practitioners have, therefore, neither hurried on the separation, nor delayed it many hours, should not nature complete the business. It is usually an operation of nature without assistance; and after about ten minutes from delivery, pains begin; the cord, if kept tense, is elongated, the abdominal tumor subsides into a rounded ball, sinking gradually lower, and the placenta, with little difficulty, is brought through the vagina. If the labour has been long and tedious, or the patient previously debilitated, the contraction of the uterus, which produces the separation, takes place slowly. We must then wait; and if in five or six hours, gently pulling in the interval by the cord, it does not advance, the hand, guided by the funis, must be introduced into the uterus, and the edges of the placenta separated around. It then soon comes forward, for the centre is first naturally loose. The cake is distinguished from the clots which usually surround it, by its being in the centre of the funis, by its firmer consistence, and by its convex puckered feel. When flooding is violent, the separation must be quickly accomplished; and when the contraction of the uterus is irregular, reducing its form to that of an hour-glass, the stricture must be steadily dilated; a work of no little difficulty. In general, the separation should be left to nature; but should hæmorrhage and convulsions occur; should the separation, notwithstanding every effort, be delayed for more than twelve hours; the most steady but determined mode of separation should be adopted. Some authors indeed advise a longer delay, and even to wait the effects of a dose of opium; but this has never seemed, in our practice, to facilitate the contraction of the uterus. We may just add, that after dry warm linen has been put on, all impurities removed, and a little well-boiled gruel given, the woman should be left perfectly quiet, the child put by her side, and the room, with a moderate light, kept perfectly tranquil.

Laborious labours form an object of far greater intricacy and difficulty. In the whole practice of medicine and surgery no subject requires greater firmness of conduct, more profound reflection, nor more sound judgment. Delivery may be protracted by causes depending on the mother, the child, or the secundines.

In general, laborious labours are owing to increased resistance, or diminished or irregularly exerted powers. We find an increase of resistance from the rigidity of the parts, the frequent consequence of advanced life; schirrous or polypous tumours; accumulated water and fæces in the bladder and intestines; a stone in the urethra; a prolapsus of the vagina or rectum. To which some authors have added an obliquity of the uterus; but this cause has not occurred to the most experienced practitioners since the time of Deventer, who first suggested it; an anchylosis of the os coccygis, and a peculiarly short funis, neither of which seem for any considerable period to protract delivery. To ascertain the cause will suggest the best means of relieving the patient; but, when the impediment cannot be at once removed, if the accoucheur has patience, takes a little blood from robust and plethoric women, gives an injection, followed by an opiate, he will find the most ample assistance from the powers of nature.

The powers of the mother are diminished by general or local weakness. General debility, however, while it lessens the power, often in a greater degree diminishes the resistance, and in the last stages of hectic, children are often born, almost without a pain. The local weakness is a torpor of the uterus, by which it fails to contract, or contracts irregularly and inefficiently. Torpor often arises from over-distension, sometimes from a want of irritability in the womb; but the former continues no longer than the time when the waters escape; though this part of the process must not be hastened, as we shall find their early discharge one of the most common causes of tedious delivery.

Other causes of delay, depending on the mother, are floodings, epileptic fits, spasms or colic. Floodings are always dangerous; but, when they remit during pains, we may check the discharge by breaking the membranes. If they increase during pains, they probably proceed from the placenta being fixed to the os uteri; and this situation is most alarming. As soon as it is ascertained, which may be done with the finger when the os tincæ is a little opened, and the spongy feel of the placenta presenting points out the cause, the hand must be passed with the most steady firmness, as quickly as is consistent with the patient's safety, to bring down the feet and deliver the child. It is seldom that the forceps and crotchet can be used in such cases. Spasms and colics are removed by opiates; and for the management of epileptic fits, see CONVULSIO and PREGNANCY.

The conduct of the attendants, in time of labour, often renders it tedious. Any sudden intelligence of an interesting kind, whether pleasing or disagreeable, the appearance of danger, a look of uncertainty or peculiar anxiety, will at once stop the pains and the progress of the labour, often inducing worse complaints. Every thing in the room should be tranquil, easy, and cheerful; the spirits should be supported by the most favourable prognostics, by holding out every promising symptom to view, and palliating or concealing whatever may be of a different complexion. The strength should also be supported; and until the appearance of a forcing accompanies the pain, the idea of labour should be kept at a distance. The early pains, styled grinding, which are necessary for the dilatation of the parts, must be soothed by opiates; the bowels kept soluble by clysters, and the strength preserved by avoiding fatigue. The woman should be allowed to walk, sit still, lie down, as is most suitable to her own feelings.

The bulk of the child is sometimes a cause of laborious labours; occasionally the firmer ossification of the head, its less favourable position in the pelvis, the breadth of the shoulders, or an enlargement of the whole body in consequence of mortification. If the pelvis is well formed, these causes occasion only a temporary delay, and nature will accomplish her purpose.

The secundines are often a cause; and a very frequent one is too great rigidity, or the contrary state of the membranes. In a well-formed pelvis, and a strong healthy young woman, the child, covered with its membranes, is often at once excluded, when they are too firm; and great inconveniencies arise from the flooding in consequence of such a sudden discharge. When too lax, they are ruptured on the slightest touch; and, unless the uterus has been previously over-distended, the pains cease, the os uteri contracts, the parts become rigid, and labour is peculiarly tedious, often requiring the use of the vectis or the forceps. When it is necessary to break the membranes, the nail is the safest instrument; but it is necessary to avoid mistaking the child's head, covered with mucus, for them. They are, in general, too tender, and the accoucheur should be cautious of breaking them prematurely, so that in touching he should avoid the moment of a pain, when they are often forced down.

The funis umbilicalis, when too long, protracts labour, especially if twisted round the child's neck. It is seldom necessary, however, to divide it; and when the head is born, it may be easily slipped over. When too short, it does not protract labour, but pulls the placenta early in the progress, occasioning a partial separation, and the death of the child, unless it soon follows. To divide it during labour is dangerous; and the operator may, with propriety, hasten the birth. Such cases, however, occur rarely. If the funis protrudes before the child, it should be returned before the labour is so far advanced as to fill up the passage; for, unless this be done, if the labour is slow, the child is lost. If this cannot be done, the forceps must be used to hasten delivery, for to turn the child in such circumstances, is to expose it and the mother to the greatest danger.

Though we have represented the powers of nature as able to overcome the greater number of obstacles, yet some are in themselves irresistible, and the woman sometimes sinks. Both mother and child would therefore be lost if additional assistance could not be procured. Various means have been contrived for this purpose, viz. the fillet, the lever or vectis, and the forceps. The fillet is with difficulty applied, except when the child's head is so low that the hand of the operator would supersede its use; nor is it without danger to the child, if the force used be considerable. The lever, the supposed invention of Roonhuysen, was probably, as Dr. Bland, in an excellent paper in the second volume of the Medical Communications, has shown, only a single blade of Chamberlen's forceps, and is, in his opinion, a very convenient instrument. A great advantage is, that it is perfectly safe, and may be easily concealed; a circumstance of no little importance in situations where the mind is so easily agitated, and where agitation is attended with such dangerous consequences. Its inconvenience is said to be, that its fulcrum is the symphysis of the pubis, and that there is danger from bruising the meatus urinarius, of producing inflammation and mortification. We suspect, however, and we are countenanced in this suspicion by some respectable authors, that these disadvantages result from its abuse. When the head of the child is confined at the upper brim of the pelvis, or rather when the head has partly passed through it, the great impediment is at the symphysis, and the great object to bring the occiput below it. In this case, the fulcrum of the lever is not at the symphysis, but at either ramus of the pubis, where there is room for its introduction. On the other hand, the fulcrum of the forceps, when the blades act singly, is at their junction; which would give this instrument a decided preference were there always room for the introduction of both blades, or were the idea of an instrument less formidable to the patient. Either, however, may be occasionally employed, and each is a valuable assistant in labours preternaturally delayed.

A different instrument, though with the name of the lever, is recommended by some of the ablest practitioners; but it is rather an extractor. It is the vectis or lever of Lowther (see Plate), and is used without any pressure, either on the rami of the pubes or the symphysis. It acts slowly and safely; but its chief advantage, in cases of emergency, is its bringing the head within the reach of the forceps, an instrument which should not be trusted beyond the guidance of the fingers. This lever rests on the occiput, and, like Roonhuysen's, with the difference of action mentioned, brings the head down till the face is turned into

the hollow of the sacrum. Its situation must then be changed, and the instrument applied over the chin. The practitioner in using either should keep his left hand under the perinæum, for the natural pains, when the head is freed from the edge of the pubes, often propel the child rapidly; to which we must add, that the stimulus, from the introduction of the instrument, often increases them.

The shape of the forceps is also seen in the plate: indeed words will not adequately describe them. They should not, we have said, be trusted beyond the reach of the fingers, and the short forceps should therefore be only used. These cannot be applied till the head of the child is nearly or completely within the brim of the pelvis. The blades are to be placed over the ears, and the convex side of the instrument must be towards the hollow of the sacrum. The handles must then be cautiously brought together, and the forceps locked, which, if the instrument is properly applied, is no difficult task; but should it prove so, the position of either blade is faulty, and it should be altered. When locked, the handles are confined by a fillet. In the employment of every instrument it should only act during a pain; and, in the more considerable intervals, the fillet should be loosened, that the pressure on the child's head may not be too long continued.

In considering the causes of laborious labours, we mentioned the deficiency of the propelling powers, or the increase of resistance. The unfavourable position of the child's head is a most frequent cause of this increased resistance, and it is one of the cases to which the lever is particularly adapted.

The unfavourable position alluded to, is the presentation of the fontanelle instead of the vertex (more strictly speaking, the anterior portion of the fontanelle rather than the posterior), the face and the forehead. In the first case, the face is frequently turned under the symphysis of the pubes; and, in the two latter, the chin is placed indifferently towards the pubes or sacrum, most commonly towards the pubes. It is not because the face or the forehead presents, that the case is styled laborious, for in strong robust constitutions these presentations occasion little delay; but because they afford increased resistance, which the woman's powers cannot overcome.

When, therefore, such cases prove laborious, there is some doubt whether the lever or forceps is applicable. In general, when the head is advanced about one-third only, or one half, through the pelvis, the lever is the most useful instrument, and it is introduced over the occiput to draw down that part of the head which occasions it to occupy much less space than when the face presents. This operation is greatly assisted by raising the chin with the other hand. In some cases, the resistance is increased by a slight diminution of the space at the brim of the pelvis. The lever of Dr. Lowther may be often used in such situations. When convulsions or hæmorrhages require expedition to save the life of the woman, the lever should not be trusted. In other cases of laborious labours it is in no respect superior to the forceps, though in many of the instances equally useful.

The cases in which the short forceps are applicable may be divided into those where the face is in the hollow of the sacrum, to one side of the pelvis, or under the symphisis of the pubes. In the first case, one blade of the forceps, guided by the finger, is to be carried forward over one ear, and the other in the same direction, on the opposite side. The line of traction must then be first downwards and backwards to disengage the occiput, next upwards and forwards to disengage the chin from the breast. In the second case, the blade which is to pass under the symphysis of the pubis is to be first introduced; and if the face be to the right hand, the right hand blade must pass under the symphysis. The other blade is introduced at the opposite side: and the action of the instrument is not only directed downwards, but in part so as to turn the face to the hollow of the sacrum. In the third case, the blades are to be applied as in the first, but the line of traction should be upwards and outwards, to bring down the occiput before the face

The safest instruments, however, should not be rashly employed; and it requires no less of skill than of steadiness and resolution to determine the proper period of our active exertions by their means. The accoucheur is attacked equally by the impatience of the sufferer and the clamour of the female attendants. To suffer her to die undelivered would fix an indelible stigma on his character; to employ instruments rashly and unnecessarily would be equally discreditable; and should the woman at last die, the disgrace would be equal. The accoucheur should, therefore, carefully weigh the state and constitution of the woman with the work which remains to be performed. Should the pulse continue firm, should the patient be able to take nourishment, however slight and attenuated, should she have intervals of easy repose, he may still wait, whatever is the length of time. Yet he should cautiously attend also to one circumstance, whether nature endures only without exertion, or whether the intervals of repose are alternated with periods, however short, of pain. While such periods are observable, and the strength is in other respects preserved, he may safely wait: and he may be assured, that a comparatively rapid and easy recovery will amply repay his patience and anxiety. When, however, the periods of exertion are few and slight; when the pulse begins to flag, the features to sink; when nourishment is taken in with difficulty, and fainting comes on, we must hasten our exertions to preserve two lives. Should we not succeed with the lever or forceps, and it be at last probable that one must fall, may we not depart from the general rule, and attempt the delivery with the long forceps? It is the less desperate step, but should only be taken with those well acquainted with the use of the former instrument. For the particular directions in the application of the forceps, see Embryulcia.

Should we however fail, the last desperate step remains, to open the child's head, and thus to lessen the diameter of the cranium, and afterwards draw it down with the crotchet; an instrument resembling the forceps, but terminating in a hook sharp at the point, and bent to an angle most convenient for holding (see plate of the Instruments of Midwifery;) and we may here add that the references to the old instruments in the article Embryulcia, q. v. should be expunged, as it was judged unnecessary to repte sent objects now no longer used.

The crotchet must not be employed while there is any possibility of delivery by the powers of nature,

the lever, or the forceps. The cause of this impossibility is the smallness of the pelvis, or its distortion; for in no instance, in a well-formed pelvis, is the size of the head an insurmountable obstacle. The diameters of the pelvis have been measured with geometrical precision; but in the living body we cannot be exact, nor can we determine it often within a quarter of an inch. In general, the great difficulty is at the brim; and if its diameter is within two inches, the danger is considerable. The smallest space through which a child has passed is about an inch and three quarters. When the capacity of the pelvis is so small, after every obstacle from accumulated urine or fæces has been removed, when the lever and the long forceps have failed, embryotomy must be attempted.

The *perforator* (see plate) must be first introduced, guided by the fingers to the child's head, and in its closed state must be pressed into it so far as the rests. The blades must then be gradually opened, so that the points shall be in the direction of the largest diameter of the pelvis, guarding them with the fingers of the left hand. That these shall be sufficiently disengaged, an assistant should support one ring of the handles. By opening and shutting the perforator, if necessary in different directions, a large hole is made in the cranium, through which, by a crotchet or a small scoop, the brains may be extracted. The rough edges of the bones should be removed, or covered with the remaining pericranium. Experience has shown that the extraction of the child, now that the bulk of the head is lessened, may be delayed from twelve to twenty-four hours; for the injurious pressure being removed, the patient recovers strength by a little sleep, and by taking nourishment, while the child, less rigid by supervening putrefaction, passes more easily. The crotchet, guarded by the fingers, must be introduced at the aperture formerly made, and fixed to any portion of the side or basis of the skull which it meets. The force employed to extract the remains of the child must be steady and gentle; if any pains occur the efforts must be synchronous, and co operate with them. If the instrument loses its hold, it should be carefully again fixed, guarded with the fingers, as before.

When the superior part of the cranium is thus brought down, the instrument may be more securely fixed in the foramen magnum, or on the outside. In many cases, the force used must be considerable, and the natural turns imitated to accommodate the larger diameter of the head to the greater space in the pelvis. When the shoulders or the sternum cannot pass, the arm has been taken off at the shoulder joint, or the contents of the chest evacuated by means of the crotchet. In general, however, where the head has passed, the shoulders do not form an insurmountable obstacle; but where the cranium must be in part destroyed to secure its exit, the shoulders may be impeded. Should the cavity of the pelvis not exceed an inch, or at least be within an inch and a half, the CÆSAREAN SECTION, q. v. is the only remaining expedient which offers any probability of preserving life.

Yet we ought not to pass over a confident proposal, not offered as a hint, as a suggestion, as a probable means, but at once ushered in with the most splendid eucomia; honoured by a medal, by a pension, by acclamations, which all Europe was expected to join; we mean the division of the symphysis of the pubes, by M. Sigault. The idea was suggested in 1768, successfully executed, it is said, in 1777. The new operation was seized with avidity by the enthusiasm of the inventor's own nation; praised by Camper, and performed at Wurtzburg and Dusseldorpe. First experiments, by some fatality, we have said, frequently succeed, and the inventor is sure to find his own plans infallible. It was not, however, an idea wholly new. The ancients suspected that a relaxation of the ligaments probably took place in labours to facilitate the delivery; and subsequent authors had hinted at the necessity of the containing parts yielding as well as the contents. Pinæus had expressly mentioned their division as parts of beings less noble, compared to the boys, which were thus prevented from seeing the light. We must not, however, enlarge on the subject. It has been repeatedly tried and abandoned. The space gained was found to be inconsiderable, particularly at the brim of the pelvis, where the contracted space was most sensibly felt. It did not preclude the use of the scissars and crotchet; and was, in general, equally fatal to the mother and child. See Osborne's Essays, and Hamilton's Outlines of Midwifery.

PRETERNATURAL LABOURS are those in which any other part besides the head presents, and is generally first excluded. In the advanced periods of gestation, the child, from its increased bulk, is confined by the uterus, and struggles with difficulty in its narrow circle; but at an earlier period he is more at large, though with less power over his voluntary muscles. To this period, however improbable, the preternatural position has been attributed; and, as subsidiary causes, the quantity of the liquor amnii, the size of the pelvis, and the length of the funis, have been enumerated. Any violent agitation of the mother has been also considered as a cause, and her peculiar sensation, in such circumstances, considered as a proof of its action. Yet neither seems to explain satisfactorily the change of situation. While the fœtus has space in which it can move, it is apparently incapable of voluntary motion; and, if there is room for a change of position, there is room also for the recovery of its former station. We do not seek for a cause of a long, a short, or a knotted funis; for the uterus expanding to the right or left side; for the placenta fixing to the fundus, sides, or mouth of the womb. Why then must we explain the situation of the fœtus? Are we sure of satisfactorily explaining the natural presentation? There is reason to suppose the position of the child to be unnatural if the pains are weak; the membranes protruded like the finger of a glove; if no part of the child can be felt when the os tincæ is dilated; or if the part felt be small, irregular, and not strongly resisting, like the head. If the fæces are excluded, the breech most probably presents. We form our prognosis, in such circumstances, from the constitution and shape of the woman, the bulk of the child's body, and the manner of presenting; from the time that has elapsed since the breaking of the membranes; for, in the same proportion, the child's body is more firmly fixed in the pelvis, and from the different circumstances, which would be a source of alarm in other labours. In general, in such cases delivery is dangerous.

The varieties of preternatural labours are, first, when one or both lower extremities present; including, in this enumeration, the breech; secondly, when the child lies across the pelvis, offering the shoulder, side, back, or belly; thirdly, when either one or both arms present.

Authors usually commence with what are styled the footling cases, since the others are reduced to it, and they are the easiest as well as the most simple forms of preternatural labours. They are styled *agrippan*, either as *ægre partum*, or from the tale of Agrippa having entered the world in this posture. The case is easily understood; the shortness of the toes, the projecting heel, and the weight of a foot, will distinguish it from the hand.

In this case we wait, as in natural labours, till the presenting part reach the os externum. The woman is then placed on her side, with the breech towards the edge of the bed, and when the operator can take hold of one leg, he should gently draw it forwards, moving it from pubes to sacrum during the pain only. In the interval the os externum and the protruded limb should be covered with a warm cloth. When the foot is without the os externum, the other leg should be drawn down; and when within reach, it will be safer to draw first with one and afterwards with the other leg than with both at once; as the parts are thus more distended and better prepared for the passage of the shoulders. When the legs are born, they should be covered with a warm cloth, without concealing the toes, which afford the necessary directions for turning the body. These should be turned to either side, and if directed to the back or belly, a little before the breech advances to the os externum, the legs should be covered with a warm cloth, and pushing a little upwards, the toes should be steadily and gradually turned towards either sacro iliac ligament. This is seldom accomplished during one pain. As the breech advances, the operator has a firmer hold, and he must move the child a little from side to side, pressing towards the perinæum. When the navel approaches, the umbilical cord should be gently brought down; and when the cord is compressed by the os tincæ, the operator must hasten the operation. In this mode of delivery the arms are drawn up by the side of the head. At this time, then, the child, resting on the arm or one hand of the operator, is to be drawn a little aside, to afford room for the passage of a finger or two on the opposite side over the shoulder. The arm is by these fingers to be drawn down obliquely over the breast, bending the fore-arm. The other arm must be brought down in the same way. The woman may now rest for a little while; and after a pain or two, the head, in many instances, is excluded. If it is not, and the woman is much exhausted, the remainder of the process must be accelerated, as the child will be otherwise lost from pressure on the chord. The pulsation and the woman's strength will determine the proper period of waiting. When it is necessary to deliver the head, the child must rest on the arm of the operator, and two fingers of the hand on that side be passed into its mouth to draw down the lower jaw; while pressing on the shoulders with the other hand, the accoucheur, rising from his seat, must endeavour to turn the face into the hollow of the sacrum, and then draw in a direction from pubes to sacrum, with a steady force, raising and depressing the head till it begins to yield. The face will then descend from the hollow of the sacrum, and the occiput be brought from under the pubes by a half round turn. During the whole time an assistant must press on the perinæum, and the operator coincide in his exertions with the pains.

If the mouth cannot be reached, a pressure should be made on the lower jaw, with great caution, as this bone is very tender; and the convolutions of the cord round the child's body or neck, if possible, disengaged. If the feet are not pulled down too early, the contraction of the os tincæ seldom proves an insurmountable impediment to the delivery of the head. By a little delay, where sufficient strength remains, the head is delivered, though for a time it resisted all attempts. In natural labours, the upper part is exposed to the pressure, and it yields easily: in these cases the firmly ossified basis which first presents is incapable of altering its shape; though when it has begun to pass the superior bones yield, and facilitate the remaining part of the operation. If we find the delivery hindered by the very large size of the head, or a size greatly disproportioned to the pelvis, and perceive that there is no longer room for delay, if we would preserve the mother; its contents must be evacuated by the perforator introduced at the basis of the skull, and the head at last brought forward by the blunt hook or crotchet. In general the forceps are of little use, for a head which can be brought forward by these may be delivered by a very little assistance to the powers of nature.

If one leg should be entangled by catching on the pubis, it may be easily brought down; but if folded along the child's body, it should be left to pass down with the breech and body. When one or both knees present, the legs often cannot be brought down till the breech be slightly raised and pushed gently back into the pelvis. If the feet should offer with the breech, the latter should be gently pushed back.

When the breech presents, the child's breast may be towards the pubes, sacrum, or either side of the mother. The breech may be easily distinguished by the touch, and is rendered probable by an early discharge of meconium. In each case the delivery should be left to nature, till the breech and feet have advanced beyond the os externum. In the two first cases the labour must be then managed as directed, turning gradually the child to accommodate it to the varying diameter of the pelvis. The last is more simple. In general there is less inconvenience, danger, and pain, in suffering the child to come forward double, than to push it back and turn it. The pains, in such cases, are usually more violent; and after some continuation, should they remit, and the strength lessen, the parts will be better prepared for the more active exertions of the operator. Delay is however inadmissible when the mother's strength is inconsiderable, the pains slight and inefficient; when the child is large, the pelvis narrow, the unbilical cord compressed between the thighs of the child, and in cases of flooding and convulsions. In such circumstances the feet must be brought down as soon as possible.

The navel-string most commonly falls down where the fore-parts of the child are opposed to the symphysis of the pubes; and if the breech be far advanced, and

the pains strong, it cannot be reduced, nor can the child be pushed back. In such cases the child can be preserved only by the labour coming on rapidly: to attempt bringing down the feet would greatly endanger the mother without saving the infant. In breech cases, care must be taken not to mistake the buttock for the shoulder, and to touch with caution, lest the genitals may be injured.

When the child lies across the pelvis, offering the arm, shoulder, side, back, or belly, the powers of nature are insufficient for the delivery. If the practitioner is early aware of either presentation, it will not be difficult to turn; but if the waters have been for some time evacuated, and the uterus is contracted round the body of the child, each case is highly dangerous. Fortunately some little water is often retained, and then turning is not difficult.

As we have often mentioned this operation, we shall now give a few simple directions for its execution, as in the cases before us it is indispensable. We must, in general, wait till the os tincæ is so much enlarged as to admit the hand of the operator freely; and till the pains have in a great degree abated. We shall then be able to ascertain, with some certainty, the position of the child, the shape and dimensions of the pelvis. The waters should, if possible, be preserved; but if they should break, the hand may be immediately passed to retain some portion of them, and the turning may be immediately executed. Should this, however, be impracticable, a large dose of opium should be given, to procure some relaxation of the contraction previous to the attempt. No other narcotic has been tried, though several, particularly the belladonna, seem to have greater power in diminishing irritability.

The hand should be introduced with the fingers closed in a conical form, after being well lubricated with pomatum, steadily and resolutely, during the remission of a pain, on the fore-parts of the child, as the feet are usually folded on the belly. In pushing back any part of the body of the child the hand should be expanded; and though on the introduction of the hand the remission of a pain be waited for, the efforts in drawing the child down should co-operate with those of nature. If both legs are within reach, both should be brought down; and should there be reason for concluding the child to be dead, as this is by no means certain, the operation should be conducted with the greatest tenderness. When it is necessary to pass the hand high up in the uterus, it is more convenient to avoid the projecting sacrum by passing it on one side; and if the presenting part opposes its introduction, it should not be pushed back till we have tried to raise the hand, and pass it round to the other side, where the space may be greater. When both feet cannot be brought down, one will be sufficient, and we thus obtain room to search for the other; but should it be impracticable to bring down the other, the delivery, by a little care, may be completed by means of one only.

From the rashness or unskilfulness of the operator, the putrid state of the child's body, the size of the head, or the narrowness of the pelvis, the head is sometimes separated from the body. When the child is known to be putrid, no great effort should be exerted till the finger is fixed on the lower jaw. If already separated, it may be sometimes extracted by the fingers in the lower jaw, or by the forceps; pressing, in either case, on the woman's abdomen, to keep the head steady. Should these methods fail, it may be opened by the perforator, and at last extracted by the crotchet.

When the arm presents, a skilful practitioner may often prevent its coming down, or return it when it has protruded. If the shoulder is however locked in the pelvis, the hand can be introduced into the uterus, by the side of the arm; and when the feet are brought down, the arm of course returns. When the hand is introduced, it is conducted by the breast and belly of the child to the feet. If any difficulty occurs in finding them with one hand, the other will often succeed. But if the shoulder and head prevent the introduction of the hand, the presenting part must be raised or shifted to one side, that one or both feet may be taken hold of, which by gently pulling, while the shoulder is raised, may be brought so low as to be surrounded with a noose, and then the delivery will be easily completed.

The *shoulder*, when *presenting*, feels more bony, hard, and irregular, than the buttock; and when the os tincæ is dilated the arm often comes down. They are then together locked in the pelvis, and turning will be more difficult and hazardous; unless the child is small, the pelvis unusually capacious, or the hand pressed close to the side of the head, the arm and head will not be excluded together. By attempting to bring both forward, the latter is often torn off.

The side, the back, and the belly, are easily distinguished; and when they present, do not come beyond the brim of the pelvis, so that turning is by no means difficult. When the case is ascertained there should be little delay, for the child should be turned before the uterus is too closely contracted round it.

A case of peculiar difficulty sometimes occurs, when the child lies straight in the uterus, with the feet above, the arm and shoulder presenting, and the head resting on the pubes, or on one side of the brim of the pelvis, while the uterus is contracted around it. In this case, the arm must be reduced by passing the hand along it till the operator reaches the shoulder, which he must shift a little to the opposite side, bringing the head more nearly opposite the os tincæ. Should this method fail, the fore-arm may be pushed up at the elbow, and in bending it the joint must be carefully attended to. When the arm is reduced it must be kept in the uterus till, at the next pain, the head is brought down and prevents its return; for if this be not done, the arm will be protruded as often as it is returned.

If the os tincæ be not sufficiently dilated to return the arm, and if the head by the labour pains is carried still farther to the side; while these are violent and almost unremitting, every attempt must for a time be given up, and a very large dose of laudanum administered. The former efforts may be then repeated, or by fixing a noose to the child's arm, the head may be drawn by this means nearer the os tincæ, or more space may be gained for introducing the hand. This is the very judicious and probable plan recommended by the late Dr. Hamilton, by which he repeatedly succeeded. Should this fail, as the head is without the reach of the perforator, the crotchet must be fixed on the trunk or thorax to bring down the breech or feet, and the delivery may be then accomplished, as in these cases. This practice

is however only justifiable when the pelvis is faulty, or the mother's life in imminent danger.

Dr. Denman has remarked, that when the arm presents, if it is drawn down, and the patient left to the efforts of nature, the child, by the action of the uterus, will turn as on an axis, the breech come down, and the arm be necessarily drawn back. This, however, will only be the case when the child is dead; and the method recommended by Dr. Hamilton will often save the life of the child; nor has this spontaneous evolution succeeded within the observation of other practitioners.

When *both arms* present, the case is not more difficult than when one protrudes. They prevent the head coming down, and may be either reduced, or there is room to bring down the feet. It is possible, however, that the head, with a hand on each side, may be locked in the pelvis. If the woman's strength begins to decay, for by delay in a well-formed pelvis the delivery may be completed by the efforts of nature, the lever and the forceps must be tried; and if these fail, the only resource is the crotchet.

When the head is locked fast at the brim of the pelvis, and the uterus is contracted round the body of the child, a tumour is perceived on its head, if it be living, but not, if dead. When a child is locked fast, the face is usually towards the sacrum. Sometimes the face of the child is turned upward, from its progress being stopped by the sagittal suture resting on the brim of the pelvis. In a case of this kind Levret advises passing a fillet through the perforation of each blade of the forceps, before they are introduced. When the handles are fixed, the ends of the fillets must be tied together, so as to hang down in a noose, about six or seven inches. If then the handles are raised with the right hand, and the fillet pulled down with the left, the forceps will be converted into a lever of the third kind, and bring the head into the hollow of the sacrum. This is, however, only practicable with the long curved forceps.

After the delivery, the accoucheur should pass his hand into the uterus, or press on the abdomen, to examine whether another child may not remain. Should the child, with the waters, be in a small proportion to the bulk of the abdomen; should the umbilical cord, after being divided, continue to bleed beyond the usual time; labour pains recur; a tumour remain a little below the scrobiculus cordis, he should certainly introduce his hand into the uterus; for these circumstances are often, from different causes, fallacious. When a child is known to be in the uterus, and natural pains come on, the membranes soon force down. If the head or breech present, the membranes may be broken, and delivery will soon be completed. If the feet present, they should be immediately taken hold of and brought forward. As in such cases the uterus is usually over-distended, the pains are often slow and inefficient, the woman agitated in uncertainty, and weakened by flooding; so that it is better to pass the hand, break the membranes, and expedite the delivery. Cases of twins are uncommon; of triplets and quadruplets proportionally more rare. A very few instances have occurred (Garthshore, Philosophical Transactions) of five at a birth. It is singular, that of far the greater number of twins and triplets, the father has been in an infirm state of health.

When the labour is completed, the linen, &c. must be changed, and the woman left to repose, after having taken some gruel, seen her child in health, which should be placed at her side. She may then be left to rest for two or three hours; while the room is kept cool, airy, and with the utmost tranquillity around. It has been usual to give various medicines, particularly spermaceti, "the sovereignest thing on earth for an inward bruise;" but this, and all other medicines, are now disused. Should there be inflammation from bruises, fomentations or astringent applications may be used; and should not a stool occur in twenty-four hours, a clyster or a little castor oil may be given. Should after pains, as they are called, be troublesome; pains arising from spasmodic contractions of the uterus in consequence of the discharge of clots of blood, an opiate may be given, and repeated, if necessary.

The peculiarly irritable state of a woman in child-bed renders the continuation of the utmost tranquillity and caution necessary till after the third evening. It may afterwards be gradually relaxed. The secretion of milk will then have begun; the period of the formation of fever is passed; the irritability, the constant attendant of changes in the balance of the circulation, greatly diminished. Popular prejudice has prolonged this caution to the ninth day, and in some families it is still common to confine the woman to her bed on that day; and indeed such is the prejudice which fills every female mind respecting its importance, that from apprehension alone some little irritation is occasionally observable on it.

The child, from the delay, the pressure on the head, or the cord, is sometimes born apparently without life. In this case the cord is allowed occasionally to bleed a little; air is blown into its mouth, closing the nostrils; embrocations of warm brandy applied to the pit of the stomach, and a clyster thrown up. A tobacco clyster sometimes given, or tobacco smoke injected into the rectum, seems, from the narcotic quality of the herb, rather injurious than useful. A little soap is always at hand, and will form a more convenient laxative in this form.

See Smellie's, Le Motte's, Denman's, and Hamilton's Midwifery. See ABORTIO MÆNORRHAGIA, PRÆSENTATIO PERITONITIS.

PA'RTUS, (from *pario*). See PARTURITIO.

PARU'LIS, (from παρα, and ουλον, *a gum*). An INFLAMMATION, BOIL, or ABSCESS in the GUMS. (See ABSCESSUS GINGIVARUM.) From similar causes, viz. decayed teeth, excrescences of different consistences, from the fungus to the wart, grow on the gum. A decayed tooth, if suspected as the cause, should be removed, and the excrescence removed by the ligature or the knife. After the operation, the wound should be allowed to bleed for some time; after that astringent washes, at first more strong, to act as styptics, and at last milder, to heal the sore, should be frequently used.

PA'SMA. See CATAPASMA.

PA'SPIER. See CRITHMUM.

PA'SSA, (from *pando, to spread*). A FIG or GRAPE hanging down from the limb or bunch; generally used as an epithet, as in *uva passa*, the raisin. See PARONYCHIA.

PASSIFLORA LAURIFOLIA and MALIFORMIS, Lin. Sp. Pl. 1355 and 1356. The fruits of

these species of granadella are cooling, and gently laxative.

PA'SSIO, (from *patior, to suffer*). A PASSION, AFFECTION, or DISEASE. See AFFECTIO, and HYPOCHONDRIACUS MORBUS.

PA'SSIONS. See PA'THEMA.

PA'SSUDÆ, (dim. of *passa, a fig*). See UVÆ PASSÆ.

PA'SSUM, (from *passa, a grape* or *raisin*). See VITIS.

PA'STA RE'GIA, and PA'STILLUS, (from *πασσω, to sprinkle*). See COLLIX, and TROCHISCI. PASTE, as an article of diet, has been highly reprobated, and indeed it is somewhat unwholesome, though we cannot accuse it with some eager dietetic reformers of producing obstructions in the mesentery, atrophy, and dropsy. If boiled without suet or fat, it is not easily digested; and if baked insufficiently it is equally insoluble. With suet or butter it is light, and not peculiarly injurious; but the oil when baked is in an empyreumatic state, and rises inconveniently on the stomach of those subject to indigestion. As an article of diet it should be used sparingly and with caution; should be thoroughly baked, but not burnt.

PASTINA'CA, *pastinaca sativa, α* Lin. Sp. Pl. 376, (from *pascor, to feed*; useful as food). PARSNEP. The root is thick, fleshy, and juicy; the leaves large, broad, and strengthened by a thick rib; the seed oval, large, thin, marginated, casting its husk. It grows in meadows, and on the borders of fields, flowers in July, and is chiefly noted as a food most agreeable to rabbits. The name is given to several vegetable products, *branca ursina Germanica, spondylium, cow-parsnep*, a species of *sium, daucus, tordilium*, and *cuminoides*.

PASTINA'CA HORTE'NSIS. See PASTINACA SATIVA.

PASTINA'CA OLUSA'TRA, *opoponax pseudocostus, panax heracleum majus, panax pastinacea, spondylium vel pastinacæ Germanicæ affinis panax*. HERCULES' ALL-HEAL, or WOUND-WORT. The leaves are entire, heart-shaped, but with one side lower than the other; the middle ribs bearing the several sets of leaves, which stand in pairs along a larger rib. It is a native of the warm climates, but bears the cold of ours, and produces the gum OPOPONAX, q. v. The seeds are much warmer than those of the wild or the garden parsnep.

PASTINA'CA SATI'VA, Lin. Sp. Pl. 376 β, *pastinaca hortensis*. GARDEN PARSNEP. The leaves are paler coloured than the wild, smooth, and indented. The roots are sweet, contain much mucilage, and are very nutritious: they yield with rectified spirit of wine a sweetish extract, and in distillation with water a small portion of essential oil, with the flavour of the root; the seeds are aromatic, but inferior in this respect to those of the wild species.

PASTINA'CA SYLVE'STRIS, *elaphoboscum, elaphicon, banica*, and WILD PARSNEP, a variety of the pastinaca sylvestris, as authors have supposed, but more probably a species of *œnanthe*, perhaps the *œ. pimpineloides* Lin. Sp. Pl. 366.

It hath dark green indented leaves, and slender woody roots; is common about the sides of fields, flowers in June and July, and ripens its seeds in September. On eating the roots a heat is complained of in the mouth, soon followed by thirst; the pupil gradually dilates, the sight is lost, and a delirium comes on. When discharged by vomiting these symptoms abate; but the dilatation of the pupil is the last which disappears. These wild parsneps are harder when boiled than the good ones, and may be thus easily distinguished.

PATE'LLA, (a diminutive of *patina*). The KNEE-PAN, *rotula, mola genu, scutiforme, cartilaginosum, & disciforme os, oculus genu, caucaloides, epigonatis, epimulis, mylacris, myle*, and CAP of the KNEE. It is a flattened bone, situated at the anterior part of the joint of the knee, broad upwards, and pointed downwards. Its anterior surface is smooth, but perforated with many holes, formed by the attachment of ligamentous fibres: its posterior surface is covered with a cartilage; divided internally by longitudinal and transverse ridges, into four cavities, the two lower of which move upon the femur in the extension, the two upper in the flexion, of the leg. The upper cavities are adapted to the pulley of the os femoris, on which they rest when the leg is in an ordinary unrestrained posture; but when bent, the patella descends on the condyles, and when extended rises above the pulley. The edges and lower points of the bone are rough, for the attachment of the tendons or ligaments.

The knee-pan is cellular, but the cells are so small that it is a strong bone, and can resist a smart blow; but it is broken by a violent contraction of the muscles when the leg is extended. (For *fractured knee pan*, see vol. i. p. 683.) The tendons of the extensors are inserted into the upper part of the patella, and a ligament runs from the lower part to be connected to the tibia. The patella suffers the leg to have some degree of rotation, which if it had been a fixed process like the olecranum it would not: it likewise is less incident to fractures than if it had been one solid bone with the tibia. At the time of birth it is cartilaginous.

PATE'LLA DOCUMA'STICA. See CUPELLA.

PATE'TÆ UVÆ, or PATETHEISÆ. See UVA PASSA.

PATHE'CA. See JACE BRASILIENSIBUS.

PATHE'MA, (from *πασχω, to suffer*). See AFFECTIO.

It is not our present object to engage in minute disquisitions on the subject of the passions; for the question, so far as it is medical, lies within a narrow compass. It has been confused rather than illustrated by the metaphysicians, whose speculations we need not follow.

Much inconvenience seems to have arisen from the metaphorical language employed. Affections, emotions, and passions, have not been clearly distinguished, nor has it been carefully pointed out that they are degrees only of similar changes in the brain. That pleasing sensation, for instance, which arises from the contemplation of objects of taste is an affection, which, arising to admiration, is an emotion, and in a still greater degree styled ecstacy, becomes a passion. The inaccuracy of language is felt also in the first step. Emotions and passions imply active energy, and can scarcely be proper terms to characterise fear, which depresses; terror, which for a time annihilates all the functions; or grief, which kills. The error arises from considering them as distinct, mental affections; but they are so only in a remote degree. They are occasioned by the sensible impressions, which excite ideas;

by the associations or reminiscence, which recal them; and are interposed between the idea and volition, influencing the latter apparently as distinct causes. Thus the passionate man, in his violent fury, is not agitated by the cause, which is often trifling, but by the passion of anger excited by the idea; the jealous man, not by the actions or words of his mistress, but by the suspicions which these excite. In the common mental operations there is a step between the idea and volition, distinguished by the term motive; but we proceed often so rapidly from the impression to action, that volition and the motive are not observed, though each exist. In this intermediate period the connections and associations have often a considerable effect in changing the views and objects, sometimes exciting to violence, depressing to despondency, or composing the mind in the pleasing delusion of contemplative admiration. These different and opposite mental affections produce corresponding changes in the body, and act as exciting and depressing powers. We see their distinct effects only as corporeal; for they produce the same consequences as the more material agents. Thus the excitability is destroyed by grief as well as by the slow action of a narcotic poison, or more suddenly exhausted by passion, as in the case of the death of lord Chatham. Moderate joy acts exactly like a gentle stimulus, and the admiration excited by beautiful objects, either of nature or art, like those gentle narcotics which diffuse calmness and serenity, though undermining the more active energies of our constitution. So true is the general position, which we have often endeavoured to inculcate, that we see in medicine nothing but what is corporeal; our agents and the changes produced are the same, at least in their effects.

Passions are divided into the exciting or depressing: each again, in a medical view, into such as excite suddenly, and with temporary violence, or more slowly and permanently. Were we, therefore, to draw out a short scheme of this kind, it would be the following, which, though in itself imperfect, may be of use when we consider the subject in a medical view. Passions are either,

I. EXCITING.

α In a violent degree, as ANGER, PASSION, ECSTASY.

β More moderately. JOY, EMULATION, DESIRE, HOPE, BENEVOLENCE, LOVE.

II. DEPRESSING.

α In a violent degree. TERROR, GRIEF.

β More moderately. FEAR, JEALOUSY, ENVY, RESENTMENT.

III. CALMING.

VENERATION, ADMIRATION, CONTEMPLATION of the excellent or beautiful in nature or art.

1. Music.
2. Painting.

Persons of strong active imaginations, sanguine in their temperaments, eager in their pursuits and expectations, are most liable to, and suffer most from, the violently *exciting passions*. The effects are often apoplexy, palsy, hæmoptoe, jaundice; or if they escape from such severe diseases, they experience all the consequences of too great excitement in subsequent depressions. The passions which excite moderately are peculiarly conducive to health. They keep up the balance of the circulation, by which the blood is regularly distributed to the surface, increase the active powers of mind and body, render the sleep sound and refreshing, the appetite and digestion excellent. Yet these effects are only the consequence of the sunshine of prosperity; for when emulation is followed by disappointment, or even not cheered by due encouragement, hope long delayed, benevolence rewarded by ingratitude, each degenerates into its corresponding depressing passion. The more violent passions are the ocean in a storm; the less violent, the salutary breeze, which gently agitate the waves, and prevent stagnation and putridity.

The *depressing passions* are, in different degrees, sedative. The more violent ones are sometimes fatal in a moment. The others slowly undermine the constitution, weaken every function, and induce dyspepsia, palsy, dropsy, with the whole train of asthenic diseases.

We have added the *calming passions*, to point out the injurious effects of their indulgence. It was the remark, we believe, of Mr. Burke, that they were sedative; and they certainly are so, perhaps in consequence of their not so powerfully engaging the more active intellectual exertions: yet we think the resemblance to those narcotics which give serenity, offered lately rather as an illustration than as an argument, is so striking, that we would call them the mental opiates. People of acute sensibility and refined taste, of indolent habits and less inclined to active exertions, are most liable to take copious draughts of these intoxicating engagements.

In the early periods of these respective mental diseases, when they become such, the treatment must be moral and intellectual. It is of the utmost consequence, therefore, to trace the passions in the infant state, for they may be observed at a very early period of life, and to apply due restraints on their excess. Even the most salutary passions should be moderated, or emulation may arise to envy, desire to greediness, benevolence to a painful refinement, joy to ecstasy, love to jealousy. The suitable mental treatment requires little discussion; for it must be varied according to the temperament, the disposition, the situation of the patient. When they induce corporeal disease, they belong to the different parts of the work.

PATHE'TICI, (from the same). See DYSOREXIÆ.

PATHE'TICUS, (from the same). An epithet of the fourth pair of nerves, because they direct the eyes to intimate the passions of the mind. They are the smallest pair in the body, and appear below the edge of the transverse processes; they pass by the side of the sella turcica, and go through the foramen lacerum orbitale superius, to the superior oblique muscle.

PATHOGNOMO'NICUS, (from παθος, *a disease*, and γινωσκω, *to know*). An epithet for a symptom or a concourse of symptoms inseparable from a distemper, and found in no other. *Quod convenit omni, soli et semper.* Pathognomonic symptoms are, therefore, those by which a disease may with certainty be distinguished, the enumeration of which forms the most concise definitions.

PATHOLO'GIA, (from πάθος, *a disease*, and λογος, *a discourse*).

We have already observed that the institutions of medicine were usually divided into the physiology, pathology, hygieine, and therapeutics. The more general division was, however, into the hygieine and iatrike; the latter including the pathology, the prognostics, and the therapeutics. In this view the pathology includes the differences, the nature, the causes, and effects, of diseases; but even this division is now neglected. The differences of diseases are referred to nosology, though this, at the period of the publication of Sauvages' first edition, was styled pathologia methodica. The particular causes and effects of diseases are referred also to the particular description, so that little remains under this head in modern authors but the general doctrines.

We have already anticipated the greater part of the disquisitions respecting the general doctrines under the article MORBUS, q. v.; for there, in a work of this kind, the reader would look for the diseases of the fluids, of the simple and the vital solids. The diseases of the containing solids, of the organised solids, and the particular secreted fluids, could not be separated from the particular diseases.

The distinction of the causes of diseases in general we have also noticed (see CAUSA), and the particular causes might perhaps be referred to the diseases which they produce. We have certainly anticipated almost every part of such disquisitions, as they rest on the more improved chemical knowledge of modern times, and to combat ancient fancies would form a very uninteresting part of the present work. It is sufficient then to observe, that the causes of diseases as distinguished by the latest pathologists, are those from the injurious effects of the atmosphere; from food and drink; the improper use of remedies; poisons; errors in the animal motions; injuries from particular positions or motions; immoderate mental exertions; perturbations of mind; excesses of sleep and watching; unnatural excretions and retentions; causes of calculus; diseases from animated beings, or other external causes, as clothing; accidents from bruises or fire; substances swallowed, or in any manner introduced into the cavities.

The predisposing causes, seminia, are those common to each sex or age, or those peculiar to particular temperaments and constitutions. To which are sometimes added preternatural predispositions, which are little else than concealed idiosyncracies excited to action by accident. See AIR, ALIMENT, VENENUM, HYPOCHONDRIASIS, SOMNUS, CALCULUS, VESTITUS, AMBUSTIO, PROGNOSIS.

PATIE'NTIA, (from *patior, to bear*, from its gently purging qualities). See LAPATHUM HORTENSE.

PATIE'NTIÆ MUSCULUS, (from the same), because its action is expressive of patience. See LEVATOR SCAPULÆ.

PA'TOR NA'RIUM, (from *pateo, to be open*). See NARES.

PATRA'PIUM. See APIUM.

PA'TRUM CO'RTEX, vel PU'LVIS, (because it was introduced by the Jesuits). See CORTEX PERUVIANUS.

PATU'RSA. See LUES VENEREA.

PAU DE SA'NGUE. See GUMMI RUBRUM ASTRINGENS.

PAULI'NA. *Confectio*, (from παυω, because it procured rest). A warm opiate; the *paulina* of Aristarchus, and the same with the confectio Archigenis. The London college have rejected it from their Pharmacopœia of the year 1788.

PAVA'NA, i. e. MOLLUCCE'NSE LI'GNUM. See CATAPUTIA MINOR, under GRANA TIGLIA.

PAVA'TE, PAVETTE. See MALLEAMOTHE.

PAVI'NA. See HIPPOCASTANUM.

PA'VOR, (from *paveo*). FEAR. See PRURITUS and PATHEMA.

PECHE'DION, (from πηχεδιον.) See PERINÆUM.

PECHURIM CORTEX. (See FABA PECHURIM.) It agrees in quality with the bean, and is used in dysenteries and dyspepsia.

PECHYA'GRA, (from πηχυς, *the elbow*, and αγρα, *seizure*). See ARTHRITIS.

PE'CHYS, (from πηχυς, *the elbow*). See OLECRANON.

PECHYTY'RBE. See SCORBUTUS.

PE'CTEN. See PUBIS OSSA.

PE'CTEN VENERIS. See SCANDIX.

PECTINA'TIO, (from *pecten, a comb*). COMBING; a species of friction.

PECTINÆ'US vel PECTINA'LIS MUSCULUS, (from *pecten, the pubis*), from the colour *lividus*, rises from the upper part of the os pubis, on the outside of Poupart's ligament, runs downwards, backwards, and outwards, and is inserted into the linea aspera below the little trochanter: it draws the thigh outward and inward, and assists in rolling it.

PECTINATI MUSCULI, (from their resemblance to *pecten, a comb*), the fasciculated muscular fibres of the right auricle of the heart.

PECTORA'LE DECO'CTUM. See HORDEI DECOCTUM COMPOSITUM.

PECTORA'LIS, (from *pectus, the breast*); an epithet for medicines appropriated to disorders of the breast. Employed in this general sense the term is improper, and the more limited one of modern authors, viz. expectorantia, should be commonly used. If the pectoralia may, with M. Lieutaud, be of three kinds, demulcents, astringents, and resolvents, it will be very obvious that the general term will lead to confusion.

PECTORA'LIS MAJOR, vel ADDU'CENS HU'MERI, rises in a radiated manner from the anterior and inferior part of the clavicle, then from the sternum, and at the lower part from thet hird, fourth, and fifth ribs from the cartilage, and partly from the bony portion of the sixth rib, sending its tendinous fibres over the upper part of the external oblique and rectus abdominis, passes towards the arm with its upper edge contiguous to the deltoid, and between them the cephalic vein penetrates. Near its insertion the pectoralis doubles in on its lower edge, forming a posterior and anterior lamella, and runs to be inserted into the anterior part of the biceps groove. This doubling has occasioned Winslow to divide the muscle into two parts. From its tendon it sends off fibres, which contribute to form the fascia that covers the muscles of the arm; and this muscle, with the latissimus dorsi, forms the cavity of the axilla. The pectoralis is partly a rotator of the arm, but its great use is to bring the arm forward close to the body. It assists also in moving the trunk of the body when the arm is fixed, and Haller thought that it assisted respiration.

PECTORA'LIS MI'NOR, *serratus anticus* and *serratus*

anticus minor, lies beneath the pectoralis major, rises by three digitations from the third, fourth, and fifth ribs, then passes obliquely upwards and outwards, and joins with the short head of the biceps, to be inserted into the coracoid process of the scapula. It is sometimes called a muscle of the scapula, or of respiration, according as the one or the other termination is considered to be the fixed point.

PECTORA'LIS INTE'RNUS. See TRIANULARIS STERNI.

PECTORA'RIA HE'RBA, (from its use in affections of the breast). See ANGELICA SATIVA.

PE'CTORIS OS. See STERNUM.

PE'CTUS, (from πηκτος, *compact*). The BREAST, *chelys*; from its resemblance to the back of a tortoise, χελωνη; also the *metatarsus*.

PECTU'SCULUM, (dim. of *pectus*). See METATARSUS.

PEDICULO'SUS MO'RBUS, (from *pediculus, a louse*). See PHTHIRIASIS.

PE'DIBUS BO'VUM O'LEUM EX. NEAT'S FOOT OIL, prepared by boiling the joints of horned cattle in large vessels. See ANCHYLOSIS.

PEDI'CULI INGUINA'LES et PU'BIS. See MORPIONES.

PEDICULA'RIA, (from its destroying lice). See STAPHISAGRIA.

PEDICULA'TIO, (from the same). See PHTHIRIASIS.

PEDI'CULUS, (from *pes, a foot*); from their great number of feet. A LOUSE. *Pediculus humanus* Lin. Systemæ Naturæ, vol. ii. p. 1016; an animal "familiar to man," though often inconvenient from its bite. Lice have been supposed hemaphrodites; and are certainly oviparous. A louse will lay in six days fifty eggs, without exhausting its store, and in twenty-four days the young ones are capable of laying eggs themselves. From calculation it is supposed that two female lice may produce eighteen thousand in two months. The largest animals of this kind were discovered by Linnæus in the warm caverns of Falhum, in Sweden. Those which conceal themselves in clothes are apparently different from the lice of the hair; for in India, however dirty the person, he is only infested with the latter. It is a common remark, that navigators lose them in the tropics, and recover them on their return to the same spot; but it is not supported by observation. Monkeys, the Hottentots, and some races of negroes, are said to eat them; and in some receptacles of lunatics, it is reported that they are put into the hair to produce irritation. When new-born children were affected with a suppression of urine, a louse was formerly introduced into the urethra; and the same remedy has been used in similar complaints of horses. It acts, as is supposed, by its irritation.

It is said also that they quit any person ill of an infectious disease, multiplying most in the strongest constitutions. It is at least certain that animals, particularly fish, are seldom infected with them but at the period of their greatest perfection. They are said to be useful to children in epilepsies, diseases of the head, and in scrofula, by producing sores; and it is added, that the worst consequences have arisen from drying these sores. As a remedy this animal is not likely to be again employed, and it is carefully destroyed when discovered. The most fatal poisons to it are the mercurial calces, the seeds of veratrum, staphisacre, menispermum, rue, opium, angelica and laurel, saffron, pepper, sedum, lycopodium, pinguicula, and nicotiana. In botany the term is synonymous with *pedunculus*.

PE'DICUS, (from *pes, a foot*). See EXTENSOR DIGITORUM BREVIS.

PEDI'LUVIUM, (from *pedes*, and *lavo, to bathe*), *lavapedium*, a BATH for the FEET. The extreme vessels of the feet sympathise with those of the rest of the system, the stomach, and the head. If the feet are cold, colic pains come on, the skin is rough, perspiration defective, and the salutary evacuations from the uterus and hæmorrhoides checked. Pediluvia are consequently extensively useful. Baths for the feet should be used at bed-time, to procure a general perspiration. If used a few days before the menstrual discharge they are said to promote it, and are particularly useful in affections of the head, as well as the commencement of febrile complaints. It is sometimes injurious, by determining too powerfully to the head, and should be used with caution in its diseases, or the temperature should not be rasied above 98°. See BALNEUM.

PE'DION, and PELMA, (from *pes*). The sole of the foot. See PES.

PE'DORA, (from *pes*). The sordes of the eyes, ears, and feet.

PE'DRO DEL CO'BRA. See COBRA DE CAPELLO.

PE'DRO DEL PO'RCO. See BEZOAR HYSTRICIS.

PEDU'NCULÆ CEREBE'LLI. See CEREBELLUM.

PEDUNCULA'TUS, (from *pedunculus*). Growing upon foot-stalks.

PE'GANON, (from πηγνυω, *to condense*). See RUTA.

PE'GE. A FOUNTAIN. See OCULUS.

PE'LADA. A loss of hair from a venereal cause.

PELECA'NUS, the name of an instrument for drawing the teeth; and of a glass vessel formerly used for the digestion and circulation of liquors poured in at their narrow necks, which were afterwards hermetically sealed: at present two mattresses are used instead of a pelecan, the neck of one being inserted into that of the other.

PELIO'MA, (from πελος, *black*). See SUGILLATIO.

PELLAGRA, (from *pellis, the skin*, and αγρα, *a disease*). This singular disease has attracted particular attention within these last thirty years, not wholly from its novelty, but from its becoming more violent, and from its being more generally accompanied with peculiar nervous affections. It comes near the *lepra asturiensis* of Sauvages, but seems more closely to resemble the *elephantiasis*, as we have described it vol. i. p. 598. As a new disease, it is necessary to notice it with some minuteness, but we shall, at the same time, confine our account within limits of no great extent, and refer at the end to a numerous list of authors, who have treated of it, in a chronological series, from the era of *Frapolli*, who first publicly noticed it in a tract published at Milan in 1771.

The symptoms which show the approach of the disease are those of debility only; languor, listlessness, gloom, a weakness and stupor in the legs, unsteady

walking, imperfect ideas, and vertigo. After these appearances, which are, however, sometimes absent, at the approach of summer, a sense of tension, burning, and itching in every part exposed to the sight, except the head, is felt, and followed by an inflation of the epidermis, and tubercles of a shining red colour. If exposed to the meridian sun, those affected become languid, faint, and fall down insensible, though they soon recover on being carried into the shade. After some days the tubercles desquamate, the skin appears at first red, but soon recovers its natural colour. The advancing summer removes every complaint; and though some relapse in autumn, in the winter every disagreeable symptom vanishes. While the disease continues, the pulse is small and weak; when it recedes, the usual strength returns; and no return of the complaint is in many cases observable for several years.

In the second stage, every symptom is exaggerated; the itching is more pungent, the heat more fiery, the skin harder, cracked, and chapped, the debility greater, the mental functions disturbed, with peevishness and impatience, the sleep broken, the appetite irregular and unequal, pain of the head and spine, with delirium and confusion of ideas. The local disease is not now troublesome; but the nervous complaints are greatly exasperated. Vertigo increases, the patient is sad, loves solitude, and the melancholy delirium occasionally alternates with the more violent: the tedium vitæ is insupportable, and self-murder is a frequent consequence. Strambio remarks, that those who labour under pellagra have the greatest tendency to drown themselves, "as by a delirium opposite to the hydrophobia." Coercion is at last necessary; and a diarrhœa, atrophy, or dropsy, closes the dreadful scene, if the patient does not sink from a loss of both mental and corporeal power.

It is necessary to mark a few of the symptoms more distinctly. The affection of the skin first appears truly erysipelatous; but with different degrees of burning heat, redness, and desquamation, sometimes attended with large phlyctenæ, full of an acrid, often yellow, fluid, as from burns. The crusts on the hands appear first to resemble the effects of heat and hard labour, though, when minutely examined, they are very different. They affect the parts exposed to the sun, particularly the backs of the hands and feet, seldom the head, except on the tip of the nose or the forehead. Those who have dreaded the disease have avoided the sun; but though they have escaped the cutaneous affection, have suffered in the other respects, and scarcely in any instance have the lips escaped being dry and chapped.

The pains of the head and back are almost constant attendants, and often even precede the cutaneous affections. Those of the head are pungent, lancinating, piercing, gnawing, with a sense of burning, as if flames were kindled in the brain, with a most troublesome singing in the ears, and a pulsation in the substance of the brain. The spine suffers from an uneasy titillation, and occasionally from a stroke resembling that of electricity. The pain passes through every part to which nerves are distributed, and from this pain the weakness of the muscles, and the spasms which affect different portions of the body in all their varied forms, occasionally rising to epilepsy or syncope, seem to proceed. Hemiphlegia sometimes attacks one side; sometimes the palsy is more general.

Vertigo was also a very early symptom, but most conspicuous in those who exposed themselves to the burning sun. From this the double vision and the tinnitus aurium apparently arose. The delirium sometimes proceeds like an acute disease, terminated by a most offensive sweat, resembling mould, or the cocoons of silkworms macerated in water. At other times it is chronical, and gives a fierceness to the countenance not to be described. From this description the essential or pathognomonic symptoms are obvious, and pellagra may be defined, "inflation of the skin with tubercles, in parts exposed to the air, except the face; at first remitting; preceded by melancholy and debility; at last constant, with increased irritability and alienation of mind." It is thus related to lepra, elephantiasis, &c.

Pellagra is sometimes complicated with nervous fever, with inflammations, and towards its close with dysentery. It is sometimes, from the descriptions of Odoard and Soler, accompanied with every variety of scorbutic symptoms; an union which appeared to them more singular, as scurvy is almost unknown in the duchy of Milan, though occasionally observed at Venice, and in both districts it is endemic. These appearances are, however, symptoms of debility only; and with them may be united petechiæ, vibices, &c. which often attend the disease. Strambio mentions an herpetic affection as a concomitant, and Soler the Grecian elephantiasis. Dissection seems only to have shown the effects of the disease in numerous visceral obstructions.

The pellagra is indisputably hereditary; and, though it seldom appears till after puberty, even in infancy the experienced eye can, it is said, trace the germ of the complaint. It is not always, however, conveyed to the offspring; but the means by which it is avoided are by no means clear. It does not depend on air or situation, though an endemic disease; for in every variety of soil and situation in the districts of Milan and Venice it is observable. The condition of the peasantry is, indeed, in these truly miserable. Their strength is exhausted at a very early age by labour to which they are unequal; and their diet chiefly consists of bad, ill-fermented bread, made of maize; their drink of stagnant water, or, on the mountains, an inferior kind of wine, *la posca*. Their habitations are close, confined, and filthy in excess, which they share with their cattle. Their countenances are consequently gloomy, their complexions yellow, face tumid or contracted, the limbs stiff, the catamenia irregular, abortions frequent, births laborious, old age premature. The foundation of the disease is certainly debility, and causes of debility often induce it when dormant; but similar causes frequently occur without producing pellagra. Weakness is, therefore, a predisposing cause only, and the activity of some latent contagion is necessary; a contagion constitutionally conveyed to the offspring. Though very unusual, persons otherwise firm and strong are sometimes affected; nor is it apparently communicated by infection from husbands to wives, or the contrary. Yet it is singular that at the little town of St. Rivolta, in the district of Lodi, after a man infected with the disease had resided there, it became comparatively frequent, though unknown before. Titius seems to suspect that it may have been originally communicated by cattle.

Some authors have attributed the pellagra to the

influence of the sun, and supposed similar to a coup de soleil; but the disease begins in the spring; and those, we observe from authors, who endeavour to escape it by avoiding the burning heat, only experience a slighter cutaneous affection. The other symptoms come on with equal severity. It seems probable that the virus is collected in winter, and produces its effect in spring, drawn to the surface by the warmth; and it is certainly connected with the manners and habits of a country life, since the inhabitants of villages are very rarely, those of cities scarcely ever, affected. If evacuated by the skin, that is, if the tubercles discharge and desquamate regularly, the nervous symptoms do not appear, or are more slight; but when the skin is more hard and solid, the worst consequences follow; and if the tubercles are repelled, sudden death is often the consequence. To this must be added, that persons not exposed to the sun often experience the nervous symptoms without the impetigo. The solar light, therefore, only produces the eruption.

Authors have divided this disease into hereditary and acquired, into moist and dry; but these distinctions do not contribute to our knowledge of its nature or treatment. Each is little understood. It has been considered as a particular species of scurvy, from the spots on the surface; as hypochondriasis, from the visceral obstruction, and the gloomy delirium; as elephantiasis, from the tubercles; as the *lepra asturiensis* of Thierri; and as a periodical chronic nervous erysipelas. The two first opinions are wholly without foundation; but as we have stated the pellagra to be of the family of elephantiasis, we must now notice the distinguishing marks.

They agree in being founded in an exhausted constitution, in the pustules being symptoms rather than essential marks of the original disease, in their fatal termination by dropsy, atrophy, or some other asthenic disease. They differ, as the elephantiasis affects the face, the roots of the hair, the palate bones, and as the disease of the skin increases with the increase of the other complaints. In pellagra, it lessens when the nervous symptoms are most violent. The pellagra also is distinguished by the thick urine, double vision, and the peculiar mouldy smell of the sweat.

The lepra asturiensis agrees with the pellagra in many of its symptoms. The pustules are, however, very painful, offensively fetid, and attack the head indiscriminately with other parts, as well as the roots of the hair. The mind is but slightly affected, and its disease is that of timidity rather than delirium. The last opinion, that of Titius, is not supported by any conclusive evidence. It must, therefore, as we have said, be placed among the impetigines, between the lepra and elephantiasis.

The cure, unfortunately, is very difficult: indeed, when the disease has proceeded so far as to affect the nervous system, it is impracticable. All the evacuants are injurious, and the tonics have not been sufficiently tried. The metallic tonics, as mercury or arsenic, promise most success, if given with medicines which assist the cuticular discharge. Mercury, conducted so as to salivate, has been found injurious. When the first symptoms have appeared, persons have escaped by removing into towns, or wholly leaving the district. Perhaps removing into a warmer climate, without being exposed to the sun, might be useful.

See Thierri Recueil Periodique d'Observations de Medicine, a Paris, tom. ii. 1755. Vanden Heuvell Tentamen Nosologicum, Sistens Morborum a vitio vis Vitalis Divisionem Sistens, Leid, 1787. F. Frapolli Animadversiones in Morbum vulgo Pellagram, Milan, 1771. Zanetti de Morbo vulgo Pellagra, 1775. Extat in Nova Acta Naturæ Curiosorum Norimberg, 1776. D'Una Specie particolare di Scorbuto, Dissertazione del Dottore Jacobo Odoarde; Extat in Nuova Raccolta d'Opuscola Scientifici & Filologici, tom. xxx. Venice, 1776. Della Pellagra Descrizione di Michele Gherardini, Milan, 1780. Atti della Società Patriotica di Milano, vol. i. Milan, 1789. Trattato Teorico-prattico delle Malattie del Insolato di Primavera, Volgarmente detta Pellagra, del Medico-fisico Giovanne Maria Albera d'Oleggio, Varese, 1784. De Pellegra Observationes quas in Regio Pellasgrosorum Nosocomio Collegit D. Cajetanus Strambio Mediolani, 1786—1789, an. i. ii. iii. De Pellagra, Morbo in Mediolanensi Ducatu endemio, Auctore X. W. Jansen Leidæ, 1787. Videmar de quadam Impetiginis Specie, Morbo apud nos in Rusticis nunc frequentori, vulgo Pellagra appellato, Mediolani, 1790. Memoria sopra la Pellagra del Territorio Padovano da D. Francesco Fanzago, Padua, 1789. Discorso Comparativo sopra la Pellagra, l'Elephantiasi de Greci, o Lepra de l'Arabi, et lo Scorbuto, ed Alcune Riflessioni Intorno la Cura, del D. Paolo Dalla Bona, Venice, 1791. Osservazioni Medico-pratiche formano la Storia essatta di una particular Malattia chiamata Pellagra, del Luigi Soler, Venice, 1791. Sartago in Ephemerid. Venet. (Aneddoti Patri), No. 22. 1792. Paralleli fra la Pellagra et Alcune Malattie che più lo rassomigliano del Dot. F. Fanzago, Padua, 1792. Pellagræ Morbi inter Insubriæ Austriacæ Agricolas grassantes Pathologia Auctore D. Salom. Const. Titio Lipsiæ, 1792.

PELLI'CULA MEMBRANA'CEA, (dim. of *pellis, the skin*), any thin membrane, as the amnios.

PE'LMA, (from πελω, *to move forwards*). See Pes.

PELTA'LIS, (from *pelta, a target*). A leaf, whose stalk is inserted in the middle, and not in the margin.

PELTA'TA CARTILA'GO, (from *pelta, a buckler*). See Aspera arteria.

PELVIMETER. An invention of M. Coutonli to measure the different diameters of the pelvis; and another in the form of calipers is recommended by M. Baudelocque. Each is, however, more curious than useful, and neither is much used in this country. The form and shape of the woman shows deformities from irregularity of the brim of the pelvis, and the operator, used to the measure of his fingers, can ascertain, in touching, the distance from pubes to sacrum, as well as any irregularities of shape at the lower diameter.

PE'LVIS, (from πελυξ, *a bason*). A name for the inferior part of the cavity of the belly, bounded forward by the os pubis; backward by the os sacrum above, and coccygis below; laterally by the ilia above, and ischia below. In infancy the bones are more numerous than in the adult state, and the edges of several are cartilaginous, so that the pelvis of the child may yield a little in difficult labours. Yet the motion of the parts on each other is so inconsiderable, that no great advantage can be this way obtained.

The pelvis consists of the os sacrum, os coccyx, and the ossa inominata: the latter contain the ossa ilia on the

sides, the pubes, branching from the front above and below; and the ossa ischia, joining the lower ramus of the pubes to the sacrum. See Plate.

The union of these bones is more or less perfect. In adults the sacrum is sometimes anchylosed with either os inominatum; and, from long confinement, violent shocks, or diseases, on the other hand, it is considerably loosened, so as to make walking unsteady and difficult. The os coccygis, which in adults consists of bones separated by cartilage, sometimes coalesces into one bone, and is also firmly united to the sacrum. In this process its length is diminished, and it usually turns inward, forming a very considerable impediment to the progress of the child. This impediment is sometimes overcome by the propelling pains, and some motion between the sacrum and the coccyx is restored. Lateral motion is prevented by strong muscles and ligaments. The ossa pubis are connected in front, it is said, by a cartilage, but it is rather by a mixture of cartilage and ligament. The former belongs to each bone, and at their junction unites. It is thicker in front, from the upper to the lower part, than behind; and the ligamentous fibres, mixed with it, are, of course, longer in front. In their reticulations they leave intervals, which contain small red bodies, described as resembling synovial glands; and some authors have mentioned a kind of capsular membrane in its back part, while the cartilages on each side seem calculated, by their separation, to admit of a small motion. This cartilaginous separation is, it is said, discovered near the middle of the symphysis, extending a little lower behind. Other authors have denied the existence of this apparent joint; and though we have seen a cavity in the cartilage, it did not appear to be regularly organised, at least in that instance. The ligamentous fibres, which we have described, are reinforced by others, and by tendinous expansions from all the muscles on either side; so that if Nature designed by this structure an obscure motion, she has taken anxious care to prevent its being considerable, apparently to prevent it entirely.

The union of the sacrum with the ossa inominata is more close and compact; nor do we find that when the connection is loosened, that the former intimate union again takes place. The os sacrum is united to the lowest lumbar vertebra, nearly in the usual manner; but there are two little articular masses fixed in the posterior edge of the impression, by which they are mutually received into each other, which answer to similar substances in the vertebra. The union of the sacrum with the spine is secured also by ligamentous fibres, so that the motion is inconsiderable; but the convexity of the spine in the loins is in part lessened by the small motion which each vertebra admits; and by altering the angle at which the woman reclines, or by bending forward, we can thus often effectually change the direction of the axis of the pelvis.

In midwifery the knowledge of the structure and peculiarities of the pelvis is an important circumstance. The brim of a well-shaped pelvis represents an irregular oval, or something that approaches to a triangle; if it is considered as an oval, its greatest axis is from side to side; if we consider it as a triangle, the posterior part is far longer, and the ossa pubis constitute the other two sides of the triangle; the lower circumference is formed behind by the sacrum and os coccygis, on each side by the ischium and sacro-sciatic ligaments, and before by the lower part of the pubes. When the body is gently reclined, the brim of the pelvis is horizontal, and a line would pass from the navel through the middle of the cavity; but when a woman is in labour, or near her time, this imaginary line must fall from between the navel and scrobiculus cordis; and accordingly we find that the head of the child presses behind the anus, and gradually advances from thence up the perinæum, until it comes to the lower part of the symphysis of the ossa pubis. The chief use of this supposed line is to place the woman in the most favourable position during labour, that she may act more advantageously with her abdominal muscles, and that the child's head may fall more directly into the middle of the pelvis. It will be a rule also to direct the forceps on the child's head, and the hand into the uterus. The obliquity of the pelvis from behind forwards is equal to an angle of nearly 40°.

In considering the pelvis, we should observe its width, the depth and form of its cavity, and the extent of its brim from the fore to the back part, which, in a well-formed pelvis, is an inch less than it is from side to side; four inches and a half from the fore to the back part; and five inches and a half from side to side.

The lower circumference of the pelvis is nearly equal; but when we allow for the os coccygis being moveable, it makes a quarter of an inch more in its longer direction from the os coccygis to the os pubis than from ischium to ischium. The depth of the pelvis, from the upper edge of the sacrum, where it articulates with the vertebræ lumborum, to the lower part of the os coccygis, is about five inches in a straight line. When the os coccygis is pressed back, it is then six inches: from the brim of the pelvis, to the lower part of the symphysis of the os pubis, is only two inches; while, from the under part of the ischium it is four inches. The brim is concave internally all round.

The inferior aperture is usually, in the natural state, smaller, and of a more irregular figure than the superior, as it is not wholly formed of bone. The base is broken by the coccyx, the tuberosities of the ischia, &c. into different angles, which are filled up by ligaments, forming in front what is styled the *arch of the pubes*, which expands from an inch and a quarter to four inches in breadth in a well formed pelvis. The transverse diameter is largest in its natural state; but, from the yielding of the coccyx, is the smallest in delivery. The largest diameter also of the inferior aperture is opposed to the smallest of the superior; and from hence arises the necessity of the half turns in delivery, which we have mentioned as necessary in PARTURITION, q.v.; and the greatest diameter of the superior, crosses the smallest of the inferior at an angle more or less acute. From an attention to this circumstance, we can often with the finger alone remove apparently insurmountable obstacles. The curvature of the sacrum also removes many inconveniencies, if attended to; and on this account the child comes with so much facility when the face is in that hollow. This concavity also prevents pressure on the sacral nerves.

The pelvis may be faulty either from too great or too small a size. In the former case the child is often too suddenly excluded, and dangerous hæmorrhages are

the consequences. In this case also the uterus is often propelled with the child, particularly when the woman has had many children; in the earliest and latest months also the child rests on the rectum or meatus urinarius, producing constipations and strangury: in the intermediate period it rests on the edge of the pelvis.

The pelvis is, however, more often faulty from its narrowness. This defect is seldom conspicuous in every part of the bason, and most generally in the superior aperture. The small diameter is most commonly contracted, and sometimes one side only of the bony circumference is pressed in. When the inferior diameter is lessened, it is usually effected by the approach of the tuberosities of the ischia. M. Baudelocque accounts for the former deformity, by attributing it to a softness of the bones in the early state; and he remarks, that the direction of the weight of the body carries the sacrum forward, and the ossa pubis backward. This is not, however, a perfectly correct view of the circumstances. The disease arises from the prominence of the abdomen, usually attendant in such cases, which renders it necessary to throw the shoulders back to preserve the equilibrium. In consequence, the line of pressure is upwards and backwards, instead of being upwards and a little outwards. In weak states it is common to recline on one side to relieve often the weaker leg, or to change the position From this it arises that one ramus of the pubes is chiefly pressed in, that one of the acetabula often approaches nearer the sacrum, and that a line drawn perpendicularly from the symphysis of the pubes towards the sacrum, divides the pelvis into two very unequal parts. The inferior aperture in the same softened state of the bones will be affected by the child's sitting, lolling on one side in preference to the other, or twisting the body into unnatural attitudes for the sake of present relief.

The dimensions of the pelvis itself often greatly vary. In the diameter from pubes to sacrum the diminution sometimes scarcely exceeds half an inch; in others the bones approach so near that often scarcely an inch of aperture is discovered. A pelvis cannot, however, be considered as *very* narrow, unless each diameter be less than three inches and a half. M. Baudelocque informs us that he has seen pelves, where the distance from pubes to sacrum above was not more than six or eight lines; and in one which he possessed, the distance from the right acetabulum to the sacrum was only between three and four lines: in another the distance from the projection of the sacrum to the symphysis of the pubes was but fourteen lines. An increased projection of the sacrum, from the causes assigned, viz. a swollen abdomen, in consequence of great debility, contracts the superior aperture to very small dimensions; and this projection is sometimes straight forward, sometimes to one side only. In the latter case an aperture is often left on the other side sufficient for the passage of a child.

Labour will be tedious when the aperture is little more than three inches; yet the bones of the child's head, by yielding, may be moulded into an oblong form, and at last pass, and the head will soon recover its natural shape. If within three inches, the difficulty is greater; and when so little as two inches and a half, the mother and child are in a dangerous situation. The difficulty from the diminished aperture of the superior part appears very early in labour. The pains, though strong, do not propel the child, and the woman's strength is exhausted before the child's head can pass into the pelvis. Nature, however, is all powerful in this respect, and the head will pass through an almost impermeable strait. It is then more within reach; and the difficulty arising from a deformity in the inferior aperture is more easily removed, as the head is often within reach of the shorter forceps.

When the head comes into the cavity of the pelvis the pains for a time cease, and the head, recovering its former shape, requires the renewed action of the propelling powers to protrude it beyond the second obstruction. When the deformity is only at the inferior aperture, the symptoms of difficulty appear later, and labour is peculiarly difficult. The practitioner must, therefore, be cautious in his prognostic, not to promise a quick termination from a prosperous commencement, nor a particularly tedious one from difficulties in the earlier period.

The middle of the pelvis is more seldom faulty than the superior or inferior diameters. The defect in this part sometimes owing to exostosis, and more often to the direction of the sacrum, which is straight, or occasionally convex instead of concave.

Another variety in the form of the pelvis, which renders labours tedious, is the less elevation and sweep of the arch of the pubes, in fact, an approach in form to the male pelvis. A different direction of the spines of the ischium, their too great length, or an ossification of the coccyx, may have a similar effect; but the latter is not often the cause of any considerable delay.

In the article on parturition we have stated that the operation of the symphysis of the pubes is no longer practised in this country, and that the separation of these bones by an operation is calculated to gain but little space. The great question, however, which we have not yet noticed, is, whether all or any of the cartilages yield during labour. Should they do so, considerable space may be gained. It is contended that this separation is possible; by others that it is the effect of disease only; by others again that it is natural, and very commonly takes place. Truth, as usual, lies between. It is certainly not common; but there is much reason to suppose that it does occasionally take place, independent of disease. That the bones do sometimes separate we know, since, in consequence of the disunion, abscesses occasionally form in the interstices. These abscesses are formed chiefly at the union of the ossa inominata and sacrum, or at the symphysis of the pubes. The former is the less violent disease, and is often cured. The latter produces hectic fever, and the cause is often not discovered till after death. The matter sometimes bursts into the cellular substance, occasionally into the bladder; sometimes passes down under the periosteum to the acetabulum, and from thence to the surface on the upper and inner part of the thigh.

A straight pelvis will cause a difficult labour; and it is known by introducing the finger up the vagina: if you can feel the os sacrum, the pelvis is straight; or if you can touch the ossa pubes with your fore-finger, and the vertebræ of the loins with your milddle finger, it is considered as narrow, and vice versa.

Pelvis is also the name for a cavity in the kidneys, for the cochlea of the ear, &c.; and hence *pelvis renum*,

aurium, and *cerebri*. See Denman, Baudelocque, and Hamilton's Midwifery.

PE'LVIS. See also CEREBRUM and RENES.

PEMPHIGODES, or PEMPHINGO'DES, (from πεμφιξ, *a blast of wind*). Fevers distinguished by flatulencies and inflations, in which an aërial effluvium seems to pass through the skin of the patient, and to strike on the finger. (Galen's Commentaries on 6 Epid. sect. i. aph. xvii.) Other authors give this name to a fever, by the intenseness of whose heat aphthæ are excited in the mouth. It is supposed, according to Fœsius, to be a synochus, in which the blood-vessels are inflated, and consequently called an inflated fever.

PE'MPHIGUS, (from πεμφιξ, *bulla, a vesicle*). The VESICULAR FEVER, *febris bullosa, exanthematica, serosa, morta*. Dr. Cullen places it in the order *exanthemata*, defining it a contagious typhus: on the first, second, or third day of the disease, little vesicles, the size of a nut, appear on different parts of the body, continue a few days, and at last exude in the form of a thin ichor. To this he annexes the following observations: "From the opinion of others, rather than my own, this character is taken; because I have seldom seen this disease, and never have observed it epidemical, or pursuing a regular course, as is here described."— With regard to the species, he says, "Since I never have seen a pemphigus which I could consider as an exanthematous fever, and have found only very few observations in the writings of physicians concerning a disease of this kind, almost every thing inserted in our Nosology must necessarily be taken from Sauvages; therefore, I have followed him, though I would willingly have omitted this malady, since almost all that has been said about it appears to me doubtful, obscure, and ambiguous. Francis Home, however, my eminent colleague, showed me a man slightly feverish, in whom vesicles, the size of a hazel nut, arose first on his arms, and afterwards, successively, on his whole body, which in two or three days after, exuding a little serous humour, collapsed. But this fever discovered no peculiar disposition or type, and, being by no means contagious, soon disappeared." Synopsis Nosologia Methodicæ, p. 148, 149.

Dr. Withers remarks, that "in the case of E. P. the vesicular eruption, which was very sore and painful, was preceded and accompanied with some feverish symptoms, evidently of the low kind. It continued only for a few days, and then gradually went off." By tonics and antiseptics, he adds, that he cured two patients, not long before, of the pemphigus, in which the fever was extremely putrid, with many gangrenous sloughs, of a fetid smell and most dreadful appearance, following the eruption of the blisters, attended with a low delirium for many nights, the greatest dejection of countenance, and prostration of strength. Since this time it has been noticed by different authors, though the most distinct account of the disease is given by Dr. Dickson in the Irish Transactions. From his description it appears to be a true exanthema, not constantly attended by fever of a given kind, but occasionally mild, though often highly putrid. The treatment is varied according to the nature of the fever; and when the pustules appear on the internal parts, which sometimes happens, irritation must be guarded against by opiates and demulcents. See Acta Helvetica, vol. ii. p. 260; Cullen's First Lines, ed. 4, vol. ii. p. 254; Edinburgh Medical Commentaries, vol. vi. p. 79; Withers on the Asthma; Gaitshell and Upton in the Memoirs of the Medical Society, London; Dickson in the Transactions of the Royal Irish Academy; and Christie in the Medical and Physical Journal.

PEMPTÆ'US, (from πεμπτος, *the fifth*). See INTERMITTENS, FEBRIS.

PENÆ'A SARCOCO'LLA. See SARCOCOLLA.

PENICI'LLUS, (dim. of *peniculum, a brush*). A TENT or PLEDGET.

PE'NGUIN. See KARATAS.

PE'NIS, (*à pendendo, from its hanging down*), *caulis, coles, mentula, priapus*, is composed of three parts, viz. the two corpora cavernosa, and the corpus spongiosum urethræ. Its skin, which is thin, and without fat, is doubled at the top, forming a hood, the præputium, which covers the glans penis, *cuspis*, or *balanos*: the small ligament, by which it is tied to the under side of the glans, is called *frænum, canis*, and *filellum*. The prepuce keeps the glans soft and moist, prevents excoriation, and preserves its sensibility. The penis, where it joins the body, is connected by a small ligament, which arises a little from its root on the back part, and ties it to the upper part of the os pubis. It receives two branches of veins from the hypogastric vessels, and its arteries from the hypogastrics and pudicæ: the two veins unite towards its root, and make one trunk, which runs on the back of the penis. It hath two nerves from the sacrum, several lymphatics, which pass through the inguinal glands, and three pair of muscles, viz. the erectores, acceleratores, and transversales. Cowper observes, that the cuticle on the glans is villous or downy, and that the cutis is thinner on it and the scrotum than any other part. See Cowper's Observations on the Penis, Ruysch, and de Graaf.

PE'NNA, (from πετομαι, *to fly*); *mentula alata*. A FEATHER. In the third volume of the London Medical Observations and Inquiries, p. 7, &c. is an account of a successful attempt to recover a fibre of a feather from the œsophagus, by means of a whalebone, with a sponge at each end. By threads loosely connected with both, the feather was entangled and brought up. If, however, it can be forced into the stomach, no inconvenience will probably arise.

PENNATIFO'LIUS, (from *penna*, and *folium*). Having leaves resembling feathers.

PENO-AB'SOU, *pinè absou*. A tree in America, whose bark is very fragrant, and whose fruit, about the size of an orange, contains from six to ten nuts, from which an oil is expressed. The fruit is poisonous, but the oil is said to cure the wounds received by poisoned arrows. Its genus is unknown.

PENTADA'CTYLON, (from πεντε, *five*, and δακτυλος, *a finger*, because it has five leaves upon each stalk). See CATAPUTIA.

PENTAGY'NIA, (from πεντε, and γυνη, *a woman*). The name of an order in the 5th, 10th, 11th, 12th, and 13th classes of the Linnæan system, containing those plants which have five pistils in an hermaphrodite flower.

PENTA'NDRIA, (from πεντε, and ανηρ, *husband*). The fifth class in the Linnæan system, comprehending those plants which have hermaphrodite flowers with five stamens.

PENTANEU'RON, (πεντε, and νευρον, *a nerve*, from its five ribbed leaves). See PLANTAGO MINOR.

PENTAPHA'RMACUM, (from πεντε, and φαρμακον, *a drug*). A medicine consisting of five ingredients.

PENTAPHY'LLUM, (πεντε, and φυλλον, *a leaf*; from its five leaves on each stalk). CINQUEFOIL. See QUINQUEFOLIUM.

PENTAPLEU'RUM, (from πεντε, and πλευρον, *a rib*; synonymous with pentaneuron). See PLANTAGO MINOR.

PENTO'ROBUS, (πεντε, and οροβος, *the wood pea*; from its five seeds resembling the wood pea). See PÆONIA.

PEPA'STICA, PE'PTICA, (from πεπαινω, *to concoct*). DIGESTIVE MEDICINES, supposed to promote the production of a proper pus in wounds and ulcers. It, however, seems doubtful whether this general term be proper or necessary; because, though there are medicines which certainly seem to answer this purpose, yet as they act on general principles, for they are chiefly stimulants, or correct those circumstances which impede the operations of nature, they ought not to form a separate class from one effect.

PE'PITA NUX. See NUX VOMICA SERAPIONIS.

PE'PLION, or PE'PLOS, (πεπλος, *a purple veil*, from their colour). Purging medicines formerly used for evacuating bile and phlegm; styled also *mecon*, *meconium*, *chamæsyce*, *papaver spumeum*, *symphytum*, and *tithymalus*. See MEDICINE. *History*.

PE'PLIOS LUTETIANO'RUM. See FABAGO.

PE'PO, (from πεπτω, *to ripen*). COMMON POMPION. As an aliment it is cold, flatulent, and indigestible; but by pressure an oil is obtained from the pulp, which softens the skin. See Raii Historia.

PE'PTICOS, (from the same). See PEPASTICA.

PEQUE'TI RECEPTA'CULUM, (from *Pequet, the discoverer*). See RECEPTACULUM CHYLI.

PERA'GU. *Clerodendrum infortunatum* Lin. Sp. Pl. 889. A shrub in Malabar, whose juice kills worms, and its roots are said to cure the lientery, colic, &c. See Raii Historia.

PERCOLA'TIO, (from *percolo*, *to strain through*). A term sometimes applied to secretions, sometimes to the transudation of fluids through their coats. See DEPURATIO.

PER DELIQUIUM. An old chemical term expressive of the fluidity which salts acquire by exposure to air.

PER DESCENSUM. A kind of distillation, in which the vapour has a descending course.

PERDE'TUM. See SISARUM.

PERDI'CIUM, (*perdix*, *partridge*; because that bird feeds upon it). See PARIETARIA.

PEREGRI'NUM LIGNUM. See NEPHRITICUM LIGNUM.

PERETE'RION, (from περαω, *to dig through*). See TREPANUM.

PERE'XYL LUSITA'NIS. See CAAPONGA.

PERFE'CTI MAGISTE'RII OLEUM. See LATER.

PERFOLIA'TA, (from *per*, and *folium*, *a leaf*; because its stem surrounds the leaf like a cabbage). See BUPLEURUM. This plant was sometimes celebrated for curing ruptures.

PE'RFORANS MA'NUS, (from *perforo*, *to pierce through*). See FLEXOR TERTII INTERNODII DIGITORUM MANUS.

PE'RFORANS PE'DIS. See FLEXOR LONGUS PEDIS.

PERFORA'TA, (from *perforo*). See HYPERICUM.

PERFORA'TIO, (from the same), penetrating by an instrument into any of the cavities of the body, as into the abdomen by a trochar. See also SETACEUM.

PERFORA'TUS MA'NUS. See FLEXOR INTERNODII SECUNDI DIGITORUM MANUS.

PERFORA'TUS PE'DIS. See FLEXOR SUBLIMIS PEDIS.

PERFORA'TUS CASSE'RII. See CORACO-BRACHIÆUS MUSCULUS.

PERFRICA'TIO, (from *perfrigeo*, *to be very cold*). See HORROR.

PERFU'MES. See MATERIA MEDICA; ODOURS, *aromatic*, *fragrant*, *and ambrosiacal*, p. 134.

PERIA'MMATA, and PERIAPTA, (from περιαπτω, *to hang round*). See AMULETA.

PERIADY'SMIA. See GASTRODYNIA.

PERIA'NTHIUM, (from περι, *around*, and ανθος, *a flower*). The calyx, when contiguous to the fructification. When it includes the stamina and germen, it is the perianthium of the fructification; when the stamina without the germen, the perianthium of the flower; when it contains the germen and not the stamina, the perianthium of the fruit. See CALYX.

PERIA'NTHIUM ABBREVIA'TUM. Shorter than the tube of the corolla.

PERIBLE'PSIS, (from περιβλεπω, *to stare about*). The wild look of delirious persons.

PERI'BOLE, (from περιβαλλω, *to surround*). Sometimes it signifies dress; at others, a determination of fluids to the surface.

PERICA'RDII ARTE'RIA, (from *pericardium*, the membrane surrounding the heart). The ARTERY of the PERICARDIUM, rises from the anterior middle part of the common trunk of the subclavian or the carotid, runs down upon the pericardium to the diaphragm, to which it sends some branches.

PERICA'RDII VENA. The VEIN of the PERICARDIUM, sometimes springs from the trunk of the superior cava, at others from the origin of the right subclavian. The left vena pericardii comes sometimes from the left subclavian before the mammaria, sometimes from the mammaria or diaphragmatica superior on the same side.

PERICARDI'TIS, (from the same). See INFLAMMATIO PERICARDII.

PERICA'RDIUM, (from περι, *about*, and καρδια, *the heart*), *capsula*, *involucrum*, and *sacculus cordis*, the membrane which surrounds the heart filled in the living body with an halitus, which is condensed in a watery fluid after death. The first membrane of the pericardium is formed by the pleura, which leaves it where it adheres to the diaphragm. The substance of the *pericardium* is a firm membrane, composed of two lamellæ, the external of which is the stronger, and apparently composed of tendinous fibres crossing each other in every direction: the internal is a complete bag, without perforation, being reflected over the heart itself, and nearer a spherical than a conical figure. This internal coat contains the liquor pericardii, supposed to be secreted by glands, but more probably exhaled from the small continuations of the arteries. In healthy persons the quantity of fluid is small, in others more copious, generally resembling serum tinged with blood, owing to the transudation of blood through the muscular cavities of the heart, for the longer the body is kept, the redder is the liquor. The

use of the pericardium is to supply the fluid, and to confine the heart; and it is very intimately connected by a great surface to the diaphragm, near the middle, where it has little motion in inspiration or expiration. The pericardium is much larger than the heart; it is not fixed to the basis of the heart, but round the large veins above the auricles before they send off the ramifications, and round the large arteries before their divisions, which alters the general rotundity of its figure. This membrane is subject to different affections; particularly dropsy, inflammation, and suppuration. See HYDROPS, INFLAMMATIO, and ABSCESSUS PERICARDII.

PERICA'RDIO-DIAPHRAGMA'TICÆ VE'NÆ. See DIAPHRAGMATICÆ SUPERIORES.

PERICA'RPIUM, (from περι, *about*, and καρπος, *the fruit*). The germen, or seed-vessel, from which the seeds drop when they are ripe. It is analogous to the ovary of animals; but its place in the vegetable kingdom is occasionally supplied by the calyx. It is distinguished by several appellations, according to its nature or shape, as *capsula, siliqua, legumen, conceptaculum, drupa, pomum, bacca, strobilus, folliculus.* See also CATAPLASMA.

PERICHO'NDRIUM, (from περι, and χονδρος, *a cartilage*). The perichondrium is said to be only a continuation of the periosteum, which, according to Dr. Hunter, may be true of that which supplies the place of bone in an adult, as the trachea; or in such as in maturer age become bone, as the epiphyses of infants; but on the cartilages that are expanded over the extremities of articulating joints, the perichondrium is the inner layer of the capsular ligament, reflected over them. This is only discoverable in young subjects, where the parts are capable of separation.

PERICHRI'SIS, (from περι, and χριω, *to anoint*). See LINIMENTUM.

PERICHRI'STI, (from the same). An unguent applied to the eyelids in ophthalmia.

PERICLAS'IS, (from περι, and κλαω, *to break*). A fracture with a considerable wound, wherein the bone is laid bare.

PERICLY'MENUM, (from περικλυζω, *to roll round*). A climbing plant. See CAPRIFOLIUM.

PERICLY'MENUM PARVUM. See IPECACUANHA.

PERICRA'NIUM, (from περι, and κρανιον, *the head*). The membrane which immediately invests the bones of the skull, under the hairy scalp, made up of two laminæ, closely united. The external lamina parts from the internal at the semicircular plane surrounding the temples, and becomes a very strong aponeurotic or ligamentary expansion, which covers the temporal muscle, and is afterwards fixed in the external angular apophysis of the os frontis, in the posterior edge of the superior apophysis of the os malæ, and in the superior edge of the zygomatic arch, as far as the root of the mastoid apophysis. At this place the aponeurotic coif seems to form the external lamina of the pericranium, and they both communicate with particular aponeurotic expansions of the mastoid, masseter, zygomatic, and other neighbouring muscles.

PERIDE'SMICA, ISCHU'RIA, (from περι, and δεσμος, *a ligature*). A suppression of urine from stricture in the urethra. See ISCHURIA.

PERIDRO'MOS, (from περι, and δρομος, *a course*). The extreme circumference of the hairs of the head.

PERIE'STECOS, (from περιϊστημι, *to surround*). An epithet for salutary symptoms, prognosticating the recovery of the patient.

PERI'GRAPHE, (from περιγραφω). An inaccurate, circumlocutory description or delineation. See also RECTUS ABDOMINIS.

PERI'GUA. See CASSINE.

PE'RIN, (from πηρα, *a bag*). See TESTES, PERINÆUM, and ANUS.

PERINÆOCE'LE, (from *perinæum*, and κηλη, *a rupture*). A rupture in the perinæum.

PERINÆ'UM, (περινεω, *to flow round*; from its moisture); *interfæmineum, gressura, pechedion;* the space between the anus and the parts of generation; divided into two equal lateral portions by a distinct line, called RAPHE, q. v., longer in males than in females.

In midwifery, when the os externum is so much dilated by the head of the fœtus as to allow of its delivery, the perinæum is generally stretched to the length of three, and sometimes of four, inches, so that without care a laceration would be often the consequence. Instead of stretching back the perinæum with the finger, it should be supported with the palm of the hand, and the head of the child at the same time moderately opposed in its force, that the distension may be made gradually, until sufficiently dilated for delivery. Inflammations and lacerations of the perinæum, if they occasion vomiting, are soon fatal. When this accident happens, the woman should be kept long in bed, with her knees constantly closed, and her bowels should be kept soluble.

The puncture of the perinæum was an operation usually performed in cases of a suppression of urine, which cannot be relieved by gentler methods. The operation was performed by pushing a trochar at the place where the external wound in the old way of cutting for the stone was made, into the cavity of the bladder. At present the water is evacuated by pushing the trochar into the bladder, from a little above the os pubis, or through the rectum. This method of discharging the urine hath succeeded but when the suppression has been of long continuance the operation is dangerous; for the bladder by distension has lost its tone, and mortification, at least an incontinence of urine, is the usual consequence. See Le Dran's Operations. Sharp's Operations. Sharp's Critical Enquiry. White's Surgery, p. 466. There are also abscesses formed in this part. See ABSCESSUS PERINÆI, and FISTULA IN PERINÆO.

PERINÆA'LIS ISCHU'RIA. See ISCHURIA; the varieties of the fourth species.

PERINENEU'COS, (from περι, and νευω, *to nod*). See EPINENEUCOS.

PERI'N PANEL. A bacciferous Indian shrub, the leaves of which are used in fumigations in hysteria. It has yet found no place in the systems of the botanists. See Raii Historia.

PERINY'CTIDES, (from περι, and νυξ, *the night*). PUSTULES, or PIMPLES, which break out in the night.

PERIOSTEUM, (from περι, *about*, and οστεον, *the bone*); *circumossalis*, is that membrane which covers the bone, divided by authors into two layers. The internal or proper periosteum lies close to the bone, and appears furrowed like it. This is a very fine membrane, and appears, on a successful injection, to be extremely vascular, from the ramification of vessels which run to the bone. The external layer is of a white glistening ap-

pearance, composed of the fibrous expansions of membranes, ligaments, and tendons, running in various directions according to the insertion of these tendons. The periosteum is not elastic: Dr. Hunter thinks it is not very sensible; and advises, in amputations, not to scrape it, but only to pass the knife round it, a little above the place where you intend to saw. The periosteum is wanting on those parts of a bone where strong tendons enter, as in the trochanter. Its uses are, to prevent the bad effect of friction on the bones; to protect the vessels running into them; to connect epiphyses; and to give origin to muscles. See ABSCESSUS PERIOSTEI and INFLAMMATIO.

PERIPHYMO'SIS. See PARAPHIMOSIS.

PERI'PLOCA, (from περιπλεκω, *to twist round*). Italian and French SCAMMONY; *scammonia Monspeliaca rotundioribus foliis, apocinum latifolium; cynanchum monspeliacum* Lin. Sp. Pl. 311. Its concreted juice purges in somewhat larger doses than the scammony of the shops.

PERIPNEUMO'NIA, PERIPLEUMO'NIA. A PERIPNEUMONY, from περι, *about*, and πνευμων, *the lungs*; *pulmonia*, and *pneumonia*. Dr Cullen defines it a *peripneumonic pneumony*, attended with a pulse not always hard; sometimes soft; an obtuse pain in the thorax; a constant difficulty of breathing, often not perceived unless in an erect posture; the face swelled, and of a purple colour; most commonly with a moist cough, and often bloody sputum. Of this he makes three divisions. 1. Simple idiopathic peripneumony. 2. Idiopathic peripneumonies, complicated with fever, as the putrid, ardent, and malignant peripneumony. 3. Symptomatic peripneumonies, viz. the arthritic, exanthematic, phthisical, hydrophobic, and rachialgic. Other authors distinguish three kinds of peripneumony: the true, or inflammation in the lungs; the spurious, or when mucus obstructs the vessels of the lungs; the catarrhal, from a thin acrid defluxion on the lungs.

The true peripneumony is produced by cold applied to the skin, mouth, or stomach; an over exertion of the lungs; or by any of the general causes of inflammation.

The disease commences with the usual symptoms of fever. The cold fit is violent, succeeded by great heat, head-ach, dryness of the tongue and skin, urine of a dark or a yellowish redness, countenance full and of a purple colour. These symptoms occasionally continue for a day or two before any pain in the chest comes on, though sometimes the pain attacks on the first accession of heat. The pulse is at first hard and strong; but in the true peripneumony frequently soft, and apparently labours with a distressing load; at last it is weak, fluttering, irregular, and indistinct. When the pain is felt, a short, dry, distressing cough soon follows, which greatly exasperates it, and continues during the whole complaint; but, on its salutary decline, is freer, easier, and looser. In the beginning of the disease scarcely any sputum is discharged, but a little frothy saliva, followed by a yellow viscid gluten, and at last by a whiter softer matter if the disease proceeds favourably. The pain is occasionally in almost every part of the chest, but usually between the ribs of either side, more frequently it is said on the right side than the left. It is increased on laying down, and considerably more so by laying on either side, whether it be the side affected or not. It is singular that this symptom should vary so considerably in different cases; nor could all the anatomical dexterity of Morgagni, or the pathological ingenuity of Dr. Cullen, explain satisfactorily the reason of what is styled the varieties of the decubitus difficilis.

The difficulty of breathing is chiefly felt on inspiration, but the expiration is performed frequently by a convulsive effort, and often an obscure sound. The bowels are generally constipated, though in a few instances a diarrhœa attends.

If peripneumony proceeds favourably, the pulse becomes slower and softer; the yellow, tenacious, and often bloody, sputum is mixed with points of a whiter matter, and the proportion of this more salutary expectoration gradually increases with the amendment of every symptom, for the cough is less violent and straining, the breathing freer, the skin more moist, and the tongue cleaner at the edges. If less favourable in its progress, the sputum becomes more dark and viscid, the pulse lower, indistinct, and often intermitting; a wandering low delirium comes on, with subsultus, and the patient dies, apparently suffocated, from the oppressed vessels no longer permitting the expansion of the lungs.

Peripneumony is, in general, confounded with pleurisy; with inflammation of the other contents of the thorax; with rheumatic affections of the muscles of the chest; with catarrh, and asthma. It is, however, an active inflammation, which at once excludes the two latter diseases. The rheumatism in the side is attended with acute pain, but with scarcely any cough, and with a hard pulse, nor is the face full and flushed. True pleurisy resembles, in many respects, peripneumony; but, in general, the face is less flushed, the pulse harder, the cough less violent, and without, at any period, expectoration.

Pleurisy and peripneumony, however, are seldom wholly distinct, and the diagnosis is of less importance, as the remedies are nearly the same. (See PLEURITIS.) Where cough exists, whatever be the name of the disease, expectoration must be brought on, if possible. Various other inflammations of the chest, as of the pericardium and diaphragm, are attended with similar symptoms, but the treatment differs so little, that no injury can arise from mistake. It is necessary, however, to remark, that the seat of peripneumony is often changing, that it shifts from one side to the other, to different parts of the same side, and when the lower part of the right lung is inflamed, a similar affection is communicated to the liver, occasioning pain in the right epigastrium, with an expectoration yellow, copious, and frothy. See HEPATITIS.

Peripneumony terminates, like other inflammations, in effusion, suppuration, or gangrene. It has, however, a termination peculiar to itself, viz. hæmorrhage in the lungs, from the increased vis a tergo. Effusion is the salutary termination; and when we perceive an apparent resolution by expectoration, some effusion always accompanies it; for after violent peripneumonies, adhesions are often found between the lungs and pleura, or watery effusions take place in different parts of the chest. Suppuration is known, as in other parts, by a remission of the pain and shivers, followed after some time by heat and increased perspiration. Throbbing pain is seldom felt, except when the seat of the disease is just within the intercostal muscles; and in that case a fulness, as well as pain, on pressure, point out very dis-

tinctly the part affected. Gangrene is shown by the sinking pulse, general debility, with a sunk countenance, and the usual placidity, or occasionally with a ghastly stare. The termination by hæmorrhage is sudden; and it is discovered by dissection, since the lungs are found to resemble in substance the liver.

If we perceive, on the fourth or fifth day, the spitting more free, less glutinous, whiter, approaching in the distinct clots to a globular form, the disease is evidently remitting. The usual signs of a freer, slower pulse, a white sediment in the urine, and a soft clammy moisture on the surface, are equivocal, without some change in the expectoration; for unless the sputum assumes the salutary appearance, should even the fever remit, suppuration or phthisis are frequent consequences. The suppuration, however, from peripneumony, is very different from that which constitutes consumption, and we have in one or two instances suspected that a salutary termination of the former has checked a beginning hectic. On the other hand, however, inflammation of the lungs often excites a similar state in a previously indolent vomica, and consumption is thus the consequence of peripneumony. It has been doubted whether the salutary effusion may not by absorption, perhaps by the drying power of the air, assume the purulent appearance; because purulent matter is sometimes said to appear independent of any abscess, or indeed of any loss of substance. This induced De Haen to consider pus as a secreted fluid; but though we have admitted that secretion may take place from arteries without any glandular apparatus; yet, on the whole, there is no evidence at least in this disease that pus is secreted, or that the dried effusion assumes its semblance. (See Pus.) If pus in peripneumony appears, suppuration has preceded.

A bloody sputum is often alarming, as the forerunner of an hæmorrhage; but such consequences seldom follow: on the contrary, we have often found it a salutary symptom, not differing in its effects from a topical bleeding. A diarrhœa coming on about the fifth or sixth day is often a highly dangerous event, as it prevents the salutary discharge by expectoration, or if the latter has appeared, checks it, without supplying its place. A moist skin, with an improving sputum, is often advantageous; while a dry heat, oppressed breath, with great anxiety, are alarming. To be able to lie low for a little time on either side is favourable; but the prognosis is always peculiarly uncertain, since the disease is so often exasperated unexpectedly, and changes its seat, with a new accession of fever frequently in its course. The cough is often most distressing, which we dare not mitigate, as every remedy for this purpose checks expectoration. We have not, however, found that the most incessant cough is a prognostic of a peculiarly dangerous state of the disease. Delirium is often a dangerous symptom; but we have sometimes seen peripneumony alternating with delirium, and in that case the disease has yielded with little trouble. Favourable signs appearing on the seventh day give a probability of a safe termination, should no metastasis occur; but in no disease is the strictest caution more necessary, since in none are there more unexpected changes, in none is the fatal event frequently so sudden, while our apprehensions are lulled by promising symptoms. If we pass the seventh day without any favourable change the patient seldom recovers. If the changes are not decisively salutary before the fourteenth, complete recovery cannot be expected.

The remote causes of peripneumony are those of inflammatory fever in general. An inflammatory diathesis, by which we understand increased tone of the arterial system, is usually necessary to give the usual active form of the disease; but we shall find that it may take place when this state is in an inconsiderable degree, or when it is wholly, absent. That more topical causes, as straining, obstructions, or any injuries of the lungs, may induce it, appears doubtful. They may perhaps predispose to it, or, on the accession of exciting causes, may render the subsequent complaint more violent. The effect of the causes of inflammatory fever directed to the lungs is the constriction of the extreme vessels, and this, with the increased vis a tergo, as explained in the article INFLAMMATION, q. v. will explain all the symptoms.

Dr. Fordyce, in the second part of his Elements, observes, that nature without assistance sometimes relieves the complaint by an increased secretion of mucus from the lungs, which at first is spit up thin, and with uneasiness, becomes gradually thicker, of a yellowish or greenish cast, and at last white. It is often, he adds, mixed with blood, relieving, and gradually diminishing, the symptoms, so as to remove the disease before the fourteenth day. Peripneumony is sometimes cured by an hæmorrhage, or by an inflammation arising in some other part of the body.

The artificial cure depends on the same principles. Expectoration, we have observed, is the only salutary evacuation, but to procure it, the inflammatory stricture must be first taken off. To these views every part of the curative plan must be directed. Indeed in true peripneumony nature can seldom relieve without the aid of art; and in those cases in which disease has spontaneously or with little assistance yielded, it has probably been rather catarrhal than peripneumonic. Catarrh, we have seen, consists in an inflammation of the bronchial glands, and if it extends farther into the substance of the lungs becomes peripneumony, though in that case the disease is seldom of the more active, the more acute, kind.

Bleeding is the only remedy for the former purpose, and it has been often employed with freedom, often with temerity. In the use, however, of this mode of relief, we must anxiously consider the patient's constitution, habits, and situation. The strong and robust; those who have lived full, and been subject to inflammatory diseases; the laborious rustic, who breathes the pure air of a mountainous district; will bear very large and repeated bleedings. In such cases it is often necessary to take from eighteen to twenty-four ounces at once, to repeat the operation after twelve hours, scarcely to a less extent, and again after twenty-four or thirty hours. The limits in these cases are the relief of the pain, some mitigation of the hard pulse and burning heat. We have proceeded even farther with this evacuation in particular circumstances; but when, in the constitution we have described, the attack is violent, the discharge of blood must be considerable within a short period, and it should be taken from a large orifice. The appearance of the blood affords us also some criterion for the propriety of the repetition. If the clot is dense, of a buffy surface, contracted round the edges,

resembling in form a cup, the patient will usually bear with ease farther evacuations. The buffy appearance, however, is often seen when the texture of the clot is loose, sometimes even in the blood from scorbutic persons, so that the density must also be examined. A convenient method for this purpose is the pressure of any substance of a given weight, as of a key kept constantly in the pocket.

The evacuation must be more guarded in different circumstances, and, in all, the shades from the extreme case already described to the indolent inhabitant of a crowded town, or the sedentary mechanic, exhausted by labour and poverty, our conduct must be cautiously varied. The practitioner must recollect, that this remedy is designed to obviate the inflammatory diathesis, which is chiefly distinguished by the general firmness and vigour of the whole habit, and by the hardness of the pulse. The former is not always to be certainly ascertained, and the latter is still more equivocal. The resistance formed by the obstruction of the larger vessels will often give a seeming hardness where there is a slight degree only of inflammatory action, and the pulse has been denominated harsh rather than strong. In all doubtful cases, therefore, the greatest care is requisite, particularly in ascertaining distinctly the effects of the first bleeding. If these are doubtful, we should lessen the subsequent evacuation, even should symptoms appear to require it. In these uncertain cases we seem to relieve pain; but the pulse, instead of becoming fuller and softer, are often more contracted, or more weak; the countenance may, indeed, appear less flushed, but it is also sunk; the difficulty of breathing is greater; and the little expectoration which might have appeared is checked. The disputes, whether blood should be taken from the side affected, or the opposite side, chiefly relate to the use of bleeding in PLEURISY, q. v., and we shall notice them under that article.

When we feel doubts respecting the propriety of general bleeding, we may still evacuate blood from the part affected, by means of cupping-glasses or leeches. The latter are often preferable, as they do not render the subsequent applications of blisters inconvenient. If the disease is violent, the number of leeches to the side should not be less than eight or ten; but in exhausted constitutions the less number may be more adviseable. If cupping-glasses are applied, not more than five or six ounces should be taken, as the evacuation is more rapid.

When the increased tone of the arterial system is thus in part removed, it may be farther lessened by *laxatives* and refrigerants. Whatever may be the inconvenience of laxatives in the advanced stage, they are highly useful in the earlier periods, and in the three first days may be freely employed: the milder saline laxatives are preferable. The most useful refrigerant is nitre, which may be combined with the citrat of potash, or determined more certainly to the skin by the addition of camphor, and of antimonial wine, or by a combination with the citrat or acetat of ammonia.

Emetics may be given in the earliest stage; but when the violent obstruction of the vessels of the lungs has taken place, they are doubtful remedies, and the nauseating antimonials are preferable. These, with the refrigerants, are the only safe and most effectual diaphoretics. Of the antimonials, the Kermes mineral has been preferred, though without any peculiar advantage.

The more violent fever will be, in some degree, lessened by these plans, and the local affection will be alleviated by *blisters*. These have been objected to in the earlier period of the complaint, as danger was apprehended from their stimulus; but there is little foundation for the caution. If bleeding be necessary, it should always be premised; and in the extreme case of highly inflammatory diathesis first mentioned, two bleedings at least are required before the blister will act with advantage. It should then be applied on the part affected; nor, as we have said, are the wounds from leeches any impediment. Should cupping-glasses have been applied, a little delay is necessary, before the wounds are closed by an inflammation of their lips. If blisters are applied very early, they sometimes drive the pain to another part, often to the opposite side, and it will be necessary to follow it with another blister, though, if the inflammatory diathesis is violent, bleeding must be repeated.

The cough may be alleviated by oily emulsions, by demulcents, or by inhaling the steam of warm water. Opiates, however, during the whole course of the disease, seem to be injurious; yet De Haen gave, as we have remarked, the tincture of opium, with olive oil; and other authors have occasionally employed this medicine; but, except when a sudden check is necessary for a diarrhœa, we have seldom used it, and even then with disadvantage in other respects. The extract of the white poppy has been given by Dr. Saunders; but this is so slight an opiate as scarcely to militate against the general opinion; and Dr. Hamilton, of Lynn, combined it with calomel, he thought with advantage; but his practice has not become very general. We cannot speak of this combination from our own experience.

The *expectorants* are the chief remedies; and the most effectual of these, in the first days of the disease, are the remedies already recommended for the fever, particularly the camphor, and the nauseating doses of antimonials. When the inflammatory obstruction is in some measure removed, when the expectoration is less glutinous, and assumes a more globular form in the bason, with a whiter colour, a gentle stimulus on the bronchial glands is useful. The gum ammoniac is less irritating than the squills; and it was formerly combined with soap, to render, it was said, the sputum whiter. However ridiculous this language may appear, we have suspected that the effect had some foundation, and that with soap the expectorants were more effectual than in any other form. Those who are fond of pursuing analogies may, from the same source, explain the little inconvenience experienced by De Haen from opium when combined with oil. After a day or two the squills may be combined with the gum, and the dose gradually increased.

When every circumstance seems, in this way, to be favourable, and every symptom to assume a more salutary appearance, our progress is often checked by two events. The expectoration will sometimes suddenly stop; or a diarrhœa coming on will have the same effect. The expectoration stops occasionally from some irregularity, from the strength having been exhausted by previous bleeding in excess, or without our being able to trace the suppression to any cause. In this

ease, breathing the steams of vinegar, the ammonia added to the medicines, increasing the dose of the squills, or a blister to the back part of the neck, will often bring it back. Whatever is attempted must be closely followed, for the danger is imminent; nor is there any great impropriety in adopting, nearly at the same time, each means of relief, provided the doses are not so considerable as to exhaust the excitability. In this situation, also, we are advised to put blisters to the inside of the thighs or legs; and, though it is not easy to explain their effects on any principle but the erroneous system of revulsion, we have thought them serviceable. In reality, when nature is sinking, the obstruction often yields, and the last remedy gains the credit; so that when medicine seems to fail, if we support the patient with good broths, or jellies, interposing when necessary a little wine, we shall often succeed. Slight emetics will be frequently of service at this time, and restore the expectoration, whose return was before hopeless: the seneka root seems to have gained reputation from its effects in these emergencies.

A diarrhœa supervening is a more distressing event; and it is not uncommon either from some irregular and erroneous exertion of nature, or from the medicine. It has been usually attributed to the squills, but these will not produce this discharge when most wanted; to the gum ammoniac, which is scarcely in any case laxative; to the oily emulsions, the usual vehicle which contains a proportion of oil inadequate to the effect. Whatever be the cause, the event is equally distressing and dangerous. We have in emergencies interposed opium, but the expectoration is by this means more effectually checked; and if we attempt to restore it by emetics, we incur the risk of their operating on the intestines rather than the stomach. The seneka is liable to the same inconvenience; and the effects of vitriolated zinc and copper are too uncertain, often too violent, to be trusted in such a dangerous situation. Difficulties so painful we have more lately endeavoured to elude; and by adding the pulvis è creta c. cum opio in the dose of about five grains, often with a drop, or more, of the oil of cinnamon to each draught, we have patiently waited the event. This plan, when a diarrhœa seems to impend, we often had reason to be better satisfied with than the more active opiate. The extract of logwood is an useful addition, and will sometimes alone check the diarrhœa, but cannot alone be trusted.

Through the whole course of the disease warm diluting liquors should be freely given, the room be airy, the curtains open, avoiding equally too great heat, or a current of cold air. An erect position is generally recommended; but sitting up occasions fatigue, and a half erect posture, supported by pillows, is equally advantageous. Bathing the feet and legs is an equivocal remedy, and should not be attempted without the greatest caution. If the water is too warm, the stimulus will be too great; if too cold, it may produce a shiver. Every means of avoiding either should be carefully guarded.

Many slight remedies have been spoken of with high commendation. If such have succeeded, it is fortunate for the patient and the practitioner. We have found, however, peripneumonies so intractable and so dangerous, with every precaution, that we have suspected violent catarrhs to have been raised into importance under this more formidable title.

See Baroni de Pleuro Peripneumonia; Huxham on Fevers; Stoll Ratio Medendi, 1770, and Aphorismi de Febribus; Morgagni de Sedibus et Causis Morborum; Baglivi Opera; Lancisi Opera; Vogel Prælectiones Academicæ; De Haën Ratio Medendi, tom. ix et xi.; Sarcone Istoria Ragionata de Mali osservati in Napoli, part ii.

Peripneumonia putrida. Inflammatory peripneumonies do not merit the appellation of an epidemical disease, for, though frequent about the same time, they seem rather to arise from the severity of the weather than any peculiar miasmata. The putrid peripneumony, on the contrary, proves often a very formidable epidemic, and its nature is that of the typhus, with which the peripneumony is accidentally combined. It is the property indeed of every epidemic fever to assimilate each accidental disease to its own nature.

The putrid forms of inflammatory diseases have not shared the attention of nosologists, because their systems would not always consistently admit them. They claim, however, particular notice, not only on account of the diagnostic, but of the very different and opposite treatment which they require. When lately speaking of measles, we mentioned Dr. Willan's opinion, that the supposed putrid form of the complaint was really a different disease, the scarlatina. We then observed, that though we had not seen such a disease, from analogy its existence was highly probable; and the sheet had scarcely passed the press, when measles, in its least equivocal form, but attended with putrid fever, and every mark of debility, occurred to us. In short, it was exactly such a complaint as we supposed in that article it might be. (See Morbilli.) The putrid peripneumony we have had occasion to see in four distinct epidemics, and shall now shortly describe.

It begins with coldness, like other peripneumonies; but the cold continues long, without being followed by heat: the depression of strength is perceived very early, and the countenance, though sometimes reddish, is usually sunk. The pain of the side is highly distressing, and the cough almost incessant. The pulse has the semblance of strength, but beats with a stroke less firm and full than in the inflammatory peripneumony, and may be distinguished from the oppressed pulse lately described, by its being soon stopped when pressed. The rest of the scene is soon concluded. Debility hastens rapidly on; the pulse flutters; the countenance becomes truly hippocratic; and life soon ebbs, without our having the power to recall it.

Expectoration scarcely in any instance comes on, for the final scene anticipates the period of its approach; and the vessels, even when the duration of the disease is prolonged, are no longer able to propel it. Every evacuation hastens the event; nor is there often room for the mildest emetic, or the most gentle laxative. The disease is usually fatal on the fourth or fifth day; and if any blood is incautiously drawn, or any laxative has a violent effect, on the third, frequently on bleeding, the patient has sunk in twenty-four hours.

The best remedy is camphor, with the aromatic confection, and wine in large quantities. After a day or two the bark may be given in doses as large as in the

most putrid fever; nor has it appeared to increase the difficulty of breathing. A gentle salutary moisture on the skin, the diapnoe of Chenot, is the most favourable symptom, together with a return of the natural character of the countenance. Should an evacuation by stool be necessary, a clyster only should be trusted. In fact, every rule in the treatment of the true peripneumony must be abandoned, and the strength by every means be supported.

Dr. Cappel, a pupil of Frank, the great admirer of Brown on the continent, has described an epidemic of this kind which occurred in Dr. Frank's institution, but not so acutely putrid as it has occurred to us. Purgatives were useful in the early state; and where the debility was not very great, we have found them in the very earliest stages salutary, if given with caution. He enumerates also the Kermes mineral, seneka, camphor with calomel, and all the medicines which he could find had been recommended in inflammatory peripneumony as likely to be useful. With no little inconsistency also he prefers the Brunonian doctrines, though Brown speaks only of bleeding and purging as remedies for peripneumony, while bleeding, even with leeches, is pronounced fatal, and purges only admitted in the earliest periods. Such perhaps were the commands of Frank.

Authors generally speak of this disease as an erysipelatous inflammation of the lungs. See Sarcone Istoria-ragionata; Ludwig Adversaria, part i. p. 52; Huxham de Aere, &c. vol. i. p. 324, 326; Forestus, lib. i.; Obs. 16, 17, in scholio; Huxham, vol. ii. p. 63; Baglivi Appendix de Pleuritide.

PERIPNEUMO'NIA NO'THA. The SPURIOUS or BASTARD PERIPNEUMONY; *catarrhus suffocativus* of authors, may appear at any time in the year, but it usually approaches early in the spring, particularly after a very sharp winter. This kind of peripneumony resembles the true, but the heat, pain, and thirst, are not so considerable, and the accumulations of mucus in the lungs are more considerable.

This disease is strictly and originally catarrhal, affecting those advanced in years, or who have weakened their constitution by any excesses. It is brought on by cold, and particularly by the north-east winds of early spring. The catarrhal accumulations are not readily thrown off, and the obstruction excites fever and inflammation; but, as may be expected in such constitutions, of a languid, sluggish kind. It is said to be occasionally produced by drying up an old ulcer, or by a dropsical disposition; but it is then apparently confounded with hydrothorax.

Boerhaave observes, that the bastard peripneumony steals upon the patient with a slight weariness, weakness, debility of the intellectual functions, dyspnœa, and an oppression of the breast. The uneasiness it excites is so small, that the heat and fever are scarcely sufficient to make the patient sensible of his disorder: afterwards slight shiverings, returning in paroxysms, and the attacks of a gentle fever suddenly increasing the dyspnœa and debility bring on death, without any particular change in the pulse or urine. Sydenham, who first distinguished this disorder from the catarrh, gives the following account of its attack and progress. The patient is hot and cold alternately, giddy, complains of an acute pain in the head, when the cough is most troublesome. He vomits all liquids, sometimes with and at others without coughing; the urine is turbid and intensely red; the blood taken away resembles pleuritic; the patient breathes quick and with difficulty; if advised to cough, his head aches, as if it would burst; a pain is felt in the whole breast; and a wheezing is observed by the attendants whenever the patient coughs. To this may be added, that the patient's cheeks and eyes often appear slightly inflamed, the pulse is small, often intermitting. Lying low, or on one side, is peculiarly painful.

If the strength does not return after the disease is removed, the pulse continues quick and weak, breathing difficult and oppressed, with at times shivers, followed by flushing in the cheeks: if the lips are dry, and the appetite defective, the patient soon sinks with suffocation.

The disease is therefore in every view catarrhal, and peripneumonic only from obstruction or accidental cold. Its most frequent termination is in hydrothorax, and indeed in the description of every author symptoms of hydrothorax are occasionally mixed. It is undoubtedly difficult to avoid confounding diseases similar in their symptoms, and rapidly changing, to each other; nor is it of consequence, since the treatment differs so slightly. The very inconsiderable degree of inflammation which occurs in peripneumonia notha requires no very peculiar conduct. It arises from accumulation of mucus, and is relieved by lessening the load.

The indications of cure will be to expel the accumulated mucus, and to strengthen the habit in general. The warmer expectorants, with those which gently stimulate the bronchial glands, are the principal remedies. The former are the balsam of Peru, and the different turpentines; the latter the gum ammoniac and the squills. Perpetual blisters to the breast are often essentially serviceable, and issues or blisters on the legs or thighs have been recommended, though it is not easy to ascertain the principle on which they act, or indeed whether they are really advantageous.

If the cough is violent, opiates may be given as soon as expectoration is tolerably free; a mixture of the pil. ex opio and pil. ex aloe cum myrrhâ, may be safely given in such doses as circumstances may require. To keep the bowels lax is essentially necessary, and in giving the opiate we must never interfere with the discharges by stool.

The tetradynamiæ are very useful as stimulant expectorants, and the mustard whey is a common as well as a salutary drink. The seneka is often too violent in its operation, but in moderate doses may be useful, for active emetics are often injurious. Warm weather or a warm climate are often useful auxiliaries

The strength is restored by the warm balsams, with the purer bitters; by chalybeate waters; moderate and constant exercise; by a strict attention to diet, which should be generous, without being too rich or flatulent; and by a steady moderate discharge from the bowels. For this purpose, the warmer laxatives, in the form of tincture, are useful, and none are more so than the tinctures of rhubarb, sena, and jalap, in equal proportions.

When the disease is apparently combined with hydrothorax, or, in other words, when the mucus or water is in the cells of the lungs, the active expectorants and

diuretics must be joined with brisker purgatives. The squill and the gum ammoniac are the chief remedies in these circumstances, and they may be conveniently combined with a proper proportion of the extract of jalap.

See Sydenham's Works, part i.; Huxham, vol. i. p. 163; Grimm on the Epidemics of Eisenach; Boerhaave's Aphorisms, with Van Swieten's Commentary.

PERIPYE'MA, (from περι, and πυον, *pus*.) A collection of matter surrounding any part.

PERIRRHŒ'A, (from περιῤῥεω, *to flow from every part*). A copious flow of humours from every part.

PERIRRHE'XIS, (from περι, and ῥηγνυμι, *to break*). See HÆMOPTYSIS.

PERISCEPA'STRUM, (περι, and *cepastrum, a wild onion*; from its encircling the head in successive folds like the coats of that bulbous root). See FASCIA.

PERISCYPHI'SMUS, (from περι, and κυφος, *gibbous*). An incision made across the forehead, or from one temple to the other, over the coronary suture; formerly used in considerable inflammations of the eyes. The lips of this wound were kept asunder with lint; and when the disorder abated, the denudated bone was rasped, and the wound healed. P. Ægineta, lib. vi. c. 7.

PERISTA'LTICUS, (from περιςελλω, *to contract*). The vermicular motion by which the intestines protrude their contents.

This motion is not apparently downwards, but the contained matter is moved backwards and forwards, though, on the whole, the tendency is to the inferior portion of the intestine. This kind of motion is evidently designed to expose the alimentary mass more completely to the mouths of the lymphatics. In the large intestines, where the hardened mass is moved with greater difficulty, the contractions are stronger in consequence of the fixed points which the plaits of the intestine afford, and the contracted portion forms a valve to prevent regurgitation.

PERISTAPHYLI'NUS EXTE'RNUS, (from περι, and σταφυλη, *uvula*). See CIRCUMFLEXUS PALATI.

PERISTAPHYLINI INTE'RNI. See PETRO-SALPINGO-STAPHYLINI.

PERISTA'PHYLO-PHARYNGÆ'I, (from περι, σταφυλη, and φαρυγξ). Two small muscles inserted between the uvula and lower extremity of the internal ala of the apophysis pterigoidæus, and running obliquely backward on the sides of the pharynx. They are difficult to find in very lean subjects, and seem to be what Santorini calls *hyperopharyngæi*, or *palato-pharyngæi*.

PERISTERIUM, (from περιςερος, *a pigeon*, because pigeons are fond of it). See VERBENA.

PERISTRO'MA, (from περισῖρεννυω, *to strew about*). See INTESTINA.

PERISY'STOLE, (from περισῖελλω, *to compress*). The interval of rest betwixt the systole and diastole of the heart.

PERITE'RION, (from περι, and τηρεω, *to preserve*). See TREPANUM.

PERITOMA'TICOS, (from περιτῖωμα, *an excrement*). See APERITTOS.

PERITONÆORE'XIS, (from περιτοναιον, *the peritonæum*, and ῥησσω, *to break*). A bursting of the peritonæum, and consequent hernia.

PERITONÆUM, (from περιτεινω, *to extend round*). This membrane, which lines the belly, and invests all the viscera contained in it, is of a close texture, though very pliable, capable of great extension, and so elastic as again to recover its ordinary size, as appears in pregnancy, &c. It is connected to all the circumambient parts by a cellular membrane, generally called the *external lamella of the peritonæum*, which forms what are styled the *processes of the peritonæum*. The peritonæum, nevertheless, hath productions peculiarly its own, which run from without inwards, and cover externally the contained parts. (See ABDOMEN.) The cavity of the peritonæum is the receptacle of effused water in ASCITES, q. v.

PERITONI'TIS, (from *peritonæum*). INFLAMMATION OF THE PERITONÆUM, including the mesentery and omentum, inflammatio mesenterii. Dr. Cullen defines it to be a fever, with pain in the belly, increased when the body is erect, but without the proper signs of abdominal inflammations; and places this disease in the class *pyrexiæ* and order *phlegmasiæ*. The species are: 1. *Peritonitis propria*; 2. *Peritonitis omentalis, omentitis*, or *epiploitis*; 3. *Peritonitis mesenterica*. See INFLAMMATIO MESENTERII, and PUERPERALIS FEBRIS.

The general directions for the cure of peritonitis are the same with those of ENTERITIS, q. v. But it is necessary, as we have already observed, to distinguish them, since stools, though necessary, are not equally essential, and the application of a blister is more so. Opiates also may be given more freely, and, with the addition of the ipecacuanha to determine to the skin, they are often highly useful. The deeper seated species, as they are more difficultly distinguished, cannot be opposed by any particular plans. They must be in general treated as enteritis.

PE'RLE. See ALBUGO OCULORUM.

PE'RLÆ, (Ital. and Span.; *perl*, Welsh; *perlea*, Germ.). See MARGARITÆ.

PE'RNIO, (from περνα, *the heel*), *chimethlon, erithema à frigore, bessamen, bugantia*; a variety of phlogosis erythema, in Dr. Cullen's system; KIBE or CHILBLAIN: this disorder attacks the hands, feet, heels, ears, nose, and lips, usually of children, and those of a sanguine habit and a delicate complexion. It arises from severe and continued cold, or from heat too suddenly applied after it.

The parts affected are inflated, and afterwards heat; redness, pain, and itching, come on; small blisters are formed, which soon burst, leaving a slight excoriation, which at length becomes a deep and obstinate ulcer, discharging a sharp sanious matter; in the worst degree degenerating into a gangrene.

Its immediate cause is a diminution of the excitability of the extreme vessels, and the erysipelatous appearance of the earliest period is only the first stage of gangrene. It seems chiefly to occur to children whose vessels are full; and, in many instances, it has appeared to be an inflammatory deposition, which it has been injurious to repel hastily. If it be a deposition, the nature of the complaint will be easily known by the fulness of the habit, and the relief of some general indisposition; and in that case laxatives, alteratives, and a simpler diet, will be necessary.

If from cold, the constitution should be gradually strengthened by the cold bath, bathing the feet and legs frequently in cold water; avoiding too much heat, when the feet are cold, and particularly warming the

feet when without shoes. It may be for a time prevented by warm socks, &c.; but these only render the person more subject to the complaint when they are neglected.

When a cough, or other circumstances, forbid the application of cold to the extremities, the best substitute is, to wear dog-skin socks, or gloves, day and night, until the inflammation is removed. Linnæus recommends bathing the part with diluted marine acid; and the following embrocation is often an efficacious remedy. ℞. aceti, sp. vini tenuioris āā ℥ vi. aluminis ʒ ij. m. In greater degrees, when the part is frost-bitten, the treatment must be the same as directed in the article CONGELATUS.

Oil of turpentine, camphorated spirit of wine, camphorated oil, and volatile linament, are often useful applications; and electricity has been employed, it is said, with success. In Scotland the fungous ulcerations which sometimes ensue are destroyed with a hot iron; and in other places, alum beat up with the white of an egg is applied with advantage.

Vapours are sometimes more effectual than baths, and the vapours from vinegar are the best; but cold and astringent applications should follow, as these applications relax the vessels of the part. When ulcerated, the steams of vinegar and a warm digestive should be applied to the sore.

See Heister's Surgery; M. A. Severini Dissertatio de Pernionibus in Libro de Abscessibus; Tissot's Advice to the People; Bell's Surgery, vol. v. p. 440; Pearson's Principles of Surgery, vol. i. p. 142; White's Surgery, p. 22.

PERONÆ'A ARTE'RIA, (from *perone fibula*); is the smaller division of the posterior tibialis, passing down behind the fibula, between the soleus and the flexor pollicis. It then crosses the interosseous ligament, and about the upper and back part of the os calcis forms an arch with the tibialis posterior.

PERONÆ'US BREVIS, (from the same); *peronæus anticus* of Douglass, and *medius* or *anticus* of Winslow; a muscle covered in part by the peronæus anticus. It rises from the outer part of the fibula, its fleshy fibres continuing to adhere to that bone, lies in a groove in the malleolus externus, and is inserted in the basis of the last metatarsal bone of the little toe.

PERONÆ'US LO'NGUS; *primus* or *posticus* of Douglass, rises from the external lateral parts of the head of the tibia, and from the anterior outer surface of the fibula; its tendon is turned back under the tarsus, bound down by an annular ligament with the brevis, passing over the os cuboides, at which place it hath a sesamoid bone, and runs across the sole of the foot to be inserted into the basis of the first metatarsal bone, being an abductor. Near the insertion of this muscle there is a small bursa mucosa.

PERONÆ'US SECU'NDUS, *semifibulæus*, rises about the middle of the outward part of the fibula, and, as it runs under the malleolus externus, becomes tendinous, and is inserted with the tendon of the peronæus brevis into the metatarsal bone of the little toe.

PERONÆ'US TERTIUS, *nonus Vesalii*, is situated at the anterior inferior side of the lower part of the leg, closely connected with the outer edge of the peronæus longus. Its tendon passes under the annular ligament, and running obliquely outward, is inserted into the metatarsal bone of the little toe. It is by late authors considered as a portion of the extensor longus digitorum pedis.

PERONÆ'A VE'NA is one of the divisions of the poplitea; and runs nearly the same course with the artery of the same name.

PERO'NE, (from πειρω, *to fasten*; because it fastens the tibia and muscles together). See FIBULA.

PERONE'US BRE'VIS, (from *perone*; see above). See EXTENSOR DIGITORUM LONGUS.

PE'RSEA, (from *Persia*, whence it was brought). See MALA ARMENIACA.

PE'RSICA, (from *Persia*, *Rhodacinea*, from *Rhodes*). The PEACH-TREE; its kernel is called *machærna*; the fruit *malus Persica*, *amygdalus Persica* Lin Sp. Pl. 676. The fruit is spongy, cold, and watery, but not unwholesome, except in weak flatulent stomachs. The leaves are a narcotic bitter, and perhaps nearly as deleterious as the laurel leaves. These, as well as the flowers, are given as a vermifuge, sometimes with success. Half an ounce of the recent flowers, or one quarter of this quantity, when dry, is considered in infusion as the proper dose.

PERSICA'RIA U'RENS, (from *persica*, as its blossoms resemble those of the peach); *hydropiper*, CULRAGE, LAKE-WEED, WATER-PEPPER, BITING ARSMART, *polygonum hydropiper* Lin. Sp. Pl. 517; is an annual, aquatic plant, with oblong uncut leaves, pointed at both ends, and with imperfect flowers set in spikes on the tops of the stalks. The cup is thick and fleshy, divided into five oval segments, which closing, form a cover to an angular glossy seed. The leaves have a burning taste, nearly allied to the arum; but their acrimony is dissipated or destroyed in distillation. They are said to be antiseptic, diuretic, and aperient; but are not used in the present practice. See Raii Historia.

PERSICA'RIA MACULA'TA. DEAD OR SPOTTED ARSMART; *persicaria mitis*, *polygonum persicaria* Lin. Sp. Pl. 518; grows also in wet grounds, and is said to be antiseptic, but is not in use as a medicine. See Raii Historia.

PERSICA'RIA SILIQUO'SA; *balsamina lutea*, *noli me tangere*, *impatiens herba*, *mercurialis sylvestris*; QUICK IN HAND, TOUCH ME NOT; is not a species of persicaria, but of the impatiens. It is the *impatiens noli me tangere* Lin. Sp. Pl. 1329; and is said to be a forcible diuretic, but is never used. See Raii Historia.

PE'RSICON, (from *Persia*). See JUGLANS.

PE'RSICUM BALSAMUM. See BENZOINUM.

PE'RSICUS I'GNIS. See CARBUNCULUS.

PERSI'STENS FE'BRIS, (from *persisto*, *to persevere*). A REGULAR INTERMITTING FEVER.

PERSONA'TA, (from *persona*, *a mask*, because, on the Roman stage, the leaves were used as a mask. Pliny). See BARDANA MAJOR, and BARDANA ARCTICUM.

PERSONATÆ, (from *persona*, *a mask*). One of the natural orders of Linnæus' Fragments, distinguished by an irregular ringent corolla. The greater number of genera agree with those plants which have two stamina longer than the others, and seeds in a siliqua.

PERSPIRA'TIO, (from *perspiro*, *to breathe through*). PERSPIRATION, *transpiratio*, *anapneusis*, *discussio*, *diaphoresis*, *diapnoe*, *diflatio*. The importance of this evacuation from the skin is very generally understood and

acknowledged. Cheerfulness and hilarity accompany its free discharge, languor and distress its suppression. We anticipated this subject under the article DIAPHORETICA, q. v., where we noticed the different forms in which the perspirable matter is discharged, as well as the sources from which it is produced. We there distinguished the halitus that forms the salutary, insensible perspiration thrown off probably in a gaseous form, from that more sensible discharge whose form is seemingly a vesicular vapour; and again from a decidedly fluid sweat. The two former are from the sames sources, either exhalent arteries or cuticular follicles; the latter more probably from exhalent arteries, as it is apparently serum unchanged, and as the skin sometimes feels harsh and hard, though bathed in sweat. Perspiration also, in the two former states, is attended with cheerfulness and serenity; sweat, even when it relieves pain, leaves the patient languid and oppressed. It is not an objection to this opinion that anatomy has not discovered any glandular apparatus under the skin for either evacuation, since it is evident that the extreme vessels can alone separate, perhaps form, peculiar fluids; and there is not a greater difference between the rarest halitus and the most fluid sweat, than between the mild mucus of the Schneiderian membrane, and the acrid discharge, when this membrane is inflamed by a catarrh, or between the tears in the natural state, and the burning streams which flow from the eye in opthalmia.

From the consequences of perspiration in excess or defect, it is evident that the state of the extreme vessels is intimately connected with that of the stomach and the brain; nor does the commonest observation require any aid to explain fully the changes in the functions of the latter, when in the access of fever perspiration is retained either by a spasm or a quiescence of the capillaries. Various other appearances show a similar connection with different parts of the nervous system. When a catheter or a bougie, for instance, is introduced into the urethra, a shivering is often induced, sometimes so great as to excite a hot fit, and a single paroxysm of fever. A dislocated ancle, Van Helmont informs us, produced in himself a shivering. Violent pain, a harsh sound, terror, and many purely mental affections, will have a similar effect; so that it was not inaptly said that, like some insects, we live on the surface almost exclusively.

The perspiration, when fluid, contains a large proportion of water, some gluten, and a small quantity of muriated ammonia. When in the form of air, its chief ingredient is carbonic acid gas, sometimes azotic gas. It is highly probable that the nature, at least the proportions, of each vary in different constitutions, and in different circumstances; but experiment has not pointed out what these are, nor indeed are physiologists perfectly agreed which is the most common discharge. Azote, we have reason to believe, is taken in with the air in respiration; so that it is scarcely probable it should be discharged by an organ similar in its office to the lungs. The proportion of carbone in the system is constantly decreasing in the process of animalisation, and therefore it is the more excrementitious fluid. It will not also have escaped the reader, that the difficulty we felt in tracing the changes of the diet in its assimilation, were those chiefly connected with the proportion of azote in the animal fluids.

We hinted in the article MEDICINA STATICA, that, during the reign of the mechanical physiology, the state of health was measured by the weight; and if the egesta were equal to the ingesta, all was supposed to be well. When the balance turned, showing that the former were supplied, the morsel raised on the fork was rejected. In this enquiry, it was found that of eight pounds of aliment, five passed off insensibly; for the excrementitious matters amounted only to three. It appears, however, by subsequent experiments, that the smallest proportion of the quantity lost is discharged by the skin, and, from calculation, the surface of the lungs greatly exceeds that of the body, so that its perspiration, from this view also, is probably more considerable; and in colder climates than those of Italy, where Sanctorio's experiments were made, the quantity passing off by the lungs is probably far greater than the calculation. Is it that the skin is chiefly destined to convey the halitus, and the lungs the watery fluid? This is not very probable, since carbonic acid is discharged from the latter; nor is there more probability in the supposition, that azotic gas is separated exclusively by the skin.

Perspiration may either be in excess, defective, or altered in its qualities. Perspiration in excess is often partial in the feet and the axillæ; and the fetid odour, as well as the inconveniences from the suppression, shows that the quality is also altered. It is apparently in excess also in hectics; but as for a great portion of the twenty-four hours it is retained, there is some doubt whether it may be, on the whole, too great, and whether the debility may not arise from the loss of the gluten, combined with the perspiration when in a fluid form. In the sudor anglicus it seemed to sink the patient from the excess of the discharge, perhaps combined with the sedative nature of its cause. In weak states of the system the perspiration is usually too great, and the debility is increased by its excess. Wearing flannel next the skin occasions also, in warm weather, too copious an evacuation: it was formerly supposed that the too frequent change of linen was injurious in the same way. The means of obviating this excess is to remove its cause when known; to strengthen the system, particularly by cold air and the cold bath, except in cases of hectic. In the partial sweats, however, every astringent should be carefully avoided: the offensive smell may be lessened by the strictest attention to cleanliness; but to stop the discharge would be often fatal, always dangerous.

Excess and defect of perspiration are, in many persons, habitual, so that unless they produce disease, they never require any attention; and we have already shown that, in consequence of the balance of the secretions, neither viscidity nor tenuity of the fluids can arise from either. The latter is distinguished by a dry chapped skin, and by scaly eruptions, often leprous. It is induced, occasionally, by the drying powers of the harmattan; and in some peculiar occupations, as in dying, where the astringency of the dyes produces it topically in the hands; and in millers, as the hygrometric affinity of meal is so considerable, as often to split the planks of mill-houses. In these circumstances the disease is scarcely produced till the skin is hardened, for the perspiration is not originally defective, but too hastily carried off. When it is established, little real inconvenience seems to result,

for the excess of fluids is carried off by other organs; and as the change is gradual, and the state of the vessels unaltered, no disease is the consequence.

The altered quality of the perspiration is a subject which requires greater attention than it has received. We find from the peculiar smells of small-pox, miliaria, pellagra, and many other diseases, that some alteration has taken place; but its nature is unknown. In cancer, for in such cases the perspiration also is tainted, it seems to be the hepatised ammonia; in gout, the phosphoric acid. The nature of the odour of excessive partial perspirations in the feet, axillæ, &c. has not been ascertained. If it were more purely alliaceous, we should suppose it to be phosphoric, without such a proportion of oxygen as gave it acidity; but it is rather hircine, whose peculiar nature we cannot understand. But as all hircine odours show a sedative and deleterious power, this will sufficiently point out the necessity of assisting its discharge

PERTURBA'TIO A'LVI, (from *perturbo, to disturb much*). See DIARRHŒA.

PERTU'SSIS, (from *per*, and *tussis, a cough*); *tussis ferina, convulsiva, rheumatica*, a KINK-COUGH, HOOPING OR CONVULSIVE COUGH; is an epidemic, contagious, spasmodic disease, resembling often an intermittent in the regular return of the fits, and recurring often in the returning spring. See Huxham de Aëre, &c.; Morb. Epid. p. 76, 77.

The hooping cough usually begins with hoarseness, a cough of the common kind, with sometimes a slight fever. This cough becomes by degrees more harsh, and on inspiration a ringing sound is occasionally perceived; at first perhaps once only in two or three days, then more frequently, till it attends every fit. Previous, however, to this sonorous inspiration, the cough will appear peculiar in its violence, and by the convulsive rapidity of the inspirations threatening suffocation In many cases these convulsive efforts alone mark the disease, for the hooping never occurs. The violence of the cough frequently brings on vomiting, which terminates the fit, and is a favourable sign. The fits frequently occur irregularly, and are often numerous in a day and night. It is almost constantly observable that, within two or three minutes after a violent fit, a slighter will occur: a circumstance which points out the nature of the disease at a very early period.

The duration of the complaint is various; and it often recurs with violence, after it has appeared to remit, and almost to vanish. This is sometimes owing to taking cold; but occasionally happens without any assignable cause. The general health of the children is often unimpaired; and they will rise from their knees, where they usually throw themselves on the approach of a fit, and with a face of a dark purple from the straining, the eyes staring from their sockets, return with unimpaired spirits to their play. After a violent fit also, terminated by vomiting, they will eat greedily and voraciously. Some uneasy sensation precedes the paroxysm, which occasions crying in infants; and the elder children, as we have said, often fall on their knees at a chair. Though we speak of children, persons of every age are affected; but in adults it is usually slight.

After a short time, the hooping cough is attended with expectoration, frequently tinged with blood, which infants often swallow, and even children do not always fairly expectorate. This produces a diarrhœa, or renders occasional laxatives necessary. The disease affects children only once in their lives; and should there be exceptions to this position, we believe they are equally rare with a recurrence of small-pox. It is generally epidemic, and certainly contagious, though not highly so. Pertussis is not in itself dangerous, but it sometimes becomes so in infants by the debility it occasions, and in the more adult state by inducing peripneumony and hectic. In very weak children a fit has been fatal, apparently by occasioning a rupture of a vessel in the brain, sometimes by producing suffocation.

Hooping cough has been supposed to arise from acrimony in the stomach, on the diaphragm, or in the mucous follicles of the lungs. No satisfactory argument in support of either cause has, however, been adduced. It is apparently a spasm, purely nervous, from a miasma conveyed by the air, whose effects continue till the constitution is habituated to its stimulus, and again return, from any cause which increases irritability. The discharge of mucus is apparently not critical, but the glands are emulged by the violence of the cough, and the expectoration, at least, contributes to relieve the over-distended vessels.

This disease is not subdued by medicine: it will run its course, in spite of every effort. Medicine is not, however, useless; and we shall point out the foundation of our most salutary exertions.

We have said that the chief source of danger is from accumulation and inflammation of the lungs. In the robust and plethoric, therefore, bleeding is sometimes necessary, and a perpetual blister to the side or back is often useful in this view. Expectoration should be encouraged with the same intentions, and this renders frequent emetics very advantageous. In infants, for reasons already stated, occasional laxatives are also necessary.

Opiates may be given safely in moderate doses, but it is necessary to prevent their constipating effect by interposing laxatives. The tinctura opii camphorata is a safe and useful medicine.

Various antispasmodics have been at different times employed. The hemlock proposed by Dr. Butter has not succeeded in other hands; and the castor, combined with bark, in the proportion of one part to two, recommended by Dr. Morris, is scarcely more effectual. The asafœtida, spoken of with confidence, often fails; and the tincture of bark, with opium and tincture of cantharides, has been given for a long period with little success. The proportions are, ten parts of tincture of bark, four of elixir paregoric, and one of the tincture of cantharides, given by tea-spoonfuls. The white vitriol seems a more powerful medicine; and as it often excites vomiting, may perhaps be useful: it is apparently the active ingredient in a celebrated quack medicine, the *anti-pertussis*. The MOSCHUS ARTIFICIALIS, q. v. has been lately recommended, but has not been very successful. The arsenic has not, we believe, been tried. External applications have been numerous. In Poland, where the disease is endemic, oil of amber, with the aqua ammoniæ, sometimes diluted, is rubbed in on the spine. The old women of this country improve on the plan by rubbing it on the spine, the palms of the hands, and the soles of the feet, three times for three nights

successively. Garlic is also sometimes rubbed on the spine and sides, sometimes applied in the form of cataplasms to the feet. Change of air is highly commended; and repeated changes are sometimes apparently useful. We have thought the more high elevated situations less useful, and the lower damp ones more serviceable; but in the whole of the practice there is great uncertainty. Whatever determines to the surface is useful, so that exercise and cheerful society are often salutary. In some instances the sea air, and keeping the feet wet with sea-water, has been apparently beneficial.

Dr. Cullen places this disorder among the spasmi, defining it a contagious disease, attended with a convulsive strangulating cough, and sonorous, reiterated inspiration, often with vomiting.

In general, however, numerous medicines have, as usual, gained the credit due to nature. The disease will run its course, and at last disappear; and the last medicine, consequently, gains the credit. We may mitigate the effects, but we cannot cure.

See Sydenham's Works; Huxham de Aëre et Morbis Epidemicis, p. 76, 77; London Medical Observation and Inquiries, vol. iii. p. 281—286, 319—325; a Treatise on Kink-cough, by W. Butter, M. D.; Dr. Cullen's First Lines, vol. iii. edit. 4; London Medical Journal, vol. ii. p. 398.

PERUA'NUS CO'RTEX, (from *Peru*, the place of its origin). See CORTEX PERUVIANUS.

PERUVIA'NUM BA'LSAMUM, (from the same). BALSAM OF PERU; *hoitziloxitl* of Hernandez; *Mexican balsam; Indicum and Americanum balsamum; caburciba* of Piso; *myroxylon peruiferum* Lin. Sp. Pl.; Wildenow, vol. ii. p. 546. There are three kinds of this balsam; viz. the pale yellow, the balsam of incision, which is the best, but very rare, and of the consistence of honey. The shell balsam, the yellow sort inspissated by the sun's heat in gourd shells, in which it is sometimes brought to Europe, of a reddish colour, a very agreeable smell, and semi-transparent. The common or black Peruvian balsam is the kind we usually receive. It is extracted from the bark, branches, and leaves of the tree, by boiling in water; in consistence resembling honey, of a dark black colour in the mass; but, in small portions, of a clear reddish or yellowish brown, an agreeable smell, approaching that of a mixture of benjamin and storax, and of a bitterish pungent taste; easisly inflammable, not in the least miscible with water.

Distilled in a retort with an open fire, it yields a butter like that of benzoin, and sometimes a considerable quantity of concrete saline flowers similar to those from the same resin. If this balsam is rubbed with sugar, the white of an egg, or with the mucilage of gum-arabic, it is suspended in water in the form of an emulsion.

It is applied to wounds in nervous and tendinous parts; strengthens the stomach; is an useful expectorant in cases where the circulation through the bronchial glands is languid; consequently of service in peripneumonia notha, in asthmas, and, if the dose be moderate, in those cases of hectics where the expectoration is diminished from a want of irritability.

As a tonic it is useful in suppressed or asthenic gout; and according to Sydenham in the colic of Poitou: a tincture of it in spirit of wine is warmly recommended by Hoffmann.

It has been recommended as an antispasmodic; but has no claim to extraordinary powers in this respect. It is sometimes adulterated with turpentine, a fraud not highly injurious, as the latter is an useful medicine for the same complaints.

See Tournefort, and Lewis's Materia Medica; Neumann's Chemical Works.

PERVE'RSIO UTERI, (from *perverto, to turn over*). See PROCIDENTIA UTERI.

PERVIGI'LIUM, (from *pervigilo*); *Agrypnia*; a WANT OF SLEEP; a symptom very common in fevers, and always a bad presage. Sleeping with the eyelids half closed is equally dangerous, as it shows considerable insensibility. When the watchfulness is intense, it shows that a considerable irritation exists in the brain; often owing to increased circulation through its vessels, but sometimes purely nervous from excess of excitement.

PERVI'NCA MA'JOR, (from *pervincio, to tie together*; because its roots were used as cords.) See VINCA PERVINCA.

PES. The FOOT is divided into the tarsus, metatarsus, and toes. The tarsus consists of seven bones, viz. the astragalus, whose upper head is received into the cavity of the tibia; the calcaneum, or bone of the heel; the naviculare, or naviforme; the cuboides, the external of the anterior bones; the cuneiforme externum; the cuneiforme medium; and the cuneiforme internum. These bones being convex above, and concave below, make the tread more secure, and from their number the shock is broke in jumping. A caries in those parts is dangerous, on account of their spongy substance, size, and number. The sole of the foot is called *peza, thenar, pedion*, or *pelma*, a term applicable also to a sock.

Children's feet are sometimes distorted at their birth, or turned into a bad position. This often arises from a faulty position of the child in utero, and consists only in distortion, which may be easily remedied by bringing the diseased foot as near as possible to a natural position; then, with a bandage dipped in flour and the white of an egg, confining it by rolling from near the knee to the toe. When the egg has coagulated it will preserve the position. The bandage should be changed every fortnight.

Other methods of curing this imperfection have been, to bring the foot into a natural position, and confine it by leg irons of different constructions; confining the foot in a natural position in boxes of tin or copper; binding them in strong leather boots; or by a more complicated apparatus, after confining them in metal shoes, to turn out the toes by a wheel, which is fixed by a ratchet. Either method may succeed where the foot can be easily reduced to its proper situation, but if the bones are defective or the distortion is considerable, each is useless.

A deficiency of some bone often occasions the disease, and in that case these methods will not remove the complaint; but they will assist in reducing the position of the foot, and nature will accommodate the other parts, so that no inconvenience will remain but a slight limp, unless the deficiency be considerable. This, however, rarely happens.

The inconveniences of all these plans are, that if sufficient room for loco-motion is not given, the joint becomes stiff: if there be, the support is not sufficient. Mr. Sheldrake has ingeniously contrived to lessen these inconveniences by substituting a spring for the acting power; which is so contrived, that when the limb is moved the spring is excited to stronger action. This undoubtedly is a very ingenious idea, and the plan has often succeeded. It should, however, be attempted early, for after the child has began to walk, the cure is more difficult.

PES ANSERI'NUS. See CHENOPODIUM.

PES ASINI'NUS. See ALLIARIA.

PES CA'PRÆ LUSITA'NICÆ. See BINTAMBURU ZEYLAN.

PES CA'TI. See GNAPHALIUM.

PES COLUBI'NUS. See GERANIUM COLUBINUM.

PES LEO'NIS. See ALCHEMILLA.

PES LEPORI'NUS. See LAGOPUS.

PES VI'TULI. See ANUM.

PESSA'RIUM, (from πεσσω, *to soften*). A PESSARY; *balanos*, and *balanocastanum*, from its original shape resembling an acorn. Among other external remedies used by Hippocrates were pessaries, introduced into the vagina; and they were much used amongst the ancients, formed of different ingredients, according as the diseases which required them. P. Ægineta, vii. 24. At present their use is chiefly confined to the support of the uterus, when it falls into the vagina. They are useful to women also who labour under an incontinence of urine from that cause. Sponges of such a size as, when expanded, fill up the cavity of the vagina, are very good pessaries; and they may be dipped in any liquor that will assist the intention of using them. They support the uterus; and by a string the woman can remove and again apply them herself.

Commodious pessaries are described in Heister's Surgery, in the article Procidentia Uteri. Dr. Simpson described one which he invented in the Edinburgh Medical Essays, vol. iii. p. 313.

Some authors suspect that pessaries, by the pain and irritation they occasion, may produce leucorrhœa. It is evident that pessaries only prevent the descent of the womb, by obstructing the passage; and while a part is continually distended, it never can be strengthened by the power of art or nature. If the pessary is introduced too small, it will soon be forced away by the first fit of coughing or straining, and if too large may bring on the fluor albus. It generally is painful, and often injurious; so that except where the irritation it produces is inconsiderable, and the woman obliged to exert her strength, it should be avoided.

Pessaries sometimes produce violent inflammations; and instances have occurred of their passing into the rectum by the inflammation and suppuration excited. In some persons, however, they are worn without irritation; and the simplest, which are rings of cork or ivory, are the best.

PESSOLATÆ. See MORPIONES.

PESTILENTIA'LIS, (from *pestilentia, pestilence*). A high degree of malignity in a fever, and hence generally applied to the plague.

PE'STIS, (from the Hebrew term *pasat, to despoil*). The PLAGUE. Dr. Cullen places this disease among the exanthemata, defining it a typhus, very highly contagious, attended with extreme debility, adding that contentions have arisen among physicians concerning the character of the plague, which are easily cleared, so that the characteristic signs which occur in every case of the plague may be assigned with perspicuity: it, therefore, will be sufficient to give such as happen in the greater number. It is chiefly varied by its degrees of violence; hence the *pestis benigna, vulgaris, Ægyptiaca*, &c.

The plague is the most violent, rapid, and suddenly fatal degree of putrid or asthenic fever. In the beginning it is sometimes attended with inflammatory symptoms, particularly in the higher latitudes, but it speedily becomes very highly putrid. Whatever be the nature of its miasmata, the effects are immediately to diminish, and, according to the degree of its power, to extinguish, the vital power, dissolving the texture of the blood, from whence arise the purple spots.

The plague approaches with a chilliness and shivering, often with coldness only, which continues for a long time; soon after, a violent vomiting, a painful oppression of the breast, and a burning heat, particularly in the internal parts, come on, which continue till death changes the scene, or till the eruption of a bubo or a parotis appears to relieve. Sometimes the disease is mortal before the signs of fever approach; the broad purple spots, which denote the highest degree of malignity, coming out even while the person is engaged in business: these spots recede and return before death's approach. Sometimes swellings appear, without having been preceded by a fever, or any violent symptom. The breath and sweat are very offensive. The pathognomonic symptoms are the buboes and carbuncles, which appear in various parts of the body. If these are absent, the disease is generally styled a putrid or a malignant fever.

The more particular symptoms are, very early and considerable prostration of strength, with every mark of debility in the vital and animal actions, frequent hæmorrhages, or a colliquative sweat, muddiness in the eyes, coma, and loss of speech. On dissection, the heart and liver are found to be greatly enlarged. The whole train of symptoms marks excessive debility, but the disease is seldom highly putrid: in many cases it is in no respect so. Since the inflammations and abscesses of the glands, usually the parotid, the axillary or the inguinal appear at no determined period of the fever, sometimes even without a regular febrile attack, and are occasionally wanting, there is no foundation for arranging plague among the exanthemata, and it should be reduced to the asthenic remittents. We say remittents, because in the beginning remissions are sometimes observed, and because the most dangerous asthenic fevers are usually of this kind.

The disease is not, as supposed, highly infectious. It is described as propagated like the epidemic catarrh, by miasmata conveyed through the air, and re-appearing in places to which this scourge is familiar at regular seasons, but by no means at the periods of extreme heat: on the contrary, in the hottest seasons it often vanishes. When not depending on miasmata it is conveyed in what pathologists style *fomites*, goods generally of woollen or cotton, which contain the contagious matter from an infected person, and becomes more virulent by confinement. The infection is not readily conveyed

by the atmosphere, and contact, or confinement with the patient in a close room, is necessary for its activity. Our campaigns in Egypt have rendered us more familiar with the disease, and divested it of a great part of its terror. Many fevers are more general; many more fatal.

The plague used to visit England every thirty or forty years; but one hundred and thirty have now elapsed without its occurrence, and during this period our connection with the east has been more considerable. This will not be readily attributed to the practice of quarantines, which appear to be carelessly executed, and indeed the directions are highly injudicious. The period is too long for the disease to lie latent in the crew; and too short for the ventilation of the goods. Our escape may therefore be owing to different habits, to a diet more antiseptic, to more free air, &c.; but these would probably prevent only its spreading. If imported, some victim would fall the sacrifice, but there is little reason for thinking that it would ever be general, or very generally fatal.

If we look to the later experience in Egypt, we shall find these ideas strongly confirmed. Assalini, attached to the French army, calls it only the epidemic fever; yet if the plague is to be distinguished by any concourse of symptoms, it was undoubtedly the same disease.

If this author's observations, and indeed those of the French and English surgeons who attended the armies in Egypt, be true, the nature and source of the disease will appear to be very different from the representations of former practitioners. All these concur in the opinion that it is not highly infectious; many that it is slightty, if at all, so; and, instead of deriving it from peculiar miasmata, of considering the eastern countries as its great source, they attribute its appearance to common marsh miasmata, and its propagation to superstition, filth, and inattention. Assalini traces its progress in the French armies with great care; and if his facts are true, of which there is little doubt, these positions follow as rigorous conclusions. We have said that it is not *highly* infectious, of which a strong proof is, that those connected with the sick are seldom infected unless confined in the rooms. Casual intercourse is certainly by no means dangerous, as is shown by the medical attendants having very seldom suffered. When they appear to be infected, it is by no means certain that they may not suffer from its original cause, miasmata, since the strictest confinement does not insure perfect security. In one point of view it is therefore epidemic, in another endemic; for the miasmata, which in Germany and England produce tertians, in Hungary petechial fevers, in Italy remittents, in Syria and Egypt seems to occasion the plague. Many of the absurdities detailed by Thucydides, Lucretius, and Boccacio, appear to have no foundation; and to all may be applied what Galen said of the first, Thucydides, *quæ ægrotis contigerunt tanquam idiota idiotis scripsit; Hippocrates vero tanquam artifex artificibus.* Negroes, who resist the yellow fever of America and the West Indies, an epidemic apparently more violent and fatal than the plague, yield easily to the latter. It has been disputed whether this disease attacks the same person twice; and it is in general supposed that it may, though a second seizure rarely occurs in the same epidemic. M. Sotira, one of the attendants on the French army, seems to think that when the bubo freely suppurates, the patient is afterwards invulnerable from this poison.

In Europe the disease is only spread by infection: it cannot be styled an epidemic, for the separation of the healthy invariably preserves them. During the plague at Rome, in 1656 and 1657, all the monasteries escaped. The prisons were equally free, notwithstanding their closeness and filth. From the certificates annexed to the treatises on the plague of Marseilles ,a similar security was obtained, by separating the healthy from the diseased. Even in its native country seclusion is of service, since it inspires confidence, and the night air is avoided.

The plague, we have said, consists in extreme debility in every function. "I drank neither wine nor spirits," said General Menou, "yet I am as giddy as a drunken man: the taste in my mouth is insupportably offensive, and I am so weak that I can no longer walk: my legs seem as if they were made of cotton." The eyes are red and muddy, the head heavy, and the sensibility often extinguished. The patient feels an anxious wish to sleep. If you even tell him what his disease is, when in a violent degree, he will rather sleep, though informed that it will be his last. The anxiety soon increases to palpitation, and that to syncope; the pulse is peculiarly irregular, the vomitings of bile often incessant; petechiæ quickly extend to vibices; the diarrhœa is colliquative; the speech faltering; the motions unsteady, with a wandering delirium and convulsions. It is impossible to accumulate symptoms which would together show a greater deficiency of the vis vitæ, and its consequence the accumulation of blood in the heart, the lungs, the biliary system, and the brain. The marks of putrescency are less striking, for debility is more often the cause of extravasations under the skin than a putrid dissolution of the blood. The elegant lines of Lucan formerly quoted, in which poetical hyberbole has only perhaps a little overcharged the picture, show that such effusions may take place suddenly, before putrefaction could be communicated to the whole mass (see HÆMORRHAGIA). In the plague, persons often walk out, with the spots, as they are called, on the skin, not feeling any disease but debility.

The cure of the plague was formerly supposed to be a desperate attempt. We now know that though a dangerous disease, it is more often conquered than victorious; nor is there the slightest doubt, but, if it should ever be again introduced into this kingdom, that it would soon excite little alarm. We have seen many epidemics which have been, for a time, more fatal than the plague would probably be, in the present state of society, with judicious political regulations.

The great source of difficulty to the practical physicians has been the good effects of *bleeding*. Sydenham employed it to a considerable extent, preceded only, as he tells us, by Botallus, who bled largely in almost every complaint. Yet Oribasius, long before, had employed this remedy on his own case; for, when the plague was epidemic in Asia, he was seized with the disease; and on the second day, *during the remission*, scarified his legs, taking off two pounds of blood. Modern authors, and particularly Dr. Russell, have been more cautious, limiting the evacuation to a single bleeding, and then only when the disease attacks with symptoms of inflammation. Chenot confines it to those

cases where the turgescence of the vessels seems to impede the diapnoe; and the Russian physicians, De Mertens and Samoilowitz, scarcely mention it. When therefore, in a strong robust habit, the face is flushed, the skin hot and dry, the pains violent, particularly in the side, bleeding by general consent may be employed. But must we wholly resign the observations of Sydenham? We should do it unwillingly; and for this purpose, under the article FEBRIS, q. v., we have mentioned the facts, and stated the principle on which we would reconcile the supposed utility of bleeding, with symptoms of considerable debility. (Vol. I. p. 652.)

When symptoms of indigestion appear, and even when the disease has attacked, after a full meal, it has been usual to give an *emetic*. Probably in every case this remedy is proper, since, from the accumulations in the liver, bilious discharges are common and useful. These are usually directed so as to keep up a slight diarrhœa; but excessive evacuations in either way are injurious. Samoilowitz, and the Russian practitioners, are very fond of the early use of emetics. Slight purgatives of the saline or acid kind are also useful through the whole course of the disease.

Diaphoresis is the evacuation which relieves most certainly and effectually; and this is usually kept up by warm liquids, vegetable acids, often by opium. In cases of greater languor and debility, the warmer opiates, as the confectio opiata, are employed, assisted often by camphor and ammonia. Yet on the whole these appear, on comparing the testimony of different authors, to be less generally effectual, though sometimes essentially necessary, from the debility which prevails. In the early stages, to drink freely of the camphorated julep, with a large proportion of the vegetable acids, seems particularly useful.

Blisters have been freely employed from the observation of Galen, that those cases have best succeeded in which there were eruptions or ulcers on the skin; but later authors have found them less effectual, and generally confine the application to cases where topical pains are violent, or partial congestions considerable.

External applications have been various. The *oily frictions* have numerous advocates; but Sortira suggests, that advantage was taken of Mr. Baldwin's benevolence, and the cures by the oil exaggerated and multiplied by those who wished to have oil gratis. Mr. Baldwin is not, however, the only evidence, nor are his representations unusually strong. Father Louis of Padua, director of the hospitals at Smyrna, is still more pointed in his recommendations of this remedy; and Assalini thinks it may be useful. If the other French physicians speak slightly of it, there is reason to suppose that they have not employed it properly, or that its effects in different epidemics, perhaps in different constitutions, may vary.

Frictions with ice seem to have been employed, exclusively, in Russia, and Samoilowitz gives several cases in which it succeeded. His patients were, however, chiefly among the strong and robust. If we estimate the utility of this remedy by what we have been told of the effects of cold applications in typhus, we should consider it as dangerous in a disease of so great debility. He used a large piece of ice with a polished surface, formed by friction against another piece, and rubbed the arms, the legs, and thighs chiefly, the belly slightly, and the breast scarcely at all. Rubbing the spine with alcohol, impregnated with aromatics, is recommended by Sortira, who remarks, that animals wounded in the vertebræ are recovered by spirituous and aromatic injections on the membranes of the spinal marrow. From these effects, he supposes that aromatics were employed in the temples of the gods, and he derives the appellation from the Ionic verb ἀρασμαι, I pray.

In every stage of this complaint, wine given in proportion to the debility is useful; and in the highly asthenic cases, bark, with the mineral acids, has been freely employed. These, however, are spoken of so vaguely, that we suspect they have been seldom necessary. They must often, however, be the only resources.

The conduct of the buboes has been the subject of much controversy. It is necessary, however, to remark, that these are not the only external affections in this disease. Carbuncles (see ANTHRAX), and vibices (see PETECHIÆ), often covering a deep putrid ulcer, are occasionally observed at the conclusion, sometimes in the commencement, of the plague. These were usually called *tokens*. Whatever may therefore be thought of bubos, neither the carbuncles nor the vibices can be supposed critical; and on the whole it is highly probable, that the last are rather accidental symptoms than critical depositions. It is in general advised to bring the bubo to a suppuration. This is, however, always difficult; and to open it, before this process is at least begun, appears to be an useless torture. Poultices, cataplasms, and even the actual cautery, often fail; and, if the bubo does not suppurate, the danger is supposed to be more considerable. This may, however, be the case, though the tumour is not critical; for the want of suppuration is often a symptom only of considerable debility. Friction, with warm tepid oils, was found the most easy and effectual method: perhaps mercurial ointment might have been more successful.

To guard against the plague is an object of no little importance; and this subject divides itself into the means of preventing its importation from the countries where it is occasionally epidemic, and those of preserving the health of individuals during its ravages. The late observations have greatly assisted us in each respect.

The regulations of quarantines are vexatious and ineffectual; nor can there be a doubt, but that if the fomes of the plague was contained in any vessel from the Levant, the disease would be propagated in this country. But, as we have said respecting the yellow fever of America, unless an eastern constitution and eastern manners were at the same time imported, the danger would be inconsiderable. The period of forty days, originally perhaps determined by religious observances, is not necessary to ascertain the state of health of individuals, when we reflect that they have been already more than a month on their voyage, and in varied climates. A medical man would not run the slightest risk in examining individuals, and these in fresh clothes might be immediately liberated. The goods would require a much longer time, unless ventilated; but if in a raw unmanufactured state, a very slight ventilation would be sufficient; nor might any one fear to engage in the task if he took advantage of a fresh breeze, and

stood to the windward. The great danger would arise from manufactured apparel, unless it were of leather. These should be ventilated with the utmost care and caution. Yet the clothes which the author wore during the voyage would be probably incapable of conveying the disease, if he himself were in health. Perhaps it would be less expensive, and would be infinitely less vexatious, if all the wearing apparel of the crew were destroyed in case of the slightest suspicion of infection.

If the plague were to reach a town, it would be easy, we think, to avoid its spreading, if the family were not permitted to mix with others till their health was ascertained; and if the nurses or necessary attendants on the sick were cautiously to avoid communication with others, except at some distance. This we add for the sake rather of calming the mind than from necessity, since the disease is certainly not infectious in any considerable degree. Every thing from the house should be cleaned and aired; the linen immersed in water, and kept there for some time, and exposed to the air before the operation of washing begins. It has been the common error of physicians to disbelieve the existence of a plague till its mortality has forcibly evinced the truth. If then an epidemic fever has continued, and it is uncertain how far its seminium has been dispersed, all crowds should be avoided. Those most certainly free should be suffered to leave the town, after perhaps a slight quarantine in the neighbourhood; and all suspected goods should be destroyed. To assert that the disease is not infectious, is to lull persons into an incautious security; to say that it is highly so, renders the fever most highly dangerous, by depressing the spirits. In this country it is propagated by infection only, and with moderate caution may be avoided, notwithstanding an occasional communication with those who are diseased.

The necessary rules for this purpose are not numerous. If the mind is busily engaged, and the person has little time to reflect on his danger, it is greatly lessened. The good bishop of Marseilles escaped, by his hourly engagements in the works of benevolence. If not engaged, cheerfulness, confidence, and serenity, are the best guardians; and it is a pious fraud to tell those who must remain, that with moderate caution there is not the slightest danger, and to make light of any accidental ailment, or even the first attack of the disease. To tell a person that he had not the plague was the most certain mode of curing him, when he was really infected.

Another rule of no little importance is to be often in the open air; to change the linen and the clothes frequently; and not again to put on the woollen garments till they had been freely ventilated. The diet should be generous, and the wine in a larger quantity than usual. The bowels should be kept free; and perspiration, at night, be induced by warm liquids, with vegetable acids, and some portion of spirit. Every depressing passion should be avoided, as well as every cause of debility. Diemerbroeck remarked, that newly married persons were peculiarly subject to the infection of this disease.

Tonics are sometimes necessary, and the occasional use of the cold bath, of bark, and the mineral acids, have been found useful. Camphor, an excellent antiseptic, palls the appetite; and its effects in a bag round the neck are at least equivocal, probably imaginary. Above all, free open air is the best method of rendering the infectious matter effete; and a cheerful serenity, with the most frequent changes of clothes, every mode of supporting the strength, and a free discharge from the different excrementitious glands, the most certain means of preventing its effects.

The earlier the tumours appear on the surface of the body the better; for thus all other symptoms are removed. See Bubo and Carbunculus.

When the plague is fatal, some die of a fainting the first or second day; others, in whom the poison is not thrown out upon the external surface, or, if thrown off, returning back, of a mortification of the nervous coats of the more important organs, as the œsophagus, pleura, stomach, intestines, &c. whence the bodies swell, and have an intolerable stench. Sometimes, when the tumours are too numerous, the patient dies of a symptomatic fever, from the inflammation, pain, and heat.

See Samoilowitz sur la Peste en Russie, 1771; Mead on the Plague; Cullen's First Lines, edit. 4, page 200, vol. ii.; Sydenham's Works; Dr. Russel on the Plague; Chenot de Peste Transylvanica; Memoires Medicales d' l' Armee de le 'Orient, par Bruant; Memoirs sur l' Egypt, vol. iv.; Observations on the Plague, &c. by Assalini; De Mertens' Account of the Plague, which raged at Moscow in 1771; De Foe's Account of the Plague in London, an imaginary narrative, which has been quoted as the result of real observation. The facts, however, preserved respecting that epidemic are often new and important.

PETALA, (from *ϖεταω, to extend or unfold*). Petals. The flower leaves distinguished from folia, the leaves of the plant. Flowers with one leaf are called *monopetalous flowers*; with two, *bipetalous, &c.*; with more than six, *polypetalous*.

PETALODES, (from *petalum*, and *ειδος, likeness*). A scaly or leafy sediment of the urine, sometimes attending an ulcer in the bladder. In botany an epithet for plants furnished with petals.

PETASITES, (from *ϖετασος, a hat*, because the leaves are large, have a hollow in the middle, and extend horizontally round it.) Tussilago major, galerita, pestilent wort, butter-bur; *tussilago petasites* Lin. Sp. Pl. 1215; a perennial plant, found by the sides of ditches and in meadows, producing early in the spring a thick, naked, roundish stalk, with a spike of small naked purplish flosculous flowers on the top: the flowers and stalks soon wither, and are succeeded about May with very large roundish and heart-shaped leaves, standing on long pedicles, somewhat hollowed in the middle, so as to resemble a bonnet; the root is long, thick, of a dark brown or black colour on the outside, and white within.

The roots are said to be aperient and alexipharmic; have a strong smell and a bitterish acrid taste, of the aromatic kind, very durable and diffusive, scarcely to be concealed by a large admixture of other substances. Their virtue is in the resin, distinguished by the eye in the dried root, and readily extracted by spirit of wine. See Lewis's Materia Medica.

PETECHIA, (from an Italian word, signifying small-pox of a purple colour). It originally signified elevations of the skin; but custom hath now confined it to spots diffused on the skin without raising it. (See

STIGMA.) Their appellations are various, viz. *punctulæ, lenticulæ, pulicaris morbus, purpurata* by the French physicians, and *taberdillo* by the Spanish. The term lenticularis, however, usually confined to pimples rising above the skin, is peculiarly improper. Commonly they are reddish, purple, or blackish spots in the skin, like small points, but soon spread and gradually grow broader: when extensive, they are often styled *vibices*, and have different appellations according to their forms.

These spots are not uncommon in fevers; see Pringle's Observations, p. 287; Monro on Military Hospitals; and Cleghorn on the Diseases of Minorca, p. 147. In the intervals of the pustules of small-pox, and of the efflorescence of the measles, they are frequently observable, sometimes without any danger, though their appearance is always a source of alarm.

Their nature is sufficiently obvious. They are little ecchymoses, often arising from a putrid dissolution of the blood, sometimes from debility, independent of putrefaction. In general, on their appearance, bark is given, and it usually renders their colour more florid; but when the bark might be injurious, as in asthma, or in measles, we have found the vitriolic acid equally useful.

Petechiæ sometimes occur alone, without any evident cause, of which there is an instance in Dr. Duncan's Cases, page 90, and we have recorded another under the article HÆMORRHAGIA, as it was peculiarly violent; but, in slighter degrees, if no peculiar disease attends, we have usually disregarded it, and in numerous cases have seen it spontaneously vanish. This is the *morbus petechialis sine febre* of the German physicians, which they represent in very formidable colours. Richter, the great oracle of our predecessors, supposed petechiæ to be from bile, because, when attended with fever, emetics cured it, with the addition of vitriolic acid. Either or neither would have been equally successful.

PETECHIA'LIS FEBRIS, (from the *petechiæ*, which sometimes attend). The PETECHIAL FEVER; which, though often treated as a distinct species, is only the low or the putrid fever, attended with purple spots, as a symptom. See PUTRIDA FEBRIS; Hoffman, Pringle, and Huxham, on Petechial Fevers.

PETI'GO, (quòd semper vicina serpendo petat). Synonymous with impetigo. See LICHEN.

PE'TRÆ O'LEUM. See PETROLEUM VULGARE.

PETRIFA'CTIO, (from *petra, a stone*, and *facio, to make*). A disease of the eyes. See ANCUBITUS.

Petrefactions, in the nomenclature of the natural historian, are animal or vegetable productions, incrusted with stony matter, or become actual stone. Petrified wood is an exact imitation of real wood, so that from the concentric laminæ the species of tree can often be ascertained. In these changes the stony matter is gradually substituted to the vegetable, till the latter is decomposed; and as the substitution is gradual, the stone is moulded on the original cavities, and the organisation is exactly copied. Though each earth may form petrifactions, they most commonly consist of the siliceous, as its molecules are much smaller, and may be suspended in water. Indeed they are at times deposited on the addition of water, when contained in fluor acid air. The mineral kingdom has also its peculiar changes, to which the appellation of petrifactions can scarcely be applied, so that in the latest works they have been styled *pseudomorphoses*. As none of these have been ever employed as medicines, we must not enlarge on the subject, but refer to Cronstedt's Mineralogy, by Magellan, Appendix; Haüy, i. 142. For the theory to the younger Monges, Journal de Physique, 1781, page 255; and Daubenton's Leçons de l'Ecole Normale, iii. 393.

PETRO'LEI O'LEUM. The purer substance of petroleum: the British oil extracted from a species of stone coal is of this kind; and every species is recommended externally in chronic rheumatisms and paralytic complaints as powerful stimulants. See PETRO'LEUM BARBADE'NSE.

PETRO'LEI BARBADE'NSE AMMONIA'TUM LINIMENTUM. See AMMONIA.

PETRO'LEUM, (from πέτρα, *a rock*, and *oleum, oil*, because it sometimes distils from rocks); *callicola; terræ oleum*. Petroleum in consistence is next to naphtha, but grosser and thicker, of a yellowish, reddish, or brown colour, but so light as to swim on spirit of wine. It is inflammable, less fluid and transparent than water, of a pale yellow, with a shade of red or green, sometimes of a reddish brown or black, specific gravity 0.8783, yields when burnt a soot, and a small quantity of an oily residuum. (Hatchett, in Nicholson's Journal, ii. 201, &c.) Its taste is bitter, its smell strong and penetrating, qualities greatly diminished when it assumes its solid form and black colour.

Petroleum, like oil, is composed of hydrogen, carbone, and azote, in a peculiar state, and modified by oxygen. These principles, and the marine bodies often found in bituminous strata, lead to the suspicion that the origin of bitumens is organised bodies, chiefly marine ones, decomposed. The rare occurrence, however, of these marine bodies in bitumens, and the numerous marine strata, which contain not an atom of bitumen, render the conclusion doubtful, though supported strongly by the azote, an animal ingredient.

The liquid bitumens are the pure *petroleum*, and the *white*, or the *naphtha*. The solid are the *mineral pitch* or *maltha*, the *asphaltum*, the *mineral choutchouc, jet, canal coal, common* and *spurious coal*, and *amber*. The last only of the solid bitumens is used in medicines. See SUCCINUM.

PETRO'LEUM A'LBUM. WHITE PETROLEUM. It is nearly colourless, almost as fluid and limpid as water, of a strong penetrating smell, not disagreeable, somewhat resembling that of the rectified oil of amber. It is found only in the duchy of Modena.

PETRO'LEUM BARBADE'NSE. *Bitumen Barbadense, pissæleum Indicum*, BARBADOES TAR, is a species of petroleum of a reddish black colour, a thick consistence, approaching to that of treacle or common tar, and found in the American islands, particularly in Barbadoes.

These different kinds issue from the clefts of rocks, chiefly in Persia, near the shores of the Caspian, or swim on the surface of lakes in volcanic countries. They are often obtained by distillation from bituminous substances, but we rarely meet with them genuine. Fine petroleum catches fire at the approach only of a flame, and burns without leaving any residuum: concentrated mineral acids, mixed with petroleum, effervesce

with violence, and often flame; and their addition increases its consistence and odour. Petroleum does not readily mix with alcohol, but is easily united with the essential oil of vegetables.

The finer petrolea are more agreeable than oil of amber, and more mild than oil of turpentine: they have been used in nervous complaints as antispasmodics or diuretics, but chiefly as external applications in rheumatism, palsy, and chilblains, &c. For these purposes the British oil, and similar productions of our own, are equally efficacious. The Americans use the Barbadoes tar internally as a sudorific; externally as a discutient and stimulant. On distillation the Barbadoes tar yields an empyreumatic oil, which, when placed between the eye and the light, appears of an orange colour, but in other positions of a blue; though by long keeping it is yellow in all situations.

See Neumann's Chemical Works, and Lewis's Materia Medica.

PETRO'LEUM FLA'VUM, *naphtha Italica*, ITALIAN ROCK OIL, or YELLOW OIL of PETRE, is of a clear yellow colour, less fluid, less penetrating and agreeable than the white, more nearly approaching oil of amber. It is found in the duchy of Modena.

PETRO'LEUM SULPHURA'TUM. See SULPHURIS BALSAMUM BARBADENSE.

PETRO'LEUM VULGA'RE, *petræ oleum*, *petroleum rubrum*, *petroleum*, and *oleum Gabianum*, COMMON ROCK OIL, RED PETROLEUM, is of a blackish red colour, of a thicker consistence, and a less penetrating and more disagreeable smell than either the white or the yellow kinds. It is found in Italy, and about the village Gabian in Languedoc.

PE'TRO-PHARYNGÆ'I. These muscles rise from the lower part of the extremity of the apophysis petrosa, and run backwards, to be inserted into the linea alba of the pharynx.

PETRO'SA APOPHY'SIS, (from πετρα, *a rock*.) The rock or harder portion of the temple bones; in children easily separable from the mastoid and squamous portions.

PE'TRO SALPI'NGO-STAPHYLI'NI. *peristaphylini interni*; *salpingo-staphylini interni*. Each of these muscles is fixed by one extremity, partly to the inner side of the bony portion of the Eustachian tube, or to that next the apophysis petrosa, partly along the cartilaginous portion of the same tube. It passes a little way under the soft membranous part, and then turns towards the septum palati. See Winslow's Anatomy.

PETROSELI'NUM, (from πετρα, and σελινον, *parsley*). See APIUM HORTENSE.

PETROSELI'NUM MACEDO'NICUM. See APIUM MACEDONICUM.

PETROSELI'NUM MONTA'NUM. See OREOSELINUM.

PETRO'SUM OS, (from *petra*, *a rock*). See TEMPORUM OSSA.

PE'TUM. (Indian.) See NICOTIANA.

PEU'CE, (from πευκη). See PINUS.

PEUCEDA'NUM, (from the resemblance of its leaves to those of *peuce*, *a pine tree*). *Fœniculum porcinum*, *cauda porcina*, *pinastellum*, *agrion*, *agriophyllon*, *marathrophyllum*, SULPHUR-WORT, HOG'S-FENNEL; *peucedanum officinale* Lin. Sp. Pl. 353. It is perennial, grows wild by the sea shores, and in moist shady places, flowering in July. The roots have a strong fetid smell, with an unctuous acrid bitter taste; and when fresh, in spring or autumn, yield a considerable quantity of yellow juice on incision, which soon dries into a solid gummy resin, retaining the taste and smell of the root. It is chiefly recommended in hysteria, and is supposed to be also an aperient. See Lewis's Materia Medica.

PEUCEDA'NUM SILA'US. See SAXIFRAGA ANGLICA.

PEW'TER, a compound metal, composed of tin, lead, and copper. It is supposed to be dangerous from the mixture of lead, but without foundation. The lead is too minutely covered with the other metals to be affected by beer, cyder, acid fruits, or animal fats. Vinegar will dissolve no portion of it. The horrible phantoms raised by the apprehensions respecting lead begin to disappear.

PEY'RI GLA'NDULÆ. PEYER'S GLANDS. See BRUNNEIRI GLANDULÆ.

PE'ZA, (from πες, *a foot*). See PES and ASTRAGALUS. It sometimes means every part of the leg under the tibia.

PEZI'ZA, (from πεζα, *the sole of the foot*, because it sometimes rests without a pedicle). A species of fungus, whose edges are so divided as to form a remarkable cavity. It is of an uniform substance, neither distinguished by lamellæ nor pores.

PEZI'ZA AURI'CULA. See AURICULA JUDÆ.

PHA'CE, or PHA'COS, (from φακη, *a lentil*). See LENS.

PHACOI'DES, (from φακη, and ειδος, *likeness*); resembling a lentil. See OCULUS.

PHACO'SIS, (from φακη, *a lentil*). A black spot in the eye resembling a lentil.

PHAGEDÆ'NA, (from φαγω, *to eat*), is sometimes taken in an extensive sense, for every ulcer which eats away the sound parts contiguous to it, and is called *depascens ulcus*; sometimes in a more limited one, for a deep tumid ulcer which destroys the flesh underneath, as well as the neighbouring parts. It is occasionally described as only destroying the skin; at other times, as a particular species of ulcer, called *herpes phagedæna*, or *exedens*. There is a considerable confusion in authors respecting the distinction of phagedenic ulcers, and Celsus includes under this term even a spreading gangrene. Wiseman distinguishes phagedenic ulcers from herpes, defining them deep eating ulcers with swelled lips, beginning in the flesh with matter; while herpes begins in the skin, and is comparatively dry. Dr. Adams, in his morbid poisons, divides them into two species, viz. successive ulcerations and sloughings; secondly, ulceration kept up by the irritation of newly-formed pus. The treatment of Dr. Adams' species we must consider under the article of ulcers; the second species of Celsus has been already noticed under MORTIFICATIO, q. v. It is the appellation also of an affection of the stomach, requiring an immoderate quantity of food. See BOULIMUS.

PHA'LACRA, (from φαλακρος, *bald*). *Calvata.* Blunt and smooth surgical instruments, as a probe, or any other, with a button at the end. Hippocrates.

PHALACRO'TIS, (from the same). See ALOPECIA.

PHALA'NGIUM ALLOBRO'GICUM, (from *φαλαγξ, a joint in the finger*). See LILIASTRUM ALPINUM MINUS.

PHALANGO'SIS, (from *φαλαγξ, a row of soldiers*). A disease in which the eyelid turns inwards, so that the hairs stimulate the eye. (P. Ægineta, lib. vi. c. 8.) The eyelid is tumefied or relaxed, proceeding either from a paralytic disorder of the musculus elevator palpebræ, or from the relaxation of the skin above. An œdematous tumour is sometimes formed in the eyelids, but this should be distinguished from the disease which proceeds from relaxation, and requires an excision of the skin. The disorder sometimes returns, notwithstanding the operation. See Hippocrat. lib. de Victus Ratione; Celsus, lib. vii. c. 7. V. PTOSIS.

PHALANGO'SIS TRI'CHIA. See TRICHIA.

PHA'LANX, (*φαλαγξ, an army of soldiers*). The bones of the fingers, called from their regular disposition. See DIGITUS.

PHA'LARIS, *Canariensis* Lin. Sp. Pl. 79, (from *φαλος, shining*). *Gramen spicatum.* CANARY-GRASS. It grows amongst corn, and is found in many places besides the Canary Islands. The seeds are diuretic. See Raii Historia.

PHANTA'SMA, (from *φανταζω, to make appear*). See PSEUDOBLEPSIS.

PHARMACEI'A, (from *φαρμακον, a medicine*). A discharge from the abdomen, from the exhibition of a cathartic.

PHARMACEUTICA, (from *φαρμακευω, to exhibit medicines*). PHARMACEUTICS constitute that branch of our art which teaches the method of rightly preparing and exhibiting medicines.

PHARMACEUTICÆ, φαρμακευτικη, MEDICINE, (from the same). The art of healing by medicines. See MEDICINA. *History*, and Kirkland's Inquiry, vol. i. p. 64, &c.

PHARMACI'A, (from *φαρμακον, a medicine*), is the art of preparing and compounding medicines, and may be traced to the earliest eras of medical records. When medicines were first given, some preparation was, of course, necessary; and we find in Hippocrates not only ointments, but infusions of different vegetable substances in oils, called from the basis, *myrtinum, rosatum*, &c. In fumigations he employed troches, *φθοισκοι*, which required preparation. It is probable that this union of pharmacy with the practice of medicine continued for many ages; for we first find it as a separate profession at Rome in the time of Theophrastus. (MEDICINA, p. 159.) To the Arabians we are, however, indebted for the more complicated processes of pharmacy; though, as we studiously pointed out, MEDICINA, p. 165, some parts of pharmaceutical practice were known to Actuarius, whom we have styled the last of the ancients. See MODERNI.

The Arabians first rendered pharmacy more complicated by increasing the number of distilled waters, preparing tinctures and syrups, and accumulating the ingredients of their formulæ. The first great division of pharmacy was, however, effected by the chemical sect, early in the sixteenth century. This introduced the distinction of preparations into *galenical* and *chemical*; the former containing the decompositions and preparations, in which the heat was inconsiderable, not greatly superior to that of boiling water; the latter, those produced by the greatest violence of fire; but neither this nor any other distinction is followed very closely in terming a preparation either galenical or chemical. The earliest code for preparing medicines, we have said, was published by the authority of the senate of Norimberg in 1542; but we have since seen an earlier account of lists published at Lindau, settling, by authority, the price of drugs. The progress of pharmacy, as ascertained by authorised codes, we have already traced with some care in the article DISPENSATORIUM.

Pharmacy must necessarily go hand in hand with chemistry; but it has only become a science since the introduction of the pneumatic chemistry, and we must regret that we have received no work which embraces its whole extent since that period. The new Dispensatory of Dr. A. Duncan is the most valuable and complete of this kind, but it is limited to the preparations in the established dispensatories of Great Britain and Ireland.

The objects of pharmacy are obvious from the definition; and we shall consider in their order the general rules by which medicinal substances are PRESERVED, PREPARED, and COMPOUNDED: the particular ones must be learnt under the proper heads.

To separate decayed from sound portions of vegetable substances, for to these our attention is now chiefly directed; to dry them with care; to prevent the dissipation of volatile parts, the access of insects or impurities, are obvious precautions. Vegetable substances should be collected in the countries where they are indigenous, and in soils and situations where they naturally flourish with the greatest luxuriance. Annual roots are in the greatest perfection just before their shoots spring forth, biennial ones in the spring of the second year. In the autumn of the first their virtue is not greatly inferior; but there is danger of gathering the effete exhausted root, hastening to decay, by mistaking the second for the first year. Perennial roots are best in the spring, just before the period when the sap begins to rise. Juicy roots, if their medicinal portion be not volatile, may be rapidly dried by a heat of from 90° to 120° of Fahrenheit; but if aromatic, in a current of cold dry air, not exposed to the sun. Thick roots should be sliced and hung on strings. Some roots should be kept moist; and these must be buried in damp sand.

Herbs and *leaves* in general acquire activity from their age, but mucilaginous ones become woody. No very great nicety is required in their collection but what this hint will supply, except in the cases of helleboraster and digitalis. The former has the leaves of the first and the second year at the same time, distinguished by their colour and their acrimony. It is necessary, therefore, to select one kind only, and the oldest are the most active. The digitalis is a biennial, and the leaves, previous to the flowering of the second year, more active than those of the first: they should, if possible, be distinguished. Aromatic leaves are to be collected after the flower buds are formed; annuals about the time of flowering; biennials before the sap mounts; and perennials before they flower. They should be dried rapidly in a current of free air, and, if succulent, by artificial heat.

Resinous *barks* are best collected in spring, gummy ones in autumn; and of the former the heaviest are the best. *Flowers*, as well as herbs, should be col-

lected in dry weather; and, in a few instances, it is unnecessary to separate them from the calyx, if small, as the whole plant has similar virtues. If any peculiar advantage is expected from small doses however laborious, the separation is proper. In general they should be dried with artificial heat, though not to such a degree as most slightly to destroy their colour.

Seeds and *fruits* should be gathered when ripe, but before they would fall spontaneously. Pulpy fruits are compressed, or deprived of their cores or kernels. In general their natural coverings should be preserved; but in the nicer sweet-meats they are taken off. In some medicinal substances, also, they are taken off, as in the colocynth, &c.

Every vegetable substance should be kept dry. Herbs and leaves, which, when friable, appear to have lost their odour, regain it by keeping in a close box. Oily seeds and fruits should be kept in a dry cool place, but not beyond the season of again collecting them. Those vegetable substances are best preserved, in every form, which have grown and been gathered in a dry season.

Animal substances in a moist state should be preserved with care, so as not to be more or less dry. Those which are solid, and minerals, require no peculiar attention.

Medicines are PREPARED, if solid, by *mechanical division*. The means are, pulverisation, trituration, levigation, granulation, and sifting; if fluid, by decantation, filtration, and despumation: if moist, by expression. Compound formulæ are prepared by mechanical mixture; by solution, either simply or with the assistance of a third body; and by heat.

Mechanical mixture is performed by agitation, by trituration, or beating in a mortar; but if the substances are fluid and incapable of chemically uniting, they soon again separate; an inconvenience lessened by employing an albuminous or a mucilaginous intermede. The union, however, though more lasting, is only temporary. Trituration is a more steady and continued agitation; but when employed to assist solution, the weight of the pestle contributes to a further mechanical division. The mechanical mixture, by beating or kneading, is more lasting, because the substances employed, at least one of them, is in a semi-fluid state, and the heavier body cannot subside.

Solution requires some time, assisted by agitation and a gentle heat. It is effected by chemical affinity, and sometimes a third body united to the menstruum is necessary before its attraction is sufficiently strong, as salt is added to the nitrous acid to render it the proper menstruum for gold. Heat is necessary not only in simple solutions, but often in so great a degree as to raise both the solvend and the menstruum in vapour when their union will only take place. Thus, water and the essential oils of vegetables unite in a state of vapour, when a very slight imperfect union would take place in a fluid form.

Pharmaceutical operations chiefly depend on a change of form, on combination or decomposition. THE FORM IS ALTERED by solution, fusion, a change into a state of gas, vaporisation, exciccation, condensation, congelation, and coagulation. In each, however, some decomposition takes place.

Solution is a common pharmaceutical operation; but under this title we include the fluid forms of every substance, whether vegetable or mineral. The most simple form is a solution of the common neutrals, whether alkaline or metallic salts, and the various combinations found in mineral springs. Infusions are solutions of the vegetable extractive matter, and decoctions are solutions by means of heat; the various vinegars, wines, elixirs, and tinctures, are similar preparations: but while infusions contain the vegetable substance, separated only from the woody fibres, in the decoctions, some decomposition apparently takes place, and a part of the extractive matter, or the oil, by the union of oxygen, becomes resin. Vinegars contain the vegetable matters with little change, but they are adapted chiefly to what are styled the alkalescent plants, the tetradynamiæ; while in the wines, elixirs, and tinctures, the vegetable is decomposed in proportion to the diminution of the quantity of water in the menstruum. The spirit extracts principally the resin, and the form of tincture is adapted to those medicines which are chiefly resinous. Even to the strongest spirit the resin, however, conveys some portion of gum; and, on the contrary, the cold watery infusions are not without some, though a very small, proportion of resin. Water is the appropriate menstruum of salts and mucilages; but some portion of each may be combined with a weak spirit, though not in a quantity to be effectual, unless in the metallic salts, where the dose is inconsiderable in bulk.

Fusion is scarcely a pharmaceutical operation. It may be termed a solution by means of caloric, and is chiefly employed for the purpose of *granulation*; a method of powdering metals by continued agitation while cooling. Modern practice only employs this process in preparing the filings of tin.

A change into a state of gas is employed to impregnate water with some ingredients in imitation of the mineral waters. Hepatised hydrogen, carbonic acid air, and other gazeous fluids, are employed in this way. (See AQUÆ MINERALES ARTIFICIALES.) The pneumatic chemistry, though it has thrown considerable light on numerous pharmaceutical processes, has, however, added little to our stock of resources.

Vaporisation is a very extensive operation. It is employed to separate substances which differ in volatility, and, as we have said, to facilitate chemical action. In *deflragating* metals, the acid of the nitre in part is volatilised, while its oxygen is combined with the metal, forming a calx. Thus the flowers of zinc, diaphoretic antimony, &c. were formerly prepared; and in *ustulation*, the roasting of metals, the sulphur and arsenic are dissipated. When, however, it is proper to retain the volatile portion, we apply a receiver, as in the various modes of *distilling* fluid and *subliming* solid substances. When the operation is more simple, consisting in exposure of the fluid to heat in a shallow vessel, it is styled *evaporation*. Saline solutions are to be *concentred* when evaporated in order to crystalisation; other moist bodies to be dephlegmated; but alcohol must be dephlegmated by other means, for its volatility requires distillation. It is sometimes, however, dephlegmated by chemical affinity, when, by adding pot-ash, the solution is very slightly soluble in the pure spirit.

Exciccation is often performed by vaporisation, as in making extracts from vegetable substances, when some decomposition always takes place. It is sometimes effected by placing the moistened body on blotting paper, or a chalk stone. The heat is sometimes con-

siderable, as in calcining alum and depriving salts of their water of crystalisation. When some salts, particularly common salt, are exciccated, they crackle: a sound called *decrepitation.*

Condensation is applied only to vesicular vapour, for the permanently elastic gases cannot by any pressure or change of temperature be reduced to a solid form. It is the second part of the process of DISTILLATION, q. v.; and when, by the position of the vessels, the condensed vapour repeatedly returns into the receiver, to be as often again raised in vapour, the operation is called *circulation.* When a fluid is repeatedly distilled in fresh vessels, the process is called *rectification;* and if the distilled fluid be repeatedly distilled from fresh materials, *cohobation.*

Congelation is chiefly used to concentrate vegetable acids, occasionally alcohol, and is performed by the natural cold in higher latitudes, and by evaporation, or freezing mixtures (see COLD), in these climates.

Congelation is effected by means of heat, sometimes by chemical affinity, by abstracting water, by acids, rennets, &c.

COMBINATION is one of the most important pharmaceutical operations, and chemical combination consists in an intimate union of the particles of two or more heterogeneous bodies. To unite chemically, the bodies must possess an affinity for each other greater than the attraction of aggregation, and their particles must approach within a given distance. It is not always necessary that they should be in a fluid state, but they must be mechanically divided into very small particles; and the operation is assisted by caloric, by agitation, sometimes, though not in every instance, by compression. Some air is generally separated in solutions, which compression impedes.

Gases generally mix with gases; and they seem, in very few instances, to combine, unless from the impulse of electricity or galvanism. They appear to be mutually diffused; each given portion of the gaseous compound containing the same proportions of each. They dissolve fluids or solids: thus the hepatic air is sulphur dissolved in hydrogen; or are absorbed by them, as the carbonic acid air by water or lime. Fluids dissolve solids, or are rendered solid by them, as a supersaturated solution of salts, by rapidly crystalising, becomes a solid mass, or, more simply, as chalk absorbs water, without showing the slightest humidity. What we have said of the diffusion of gases, however, does not apply to known bodies in a gaseous form, for the muriatic acid and alkaline airs exert their mutual affinity in this aerial state; nor is it quite certain, though probable, that no union takes place between the discordant ingredients of our atmosphere.

Solution is evidently a chemical combination, and of extensive operation in the practice of pharmacy, at least in the way we have explained it. The degree of affinity of bodies for the most common menstruum, water, is various. Some salts, as potash, will extract it from the driest atmosphere, and they are then said to *deliquesce:* others will yield readily the water which they entangle in their crystals, and are then said to *effloresce.* We sometimes employ solution to separate salts from insoluble impurities, and the process is called *lixiviation;* sometimes to separate soluble impurities, and it is thus *edulcoration.* When one portion only is separated from an heterogeneous compound, it is styled *extraction.* Different kinds of solution, as already explained, are styled *infusions, decoctions,* &c. *Maceration* is infusion long continued, often interposing triture; and *digestion* is infusion with a continued heat below the boiling point. The solution of metals in mercury is termed *amalgamation. Absorption* is the condensation of gas in consequence of its union with a fluid.

There are, however, combinations independent of chemical affinity. The suspension of oils in water by means of an intermede, styled *emulsions,* is one of these; and the solution of resins with water, by means of gum, as in the gum resins, galbanum, asafœtida, &c. is another instance. The union of oils with mucilages, in a *linctus,* is a simple mixture, and the greater number of combinations in extemporaneous prescriptions are the same.

DECOMPOSITION is chiefly effected by the superior affinity of some added substance to that by which the bodies were previously united, the abstraction of one of the bodies, or an alteration of the circumstances connected with their union. Thus vitriolated potash is decomposed by adding the smallest particle of barytes; salts are deposited from water by evaporation, or by the abstraction of caloric.

Dissolution, by some late authors, is opposed to solution, and it is applied when, in the solution of two bodies, a previous union is destroyed. It is a solution of pure calcareous earth in muriatic acid, but a dissolution of carbonated lime in the same acid, since the carbonic acid is separated in the form of gas. This separation of gas is called *effervescence.*

Precipitation comprehends those processes in which the body previously dissolved becomes solid. Thus flint is separated from fluor acid air in a solid form, and magnesia from Epsom salts. This, however, commonly styled a *precipitate* when heavy, is cream when it swims on the surface, as the lime separated from lime water is called cream of lime. Precipitation is effected by abstracting a portion of the menstruum, or diminishing its powers. The latter is sometimes effected by dilution; as when alcohol dissolves resins they are precipitated by adding water, while the abstraction of water produces the precipitation of salts. Another cause of precipitation is the addition of a body which has a superior affinity to the menstruum, or to the dissolved substance; but the latter is not precipitated unless it is insoluble in the new fluid.

Precipitation is employed to procure substances which nature offers in a compounded state, as magnesia from Epsom salts; sometimes to separate impurities, as lime is separated in a considerable degree from neutrals by the vitriolic acid. The whole system of chemical re-agents, in the analysis of mineral waters, is connected with precipitation. The conduct of this pharmaceutical operation requires minute attention. The re-agent must be peculiarly pure; it must be added slowly, and never in excess. We must be cautious also in our examination of the precipitate, that other bodies may not be accidentally mixed; for the whole may be a solution in a compound menstruum, and, destroying the combination, may precipitate other bodies besides those which are affected by the chemical affinity of the re-agent.

Crystalisation is a slow precipitation; and in this gradual process the particles of salts assume particular

forms, perhaps from a certain polarity in their minute particles. Though we find crystalisations particularly in salts, yet every body, when the attraction of aggregation is completely removed, and the menstruum is sufficiently fluid to admit of its motions, seems capable of assuming a regular form, except perhaps the fat oils. The experiments, which seemed to show some determined forms in their particles, were probably optical delusions.

M. Haüy has rendered it probable that there are only three forms of integrant particles, the parallelopiped, the triangular prism and the tetrahedron. The primitive forms of crystals are, however, six; the parallelopiped; the regular tetrahedron; the octaedron with triangular faces; the six-sided prism; and the dodecahedron, terminated by rhombs, or by faces of isosceles triangles.

It has been observed that the menstruum should be so attenuated as to give perfect freedom of motion to the particles; nor, perhaps, is there an instance of bodies perfectly dry crystalising. Gunpowder is sometimes decomposed by the nitre crystalising, but only when it has previously deliquesced. In this case we perceive that the operation of crystalisation is effected with some momentum, as it overcomes the attraction of aggregation; and we recollect an observation of Vauquelin, that in one instance it appeared to break a thin vial. When, from the deposition of some impurities, the fluid becomes thick, the crystals are no longer formed, and the fluid is then called the *mother water*, mater crystallorum.

The liquefaction by fusion is equally favourable to crystalisation if conducted with care, as by solution; but the crystals first formed should be removed, or the future ones will fill up the interstices. In the formation of all crystals by solution some water is entangled between the crystals, called their *water of crystalisation;* and in the experiment before alluded to, where many salts rapidly crystalising form a solid mass, it is from the whole of the water being entangled between crystals, of many different shapes. Those salts which are far more soluble in boiling than in cold water, contain the greatest proportion of the water of crystalisation; and those which differ little in this respect, the least. For the crystalisation of the latter evaporation is always necessary.

In many respects crystalisation is an object of curiosity rather than use; but it is employed to separate salts from impurities, and from other salts which differ greatly in solubility, or their different affinities to hot or cold water. It is probable also that some of the metallic salts only crystalise when they contain the acid, or rather are oxidated in a given proportion. Hence, emetic tartar in the form of crystals is a more certain medicine than when confusedly crystalised in powder. The perfection of the needle-like crystals in the sublimation of calomel is a test also of its goodness.

Oxygenation is frequently a necessary pharmaceutical operation. It was formerly styled combustion; but this operation, attended with the production of heat and light, is only one mode of oxygenation. When the saccharine acid, for instance, is formed by the addition of the nitric acid to sugar, the process is called oxygenation, though neither heat nor light are produced.

Combustion is a process sufficiently known. It is employed to procure the alkaline salts of vegetables, and more partially in *charring*, where the heat, and perhaps the light, are forced to combine again with the wood in a looser union. When attended with flame in the usual manner, it is styled *inflammation;* when with violent heat and light rapidly separated, *deflagration*. In the latter process the materials must be dry, they must be projected in small quantities, and the deflagration must be completely over before more is added, or the metal will not be properly oxygenated. The operation is assisted by stirring when the first violence of the explosion is at an end. In all these processes the oxygen is derived from the air, from the decomposition of water, or from acids, when they are employed. When the various modes of oxygenation are designed to produce an oxide, modern refinement has styled it *oxidisement;* when an acid, *acidification*.

In medicinal pharmacy, metals are the common subjects of oxidisement or acidification; for many of the metals, as we have seen, are acid when in the form of oxides. Iron and manganese are oxidised merely by the action of the air. Gold and platina scarcely undergo this change in the most violent heats. The action of the air greatly assists the operation of water in producing oxidation. When acids are employed they are sometimes decomposed, and afford the oxygen; but most commonly enable the metal to decompose water. The sulphuric acid is decomposed by few metals, but powerfully promotes the decomposition of water. The nitric acid, on the contrary, in almost every oxygenation, is itself decomposed. The muriatic acid is never decomposed, and only acts on metals capable of decomposing water. When oxidised it readily yields the superabundant oxygen, but no portion of that which contributed to its original formation. The more rapid the process, the more complete is the oxygenation; and when it proceeds too slowly it may be accelerated by heat; when too rapidly, diminished by cold. When metals are oxygenised by acids, they are generally united in the form of salts; but if oxygenised in a great degree, they are insoluble in acids.

The *disoxygenation* of metallic oxides is seldom required in medical pharmacy; but compound oxides may be farther oxygenised by treating them with nitric acid. In this way various acids are formed; but scarcely any of these are employed in the practice of medicine. The combination of oxygen from the atmosphere with various vegetable matters, which takes place in the different forms of FERMENTATION, we have already considered. Vide in verbo.

If we were to arrange more regularly the objects of the pharmaceutist's attention, we should propose the following plan. In the usual dispensatories no scientific arrangement has yet been attempted; and this, as a first attempt, may be found imperfect.

I. MEDICINES IN A FLUID FORM.

a Not decomposed.

EXPRESSED JUICES, SYRUPS, SOLUTIONS, INFUSIONS, VINEGARS.

b Partially decomposed.

WINES, DECOCTIONS, TINCTURES.

c Completely decomposed.

DISTILLED WATERS and SPIRITS; ESSENTIAL and EXPRESSED OILS.

II. IN A MORE SOLID FORM.
CONSERVES; INSPISSATED JUICES; RESINS; POWDERS.

III. CHEMICAL COMBINATIONS.
SALTS; *neutral, earthy, and metallic.*
OXIDES.
INFLAMMABLES.

IV. MIXTURES.
a Fluid, JULEPS, EMULSIONS, LOTIONS, LINIMENTS.
b Semi-fluid, CATAPLASMS, OINTMENTS, CERATES.
c Solid, PILLS, TROCHES, PLASTERS.

Medicines in a *fluid form,* not decomposed, or at least the juices only separated from the woody fibres, soon spoil. A little fermentation commences, they become foul and ropy; so that they should be quickly used, unless preserved by a mixture of spirit. The *syrups,* from their inspissated form, are not equally susceptible of fermentation, but in a cool place may be long preserved; though the sugar, after a certain period, begins to crystalise. The *vinegars* are less liable to change; and the *solutions,* in which we chiefly include the salts in a fluid form, appear to be less so. The metallic salts however are sometimes deposited when the phial is frequently opened; and the solutions of emetic tartar, of muriated barytes, and quicksilver, are stronger at the bottom if shaken, but weaker if dropped out without any agitation. Under the head of solutions we include all mineral medicines in a fluid form, though the menstruum be wine, as in the antimonial wine, or spirit, as in Van Swieten's solution of sublimate, or the tinctura ferri muriati.

In the *wines, decoctions,* and *tinctures,* vegetable substances, we have said, are partially decomposed; the least in the wines, and most considerably in the tinctures, which, if the spirit be rectified, contain almost the pure resin. In the wines and decoctions the depositions are considerable, and they should not be long kept: in the tinctures they are less; but as the spirit evaporates, and the closest stoppers will not wholly prevent it, the dissolved substance is no longer suspended. No means can wholly prevent the deposition, and tinctures are always unequal unless when recent. Fortunately the dose is usually not small, and no great dependence is placed on them. To this, however, the tinctures of opium and digitalis are exceptions.

A more complete decomposition takes place in *distilled waters, spirits,* and *oils.* These, in fact, are the essential oils of vegetables, combined with water, or alone. The water in these cases is free from impurities, and will not spontaneously change; but in the simple water the oil sometimes separates, rising to the top; so that if long kept they should be frequently shaken. In the spirit the oil continues without any separation. These are the liqueurs of the French and Germans, in which the spirit is disguised by the sugar, and softened by the oil, which communicates the flavour. The least hurtful are those which are flavoured by aromatics; but all are seductive, and accustoming the palate to a stimulus, it soon requires a much stronger one, regardless of the flavour which first allured. The expressed oils are well known; but when the separation is assisted by heat, which is usually applied by heating the plates of the press, they soon become rancid. This is the foundation of the direction, when *cold drawn* linseed oil is prescribed. Essential oils are subject to a change in consequence of the formation of crystals, (see GAUBII ADVERSARIA); but their nature and source is not known; and as they form gradually without being conspicuous till after many years, it is sufficient to mention the change only in this place.

Medicines in a *solid form* are the *conserves,* which after a little time ferment if not kept cool; the *inspissated juices,* which, if moist, contract a mucor, if hard, become friable, and not very distant from the form which follows, the *resins.* The conserves and inspissated juices should be in a moist state, and covered with paper, dipped in spirit. Powders should in general be kept dry, and in bottles closely stopped.

The *chemical combinations* require no particular remark. The oxides are sufficiently known, and under the inflammables we include the hepatised ammonia, and the preparations of sulphur.

The *mechanical mixtures* in a fluid form can seldom be so accurately mixed as to prevent separation, and they are not adapted for long keeping. Those which are of a greater consistence do not separate, but the oils of the *plasters* and *cerates* often become rancid, and irritate the wounds they are intended to sooth. In general they are in a very imperfect state. The plasters and ointments we have styled mixtures; but in the articles EMPLASTRA and NUTRITUM we have given more correct views of these formulæ: as the chemical action, however, is apparently confined to the calces of lead, we thought it better to follow the more common ideas in this place. *Pills* and *troches* are undoubtedly mechanical mixtures; but it is necessary to remark that the first are usually so soft as not to preclude chemical action. By keeping, therefore, they often lose their virtue, or acquire different qualities. They often also become so hard as to be insoluble in the stomach.

An abstract of ancient pharmacy would have afforded some subjects of curiosity, but would not have been particularly interesting, and certainly of no utility. To assist, however, the reading of a few ancient authors which still hold their place in libraries, it will be necessary to notice some of their terms, and the same arrangements of medicines peculiar to the language of pharmacy. Thus the term *julepum* is often confined to medicines used as alteratives; *distillatio instaurans,* or *jusculum,* to a nutrient mixture; *bochetum* to a diaphoretic; *hordeatum,* or *ptisana ex hordeo,* to a diluent; *potio* to a laxative. *Opiatum* is often the term for a bolus, as resembling in consistence the theriaca; *morselli* and *pandalcones* for pills; *dropaces* for stimulating plasters; and *spanadrapi* for adhesive ones. A semi-fluid application to the head is often called *frontale* or *apophlegmatismus;* a more solid one *cucupha.* To the stomach an application of the solidity of a plaster is called scutum; and the softer kind of pessary *nascale.*

The pharmaceutical classes of medicines are,

THE FIVE EMOLLIENT HERBS; malva; althæa; violaria; mercurialis, and parietaria. To these are sometimes added branca ursina; beta, and atriplex.

THE FIVE CAPILLARY HERBS; adiantium nigrum

& album; polytricon aureum; tricomanes, and ceterach.

THE FOUR GREATER WARM SEEDS; semina anisi, fœniculi, carui, and cumini.

THE FOUR LESSER WARM SEEDS; semina ammeos, amomi, apii, and dauci.

THE FOUR GREATER COLD SEEDS; semina cucumeris, cucurbitæ, citrulli, and melonum.

THE FOUR LESSER COLD SEEDS; sem. endiviæ, scariolæ, lactucæ, and portulacæ.

THE FIVE GREATER APERIENT ROOTS; radices opii, fœniculi, asparagi, petroselini, and rusci.

THE FIVE LESSER APERIENT ROOTS; rad. graminis, rubiæ, eryngii, capparis, et ononidis.

THE FIVE KINDS OF MYROBOLANS; citrini, chebuli, indi, emblici, and belerici.

THE FOUR CORDIAL FLOWERS; flores boraginis, buglossi, rosarum, and violarum.

THE FIVE PRECIOUS STONES; lapides saphyri, granati, smaragdi, hyacinthi, and carneoli.

THE FOUR PLEURITIC WATERS; aquæ cardui b. mariæ, taraxaconis, cardui benedicti, and scabiosæ.

THE THREE STOMACHIC OILS; oleum absynthii, cydoniorum, and mastichinum.

THE FOUR WARM OINTMENTS; aregon, martiatum, altheæ, et agryppæ.

THE FOUR COLD OINTMENTS; album camphoratum, rosatum mesue, populeon, and infrigidans Galeni.

These classes the young pharmaceutist was directed to commit very carefully to memory, and was frequently examined on the subject.

We had intended to have enlarged farther on the modern NOMENCLATURE of pharmacy, vide in verbo; but the few remarks already offered are probably sufficient. We wish they may be so to correct redundance in titles. The botanist was glad to escape from the descriptions of Ray and Caspar Bauhine, by the substitution of a trivial name for each species; and when custom had established such, a change was sacrificing convenience to accuracy, and to accuracy misplaced. It is the object of the pharmaceutist to point out the species employed, in his list of the materia medica, not to repeat it on every occasion in his title.

As we have enlarged on the distinguishing characteristics of the skilful surgeon and judicious physician, we may be expected to speak also of the character of a pharmaceutist. We supposed, however, that common honesty, and an acquaintance with the properties of each medicine, was sufficient. Yet these are enlarged on with some originality, quaintness, and energy, by an old author on the subject, now lying before us (Renodæus), that we are tempted to extract a small part of it.

" Probity is no less necessary in a pharmaceutist who prepares medicines for the preservation and recovery of health, than in a philosopher; for in his hands are disease and health; death and life. If ignorant or malicious, he is able essentially to injure or to kill. A pharmaceutist should therefore be as conscientious as Socrates.

" Principally he ought to be religious, to reverence the Almighty; wholly free from envy and malice; sound in mind; acquainted with grammar; neither indigent nor covetous; and able to bear fatigue both by day and night. The atheist is equally regardless of the Creator and the creature; and the invidious man pines at his neighbour's prosperity. The fool is anxious to do mischief; and the unskilful man thinks nothing right but what he does himself; and no one is more unjust. The covetous man benefits nobody, and is most unjust to himself: the poor man is easily tempted to poison. His poverty but not his will consents. (Ad turpia enim cogit egestas.)

" Drunkards, buffoons, mimics, chatterers, impostors, and mountebanks, who deceive by trifling, fraud, boasting, vain promises, flattery, and lies, who thus exhaust the purses of the common people, are unworthy the name of *pharmaceutists*. Nothing is more injurious in a state than such reptiles. (Cane quovis potioribus & angue).

" Since the subject of pharmacy and medicine is the same, viz. the human body as susceptible of either disease or health, the physician and apothecary must have many common qualities, such as prudence, probity, diligence, and a knowledge of medicine; but since pharmacy is subservient to physic, and has only for its object the medicine itself, or its due form, when the pharmaceutist proceeds farther he becomes a quack and a cheat. * * * * * * * * * * * * Nor must we trust pretenders, who assert that gentle medicines may be given at any time without danger; for lettuce at an improper season, and in too large a quantity, is as fatal as hemlock; and though wine is familiar to the constitution, it is often more destructive than the sword: though a cordial, the milk of old men, the restorer of the principles of life, if given at an improper time it is highly injurious.

" The duty of the apothecary is confined therefore to the medicine, to apply it to the purpose of restoring health. That he may execute this office with success, he must select, prepare, and compound the remedy; but before he selects it he should know what it is." J. Renodæi Institutiones Pharmacuticæ vel Dispensatorium Galeno-Chimicum, quarto, Hanoviæ, 1631, Lib. 1. cap. 2. page 3.

A. Duncan's Edinburgh Dispensatory; Renodæi Dispensatorium; Pharmacopeia Augustana Zwelferi; Schroeder Pharmacopeia Medico Chimica; Lewis' Dispensatory; Dossie's Elaboratory laid open; Baumè Elemens de Pharmacie; Gaubius de Formulis; Annales de Chymie.

Pharmacia extemporanea. If pharmacy, in one view, be the art of compounding medicines, extemporaneous prescriptions may be properly distinguished by this title. We long hesitated about introducing an article of this nature; and it may be easily supposed that the accomplished physician, when he has ascertained the nature of a disease, and sees the changes necessary in the constitution for the restoration of health, will be readily able to adapt his means to the end in view. This however is not always an easy task. A young physician, anxious for his patient, perhaps for his own credit, feels this part of his duty difficult; and it is unfortunately that which the apothecary can best judge of, and in which mistakes will be most readily caught

at and ridiculed. We conclude, of course, that he has not been bred in the dull circle of an apothecary's shop; yet it is singular, that those who have climbed over the counter into their chariots have not appeared always the most ready in this part of their duty. A few remarks on this subject may not be therefore improper; and we shall translate them from a little manual, which in early life we wrote for our own use, with such additions as a long experience has suggested.

It is not our present object to point out the doses of medicines, as it is our design to enlarge farther on this subject under the article POSOLOGIA, q. v. We may remark, however, in this place, that the rules laid down on this subject by authors, when they teach us how to vary the dose according to age or sex, are liable to numerous exceptions. Thus a child of a year old will often bear a larger dose of calomel than an adult; and a weak female a larger dose of rhubarb than a robust labourer. Gaubius, Wedelius, and Boerhaave have, however, regulated the doses with mathematical accuracy, from the age of fifty-six, the standard, to ninety-eight on one side, and to seven weeks on the other. We need not add, that such tables are wholly useless.

It is scarcely necessary to remark that the general qualities of each medicine, and of its most common forms, should be known. An emulsion, for instance, will be decomposed by a variety of medicines which it is sometimes necessary to add, particularly by the camphorated tincture of opium. The physician should know also the effects of mixture, that camphor, v. g. will soften the fetid gums, and different ointments, reducing what may be ordered to be spread on cloth, to the consistence of a liniment. It is needless to add that practitioners should be acquainted also with the chemical properties to prevent decompositions; and for this purpose we anxiously pointed out in the article CHEMIA, q. v. the different preparations which would destroy each other's properties. Sometimes, indeed, decompositions are apparently intended; for if Griffith's mixture be given in the form of pills, they are of a very imperfect conistence, but harden as the different ingredients act on each other; and in the mode we have recommended for making Plummer's pills, the calomel and the sulphur auratum evidently combine in the mass. It sometimes however happens that this combination of different ingredients renders the pills hard and insoluble; an inconvenience severely felt if the pills are kept for a long time.

The taste, the smell, and the general appearance of the medicine, require particular attention in an age so luxurious as the present. Unfortunately, active medicines cannot always be rendered pleasant, and the most disagreeable are usually given in the form of pills. If these cannot be swallowed, for some people are unable to swallow what they have not masticated, the inconvenience of the taste cannot be avoided. It may however be often lessened by choosing a proper vehicle. Thus milk covers the taste of bark, of volatile tinctures of guaiacum and valerian. A solution of the juice of the liquorice, or a light decoction of the root, covers more effectually than sugar every bitter taste; and a small proportion of kali changes it at least to a different, often a more agreeable one. Any change is sometimes sufficient to reconcile a delicate taste to the continuance of a medicine.

It is easier for some individuals to swallow a small bolus than pills, and a bolus wrapt in wafer paper slightly moistened, slides often with ease through the œsophagus. Some unpleasing medicines, if the bulk be not large, may be conveniently conveyed into the stomach in this form. It is highly necessary, however, if we regard elegance or convenience in prescriptions, to be aware of the different specific gravities of medicines. The bulk of some medicines in moderate doses renders their exhibition in pills or boluses inconvenient, while the weight of others in small ones subjects them to be lost, if given in a liquid form. Yet we once saw two grains of calomel ordered in a four ounce mixture to be taken by table-spoonfuls.

The forms of fluid internal medicines extemporaneously prescribed are DRAUGHTS, MIXTURES, JULEPS, EMULSIONS, INFUSIONS, DECOCTIONS, SOLUTIONS, TINCTURES, DROPS, and CLYSTERS. The solid forms are, POWDERS, BOLUSES, ELECTUARIES, LOHOCS, and PILLS. The ancient pharmaceutists employed many others, and were minute in their distinctions.

Draughts and *mixtures* differ only in the quantity sent; as the draught is usually taken at once, and should not exceed an ounce and a half. In a larger quantity it has been styled a *potion;* but this term was almost exclusively confined to a purgative, and is now disused. The young practitioner will endeavour to make his draughts as pleasant as possible, combining the more nauseous ingredients in pills. At all events they should not be too thick, and a single draught should never contain more than two scruples of a powder, seldom more than half a dram; of electuaries and conserves not more than a dram; of inspissated juices or extracts, a scruple. The mixture may vary from three to six ounces; but in this form we should avoid oils, which soon become rancid in warm weather; conserves, which will ferment; and such combinations as will not be permanent. In general, mucilages are more convenient media to combine oils with water than the yolk of an egg; and the mucilage of gum-tragacanth is apparently better than that of gum-arabic. If oil is employed, about half the quantity of mucilage is necessary; if balsams, an equal; and if resins, a double quantity. Spermaceti requires nearly an equal quantity; wax (previously rubbed with spirit of wine), and balsam of sulphur, double; camphor, it is said, four times, and musk five times, as much. Camphor may, however, be conveniently suspended by rubbing it previously with magnesia; wax, by a mixture of soap; magnesia itself, by previously rubbing it with sugar; and resins, by trituration with almonds.

Juleps, in the strictness of the ancient pharmaceutists, is a sweet mixture, as the Persian name imports, to disguise or carry off the taste of the more disagreeable medicines. Its characteristics are pellucidity and sweetness; but at present the name is employed without any determinate meaning, or as synonymous with mixture.

Emulsions are oils united with watery fluids by means of mucilage, sometimes by ammonia. The latter are however easily decomposed, and seldom continue in perfect union many hours; so that they are chiefly adapted for draughts, or at least no more should be ordered than can be taken in twenty-four hours. The

others are more permanent in their union; but even of these no very large quantity should be directed, unless intended for a common drink.

Infusions are made with cold or with boiling water. Many bitters yield a pleasant impregnation to the former, and a harsh disagreeable one to the latter. Camomile flowers, the carduus, and some others, are of this kind, and probably the bark may be added. We now know that cold water dissolves the extractive matter only, boiling water the resin, probably increased in quantity by the oxygen absorbed from the air if the vessels are not close. It has been supposed that previous trituration with magnesia will enable the water to dissolve a larger portion of the bark, but the colour only is apparently heightened, for the same effect will be produced if the magnesia or kali is added to the strained fluid. Infusions, however, are not to be depended on in emergencies: they are chiefly adapted to a medicine which must be long continued, and are seldom given alone without some medicine to add to their warmth. From what we have remarked under the article COMBINATION OF MEDICINES, it is probable that the formula will be more effectual if the addition is of a different kind.

Decoctions are prepared by boiling; but, for the reasons assigned, the proportion of the ingredient should be increased, the time of boiling shortened, and the vessels carefully closed. In many instances, when we wish to preserve their strength unimpaired, they should be strained warm, and those ingredients which yield their virtues readily should be added only at the end of the process; for the water might be otherwise saturated, and the more useful ingredient yielded in a less proportion. It was formerly not unusual to add a neutral salt, as in the decoctum bardanæ. This should be guarded against if we ever wish to unite a mercurial with it. The usual proportion of the vegetable is from one ounce to two, to a pint and a half of water, to be boiled to a pint, if not of a resinous nature.

Solutions are, as may be supposed from the term, saline bodies dissolved in water, and may appear to require no particular directions. The first and most obvious remark is, that the water should be pure. Distilled water is necessary in many solutions, but rain water, carefully filtered, is pure enough for almost every purpose. Muriated barytes, for instance, is decomposed by all water containing selenite; nor are the solutions of tartarised antimony or muriated mercury wholly unaffected by the common contents of water. A reason already assigned renders it inconvenient to order a large quantity of these solutions, since, by frequently opening the bottle, the access of air occasions some decomposition, so that the latter part differs greatly in strength from the former. The aqua ammoniæ is from this cause very unequal in strength; and it is always safer to order the salt. Arsenical solutions are subject to the same inconvenience; and we have found it safer to add these in a determinate proportion to a small mixture composed chiefly of distilled water, and in a quantity no larger than is sufficient for three or four days. In solutions of neutral salts we find the cathartic power often increased in proportion to the quantity of the menstruum, so that three drams of Rochelle salt in a pint and half of water will often have more effect than twice that quantity in three ounces. The deposition of any portion of muriated mercury is prevented by adding the muriated ammonia; but, in general, if we wish to prevent precipitation, it is best effected by adding the acid which has the greatest affinity, not to the metal, but to its oxide.

Tinctures are officinals, and scarcely the object of extemporaneous prescription. We notice them only to remark that if the weaker spirit is combined with the stronger, some decomposition will ensue, and injure the elegance of the formula. A small proportion of alcohol should therefore be occasionally added. It is not common to add any other ingredient to tinctures; but laxative ones are rendered occasionally more active by a small proportion of emetic tartar, and the tonics somewhat altered in their appearance, if not improved in their power, by a fixed alkali. No prudent physician will neglect occasional changes in appearance, to inspire confidence: no skilful, we had almost said, no honest one, will alter the essential parts of plans which he finds advantageous.

Drops. If these are in small doses, the size of the mouth of the phial and the quantity of fluid in it may make a material difference in the quantity taken. It is necessary, therefore, to dilute it with at least a triple quantity of the fluid, that the little variation, from the causes mentioned, may not essentiallly alter the real dose. Some colouring matter in this form is often necessary. The precautions suggested under the two last heads will require attention in the prescription of drops.

Clysters. Elegance of the formula is in this mode of relief less important when given with a view of evacuating merely; but when medicines of a different kind are injected, some attention to their mixture is requisite. Camphor, for instance, should be carefully divided, lest portions should adhere to the rectum, and produce unpleasant consequences. Turpentine we have also found it necessary to mix with care, to avoid an inconvenient stimulus. When mucilage, or the yolk of an egg fails, we have found the coarsest brown sugar contribute to its union with the watery fluid. Clysters, for the purpose of procuring a discharge, should exceed a pint: if they are to be retained, they should not be in a larger quantity than three or four ounces. If intended as nutrients, the latter quantity is fully sufficient, and some opium should be added to retain it. Antispasmodic clysters should be equally restrained from passing off, by opium; and these in children should never exceed two ounces, though their purgative clysters may be more than six. In general, the dose given in clysters is allowed to be triple that taken by the mouth.

Powders is a simple form, scarcely requiring a remark, except that deliquescent salts should be avoided. There are some powders also which decompose each other in a dry state, or at least render each other inert: sulphur, for instance, destroys the activity of mercury, and lime will decompose muriated ammonia. In prescribing powders, this circumstance requires very particular attention.

An *electuary* differs from a *bolus*, as a draught from a mixture, in the quantity being either a single dose or several together. Each consists of powders or extracts

brought to this semi-fluid form by means of syrup. Other fluids will not give it sufficient cohesion; and if the dose of the powders is large, conserves will add too much to the bulk. All essential oils, however, including camphor, require conserves: turpentines are best covered by honey; but all these are more safely and properly combined in draughts, if we except camphor, which should, if possible, be directed in a bolus or pills. The interest of the apothecary is not injured in this way, as he has learnt to charge a bolus in a draught. Conserves in general are best adapted to the metallic oxides, many of which are heavy; but such electuaries should be sent in small quantities, lest they be injured by fermentation, or rather in boluses, as an error in the quantity may be injurious. In general, every medicine to be taken in a precise dose should be sent in a bolus or a draught.

Lohoc is a form of Arabian invention, as the title implies. It is generally composed of oils with mucilages, but any of the mucilaginous conserves, as that of hips, may be employed. It is of an intermediate consistence, between an electuary and an emulsion, and should be so dense as not to be immediately lost on the fauces, and so fluid as not to excite deglutition; for when it has passed the fauces its utility is at an end. Small quantities of a mild fluid seem in general equally efficacious, particularly the common emulsion with nitre, or barley water sweetened with capillaire.

Pills are sufficiently known; but we have already remarked that whatever decomposition may take place by time, should be considered, and the change, whatever it may be, guarded against. The various extracts, the fetid gums, camphor united with the conserve of hips, metallic salts, are best adapted to this formula. Few persons will swallow more than four or five at a dose, but many swallow them so easily that they make little difficulty of taking ten, fifteen, or twenty. When this is the case, almost every medicine, except deliquescent salts, may be given in this form; and these may be easily avoided.

The external formulæ are, GARGLES, FOMENTATIONS, CATAPLASMS, LINIMENTS, OINTMENTS, and PLASTERS; but they require no particular remarks The gargles are mixtures; the fomentations, decoctions; the liniments, like the lohocs, of a consistence between a solid and a fluid.

Various other formulæ are chiefly officinal: the different distilled waters of former dispensatories, lozenges, syrups, and vinegars, are seldom the objects of extemporaneous prescription.

Before we conclude this article, it will be necessary to enumerate and shortly explain the various terms of former pharmaceutical authors, and we shall, for the convenience of referring, adopt an alphabetical order. Though many of these have already occurred in our pages, it may be useful to bring them together in one view.

Anacollema, a glutinous cataplasm, applied to the forehead to intercept, according to the ideas of the ancients, the flow of blood to the nostrils in cases of epistaxis. *Apozema*, a decoction.

Bacilli; small sticks for the production of smoke, or for inhaling. *Claretum*; wine rendered aromatic by the infusion of spices, sweetened with sugar; vide in verbo. *Collutiones*; washes held in the mouth. *Crocus*; any calx of a bright yellow colour. *Cucupha*; a bonnet filled with cephalic medicines, vide in verbo. *Dropax*; a strongly adhesive plaster, whose chief ingredient was pitch. *Eclegma*; a lohoc. *Elixir*; a tincture. *Embrocha*; a stillicidum, dropping or pouring water. *Essentia*; besides its common meaning, sometimes signifies inspissated juices, sometimes eleosacchara. *Epithema*; a liniment. *Frontale*; a liniment applied to the forehead. *Galreda*; an inspissated animal glue. *Glandes*; see SUPPOSITORII. *Holippæ*; sweet cakes rendered medicinal by some infusion. *Lapis vegetabilis*; any fluid medicine inspissated by evaporation, and dried to the hardness of a stone. *Liquor*; the fluid of deliquescing salts, often a distilled fluid. *Lonzogæ*; lozenges. *Malagma*; cataplasma. *Magisterium*; vide in verbo. *Martius panis*; almond bread, made also of pistachio and other nuts. *Masticatorium*; any acrid medicine chewed to promote a discharge of saliva, or as was said of PITUITA, q. v. *Mel*; not only honey, but any preparation in which it was used, or of the same consistence. *Morsuli* or *morselli*; lozenges usually of a square form. *Moretum*; a preparation of mulberries joined with aromatics, and some absurd ingredients, which was formerly supposed useful, and cordial to the fœtus, but capable of expelling a false conception. *Nascale*; see PESSUS. *Opiatum*; an electuary of the consistence of the confectio opiata. *Oxyrrhodynon*; an application consisting of vinegar and roses, designed to relieve pain, formerly applied to the head, forehead, or neck.

Pandalcum is a lozenge poured, while fluid, into a box as a mould. *Pasta regia*; see MARTIUS PANIS. *Pastilli*; lozenges. *Pessus*, vide PESSARIA in verbo. *Periamma*, and *periapton*, an amulet hung round the neck. *Phœnignus*; a slight rubefacient. *Pineatum* and *pineolatum*, martius panis, made of pine-nuts. *Pomum ambræ*; an odoriferous mass, supposed to ward off infection. *Rotulæ*; lozenges of a round form. *Sacculus*; an application consisting of dry medicines, sometimes odoriferous ones, included in a bag. *Sapa*; inspissated must; sometimes a conserve. *Saponea*; a linctus made of almonds. *Sief*; a dry collyrium. *Smegma odoratum*; an odoriferous soap. *Spanadrapus*; linen dipped in a fluid plaster, chiefly adhesive. *Stymma*; the dry mass which remains after expressing the oil, in which flowers have been macerated. *Suppositorium*; a solid, round, conical body introduced into the anus, often to excite its action and procure a motion. *Tragea, tragema*; a pleasant powder. See MEDICINA. *History*, and Kirkland's Inquiry, vol. i. p. 64, &c.

PHARMACI'TIS, (from φαρμακον, *a drug*; because as a drug it was formerly used). See AMPELITIS.

PHARMACOCHY'MIA, (from φαρμακον, *a drug*, and χυμια, *chemistry*). Pharmaceutical chemistry in contradistinction to the spagirical art, which treats of the transmutation of metals.

PHARMACOPŒ'IA, (from φαρμακον, *a medicine*, and ποιεω, *to make*). See DISPENSATORIUM.

PHARMACO'POLÆ, (from φαρμακον, *a drug*, and πωλεω, *vendo*). See AGYRTÆ.

PHARYNGÆ'A CYNA'NCHE, (see ANGINA PHARYNGÆA, *pharynx*).

PHARYNGÆ'UM SA'L, (from φαρυγξ, *pharynx*). A salt used in quinsies, thus prepared: ℞ Crystal. tart. sal nitri āā ℥i. alum. ust. ℥ss. dissolve in distilled vine-

gar, and coagulate the solution. This salt was formerly dissolved in water for gargarisms.

PHARYNGE'THRON, (from φαρυγγεθρον). See PHARYNX.

PHARY'NGO-STAPHYLI'NI, (from φαρυγξ, and σταφυλη, *uvula*), are two small muscles fixed to the lateral part of the musculi thyro-pharyngæi, as if they were portions detached from these muscles, running obliquely forward along the two posterior half arches of the septum, and terminating in the septum above the uvula, where they meet: the thickness of the posterior half arches is made up by these muscles. See Winslow's Anatomy.

PHA'RYNX, (απο το φερειν, because it conveys the food into the stomach); *infundibulum, pharyngethron*, a muscular bag fixed behind to the basis of the skull at the cuneiform process of the occipital bone, laterally to the bottom of the face, and below to the larynx. The muscles which cover the first vertebræ of the neck are behind: on the sides the upper portions of the carotids and jugulars, the apophyses of the sphenoid bone, and the pterigoid muscle.

The pharynx in shape resembles the wide part of a funnel, of which the ŒSOPHAGUS, q. v. is the lower portion. The top is styled the *arch*, which opens to the nostrils: the body communicates with the mouth, and the extremity with the stomach. The arch on each side terminates in a point towards the jugular cavities of the basis of the cranium. It afterwards contracts on each side, and behind the larynx is again enlarged. The muscles which constitute the pharynx are sufficiently described by their names: they are the *crico-pharyngæus*, from the cricoid cartilage to the *pharynx; thyro-pharyngæus*, from the thyroid cartilage to the *pharynx; hyo-pharyngæus*, from the os hyoides to the *pharynx; stylo-pharyngæus*, from the styloid process to the *pharynx; pterygo-pharyngæus*, from the pterygoid process to the *pharynx; mylo-pharyngæus*, from the dentes molares to the *pharynx; salpingo-pharyngæus*, from the Eustachian tube to the *pharynx; cephalo-pharyngæus*, from the basis of the skull to the *pharynx; syndesmo-pharyngæus*, from the white ligament to the *pharynx; chondro-pharyngæus*, from the cartilaginous appendage of the os hyoides; *glosso-pharyngæus*, from the root or upper part of the tongue laterally. Some anatomists have limited the muscles of the *pharynx* to two or three; and others have multiplied them to thirteen or fourteen on each side. Albinus divides them into six pair, viz. the *stylo-pharyngæus* of Douglas; *constrictor inferior*, the *crico-pharyngæus*, and *thyro-pharyngæus*, of Douglas; the *constrictor medius*, the *hyo-chondro*, and *cephalo-pharyngæus* of Douglas; the *constrictor superior*, the *glosso, mylo*, and *pterygo-pharyngæus* of Douglas; the *palato-pharyngæus, thyro-staphilinus* of Douglas; and the *salpingo-pharyngæus* of Douglas. The lowest of these muscles between the sides of the cricoid cartilage form the first muscular circle of the œsophagus, which is continued in complete muscular circles to its extremity. Some of the upper ones, according to Santorini, contribute to modulate the voice.

In their various actions they enlarge and compress the gullet, so as to forward the aliment into the stomach.

The pharynx is made up partly of several distinct fleshy portions, which are looked upon as so many distinct muscles, so disposed as to form the large cavity mentioned, and partly of a membrane which lines the inner surface of this whole cavity, a continuation of that of the nares and palate. This membrane is wholly glandular; and it is thicker on the superior and middle portions of the pharynx, than on the bottom or lower portion. Immediately above the first vertebra it forms several longitudinal rugæ, very thick, deep, and short, and we generally find in them a collection of mucus in dead bodies. In the great cavity there are no rugæ, the membrane adhering, as well as in the upper part, very closely to the muscles. At the lower part, where it is the thinnest, it covers the posterior part of the larynx, and is very loose, formed into irregular folds.

In the London Medical Observations and Inquiries, vol. iii. p. 85, &c. is an instance of a difficulty of swallowing, occasioned by a dilatation of the pharynx.

PHASE'OLUS, (from φασηλος, *a little ship*, which its pods were supposed to resemble). The BEAN, *vicia faba* Lin. Sp. Pl. 1039; *bona;* hath a long pod full of kidney-shaped or oval seeds, which as a food are flatulent, though more nutritious than the other legumina.

PHASE'OLUS MAJOR, *smilax, hortensis, faba major, phaseolus vulgaris* α Lin. Sp. Pl. 1016. FRENCH BEANS, or COMMON KIDNEY-BEANS, are cultivated in gardens; flower in July; the pods are used as aliment, and said to provoke urine. They are less nutrient and less flatulent than beans or peas.

PHASE'OLUS ZURRATE'NSIS, vel BRASILIA'NUS, *phaseolus pruritus excitans, nai corona*, COW-HAGE, COW-ITCH, and STINKING BEAN, *dolichos pruriens* Lin. Sp. Pl. 1019. The hairs upon the pods, if scraped off and mixed with syrup, may be given to children in doses of a tea-spoonful, and two to adults, for destroying the long round worms. If ten or twelve pods are steeped in a quart of beer, and ℥iv. of the infusion taken every morning, they are said to act as a diuretic, and to be useful in dropsies. See Raii Historia; London Medical Journal, vol. vi. p. 313. Vide STIZOLOBIUM.

PHASE'OLUS. See CAJAN FABA MUCUNA GUACU.

PHASIA'NUS, (from Φασις, *a river in Colchis;* upon whose banks they abound). PHEASANT. See ARGUS.

PHAUSI'NGES, (from φαυσις, *fire*). Red circles in the legs, excited by fire; sometimes used to signify spots from other causes.

PHELLA'NDRUM, (from φελλος, *cork*, because it floats upon water). See MEUM ALPININUM GERMANICUM.

PHELLA'NDRIUM AQUATICUM, Lin. Sp. Pl. 366. *Cicutaria palustris tenuifolia*, SKELETON WATER-WORT, WATER-HEMLOCK, FINE-LEAVED; when not thus distinguished it is often confounded with the cicuta virosa. Withering, Bot. Arrang. i. 170, gives the following description of the phellandrium aquaticum: the rundle with many spokes; rundlets, the same; general fence, none; the empalement, a partial fence of seven leaves, sharp, as long as the rundlet; cup, of five teeth, permanent; the blossoms general

nearly uniform; florets, all fertile, individually unequal; petals five, tapering, heart-shaped, bent inwards: *chives*; threads, five, hair-like, longer than the petals; tips roundish: *pointal;* seed-bud beneath; shafts two, awl-shaped, upright, permanent; summits, blunt: seed-vessels, none; fruit, egg-shaped, smooth, crowned with the cup and the pointals, divisible into two parts; seeds, two, egg-shaped, and smooth; florets in the centre smaller than the others. The branchings of the leaves are straddling, the stem very thick, hollow, scored, petals white.

Withering observes that the seeds are recommended in intermittent fevers; and the leaves sometimes added to discutient cataplasms: the plant is generally esteemed a fatal poison to horses, occasioning palsy, owing to an insect (curculio paraplecticus) which generally lurks within the stems: the usual antidote is pig's-dung.

PHE'LLODRYS, (from φελλος, *the cork-tree*, and δρυς, *an oak;* because its bark is a kind of cork, and its appearance that of an oak); *cerris; quercus cerris* Lin. Sp Pl. 1415. The LAUREL OAK, grows in Dalmatia and Greece. The leaves, bark, and acorns, agree in virtues with the common oak. See QUERCUS. Raii Historia.

PHE'NION. See ANEMONE.

PHI'ALA. A large round glass vessel with a long neck, often used for chemical solutions. The common phial also of the apothecaries.

PHILADY'NAMOS, (from φιλος, *a friend*, and αδυναμις, *weak*). An epithet of water, as a salutary diluter.

PHILA'NTHROPUS, (from φιλεω, *to love*, and ανθρωπος, *a man;* because it sticks to the garment of those who touch it.) See APARINE. Sometimes the appellation also of a compound antinephritic medicine.

PHIL'LITIS. See LINGUA CERVINA.

PHILLY'REA. See LIGUSTRUM INDICUM.

PHILO'NIUM. An opiate, called from its inventor Philo; one of the oldest of its class, except perhaps the mithridate. The philonium *Romanum* is originally a prescription of N. Myrepsus. There are different prescriptions for this medicine in various pharmacopœiæ; but in that of London, 1788, it is made in the following manner, styled *confectio opiata.* Take of hard purified opium, powdered, six drams; long pepper, ginger, and carraway seeds, of each two ounces; syrup of white poppy boiled to the consistence of honey, three times the weight of the whole. Mix the purified opium carefully with the heated syrup; then add the rest previously powdered.

PHILOSOPHO'RUM MERCU'RIUS, *arca arcanorum, mercurius metallorum,* is a pure fluid substance, said to be found in all mercury, and capable of being extracted from it. The existence of this principle was founded on the idea that quicksilver, fixed by sulphur, was the basis of all metals.

PHILOSOPHO'RUM O'LEUM. See LATER.

PHILOSOPHO'RUM LA'PIS. See ADAMAS.

PHI'LTRON, (from φιλεω, *to kiss*). *Amatoria veneficia.* A medicine to excite love. We need not add that no such exists, except in the imaginations of the credulous: lust may be excited, but never love. It also signifies the depression on the upper-lip, situated immediately under the septum of the nose.

PHIMO'SIS, (from φιμοω, *to tie up*). *Capistratio,* a disease in which the prepuce cannot be drawn back so as to uncover the glans penis. Dr. Cullen places it as a variety of the phlogosis phlegmone.

This disease is not exclusively confined to syphilitic affections, though then most troublesome, and more peculiarly dangerous. It is sometimes natural, from a contraction of the prepuce at its termination, as if drawn together like a purse by strings; and in that case at once relieved by separating the extremity, suffering it to bleed, and dressing it as a common wound. It sometimes arises from inflammation, in consequence of an acrimony in the mucus of the odoriferous glands; but then the prepuce is not straitened, the glans only is inflamed and swollen, and to draw back the skin is consequently painful. In such circumstances the steam of warm water, or its opposite, cold applications, will often relieve. To inject a fluid between the glans and the prepuce is in such states more easily advised than executed; but if it can be done, it will be often beneficial.

The principal cause is inflammation, excited by gonorrhœa or a chancre, and it is then a more formidable complaint, because the mischief is confined, and we know not its nature and extent, nor can we apply a remedy. If the constitution is robust, and much fever present, bleeding, low diet, and frequent saline laxatives, are useful. Cold applications to the penis are more beneficial than warm, and topical bleeding, with leeches, is occasionally useful. These, however, often fail, though assisted by opiates, a recumbent posture, and absolute rest. The operation then becomes necessary. It is simple, and by no means dangerous. A sharp-pointed knife, concealed and defended by a grooved directory, which must be previously introduced between the prepuce and the glans, are the only instruments. The point of the knife should pass through the prepuce at the bottom, and the section be made by drawing it towards the operator. Common dressings are sufficient; but linen or lint should be interposed between the glans and the prepuce, to prevent adhesions. The treatment of the affection of the glans is connected with its cause, the LUES, q. v.

Paraphimosis is the opposite disease, where the prepuce cannot be drawn over the glans. Warm relaxing applications will sometimes assist; but it is rarely so troublesome as to require an operation. See Bell's Surgery, vol. i. p. 528; and White's Surgery, p. 343.

PHLA'SMA, (from φλαω, *to bruise*). See CONTUSIO.

PHLEBOPALIA, (from φλεψ, *an artery*, or *vein*, and παλλω, *to leap*). See PULSUS.

PHLEBORRHA'GIA, (from φλεψ, and ρεω, *to flow*). A HÆMORRHAGE from a VEIN.

PHLEBOTO'MIA, (from φλεψ, *a vein*, and τεμνω, *to cut*). PHLEBOTOMY, *venæsectio,* the cutting or opening a vein. When several veins were opened in a day, the operation was formerly called *neroniana.*

The first instance of bleeding on record is that of Podalirius: Hippocrates did not often direct this operation; Aretæus, Celsus, and Galen, used it more freely; but at different periods, and by different professors, it was encouraged, or nearly prohibited. Until the circulation of the blood was demonstrated, the principles

of this practice were unknown, and indeed at present they are not, we think, clearly understood.

The discharge of blood procured by this operation is inconsiderable in proportion to the whole mass, so that, though it lessens the whole, the diminution only can produce no effect. The relief which, therefore, follows from bleeding, when properly employed, must arise from another source, and is connected with that state of the system characterised by the term *diathesis phlogistica*. This is the state of the strongest and most robust constitutions, marked by a full strong pulse, florid look, great firmness of the simple solids, and activity of the muscular system. In such habits tension is followed by a proportional reaction, and the fullness of the vessels produces a more powerful contraction of their coats.

The first effect of bleeding, therefore, is to lessen this tension; and, as will be obvious from our remarks on INFLAMMATION, q. v., this diminution will lessen the power of the vis a tergo, and the congestions will be relieved by the action of the affected vessels only. Another effect must also be considered. The relief of this tension will take off from the excessive excitement of the brain; for we have shown (see NERVI) that nervous excitement is intimately connected with the state of that part of the arterial system dispersed on the nerves, or in the brain. This is the source, then, of that fainting which follows a moderate bleeding; and the fainting is in a greater degree, and comes on more quickly in irritable constitutions, where this tension is least, as well as in an upright posture, where the heart acts with disadvantage, as opposing the power of gravity. This general relaxation is attended also with a proportional relaxation of the smaller vessels, and pains are relieved, the general feeling of oppression removed, a sweat breaks out, and a quiet sleep is often induced. Similar consequences, as we have seen, probably follow (see FEBRIS and PESTIS) when the viscera are overloaded, even in asthenic or putrid fevers, and explain the apparently inconsistent practice of Sydenham, Dover, and Rush.

This view of the effects of bleeding will explain the peculiar advantages of topical bleeding. In this case the vessels are emptied near the part affected; and vessels, thus depleted, gradually again filling from the trunks, will lessen the tension of the inflamed arteries, without diminishing the general tension of the vessels of the brain. We must look then to the advantages, and indeed the injuries, which result from bleeding, as connected with this more general or more particular relaxation of the system, and with the assistance of these views we shall examine its effects in the various diseases for which it has been recommended. We may be accused, however, of neglect and inattention in not noticing, with therapeutical writers, the diminution of the actual quantity of blood, or of its crassamentum. The diminution of the absolute quantity, however, is so inconsiderable, that in animals bled to death the redness of the muscles is scarcely, if at all, changed; and in young animals bled repeatedly to whiten the flesh, the effect is rather from the debility excited than the abstraction of the red particles. In these cases, however, the latter circumstance has some effect; for, by whatever mechanism these particles are formed, their formation is not rapid; and if we regularly detract these while the vessels are filled with gelatinous and albuminous fluids, after some time the colour will be necessarily changed. Repeated bleeding may have the same effect in the human body; but we can connect this alteration only with chronic weakness, not with the salutary changes from bleeding. In the same way debility may arise from the abstraction of the gluten or fibrin of the blood, and we may thus attain the object of former pathologists, of rendering it thinner; but till we can trace diseases to viscidity, we shall not employ bleeding for this purpose, which will at the same time gradually destroy the vigour of the system. When regularly repeated in cases of asthma, or from the frequent recurrence of inflammation, we find no benefit resulting from this effect. Anasarcous or other dropsical effusions, the effects of debility, are, on the contrary, frequent consequences.

Bleeding was employed in excess by the mechanical physicians, who thought to lessen the moles movenda by this means, and, consequently, to restore the equilibrium between the weight and the power. We usually employ it inversely to lessen the power. As the mechanical system continued to prevail till a very late era, and the practice founded on these doctrines is not yet obsolete, it is not surprising that bleeding is still frequently and indiscriminately employed. The humoral patholosists used it constantly with another view. As they supposed the cause of diseases existed in the blood, they were anxious to examine its state. Eight or ten ounces were often taken with this view; and if the operation was not carefully attended to, the appearance of a slight buff on the surface would determine the repetition of the evacuation. While both views were adopted in the widely-extended system of Boerhaave, the remedy was, of course, more fashionable, and the error very generally infected the schools of medicine even in our own era. If, as a late author observes, the practitioners of this country are in general Boerhaavians, we shall be less surprised that it is not yet reformed.

Bleeding is supposed to be indicated by a full strong pulse, by difficulty of breathing, and by local pains, in almost every fever of the young, the strong, and plethoric. Various views will, however, limit its use in each state. *A full strong pulse* will often usher in fevers most purely asthenic; nor is it true that if, with the Cullenians, we diminish the reaction, we shall relieve the consequent debility. If we succeed at once in checking the fever, as is certainly sometimes the case, it is a remedy highly useful; but, in ninety-nine out of a hundred cases, perhaps in ten times that number out of a thousand, the pulse sinks; and in the latter part of the fever we have to regret the loss of that strength which we so improvidently wasted. In all such cases we must bleed with boldness, or not at all: when we draw the sword, we must throw away the scabbard.

Again: every practitioner, we suspect, is not able to distinguish the really strong pulse from that which is hard in consequence of irritation. In the epidemic now approaching in this country, the pulse in the earliest period is reported to be full and strong; but the fever is in its nature truly asthenic, and from the time, the previous seasons, and the nature of the other prevailing complaints, we are convinced that the report is fallacious;

but a physician seldom sees fevers on their first attack, and must act from a comparison of many cases. We recollect well the first case we saw of putrid peripneumony: the pulse felt strong, and the fatal fiat was issued to bleed; but a source of doubt arose from the other appearances, and the operation was suspended: the patient was preserved at last, with difficulty, by bark and cordials. In general, therefore, to a full strong pulse we must add a firm constitution, a flushed face in which the character of the features is not lost, and considerable bodily strength. The origin of the disease from cold, without any prevailing asthenic epidemic, the situation of the patient in a dry elevated spot, and the season of spring, will contribute to render bleeding more certainly a proper remedy.

Difficulty of breathing, from any cause, or a fit of asthma, has always been supposed a proper indication for drawing blood, and we have more than once seen it employed in the middle of asthenic fevers from this occurrence. The event was in every instance fatal. On better grounds, and on the sanction of more approved authority, it is employed in the violent asthmatic fits. The relief is, however, purchased, if the fits frequently recur, by exhausted strength and anasarcous swellings. The remedy, which is borne with advantage in youth, is injurious in a more advanced period; but unfortunately before this time it has become a habit, which cannot without danger be broken. In nervous asthmas we can often attain the end by a less dangerous remedy, and it is not the natural cure of a disease which is relieved chiefly by expectoration.

Local pains more decidedly call for this remedy; yet it is often not only ineffectual but injurious. In the weak, the nervous, and the irritable, these pains are common; and it will appear, in a moment, absurd to employ with them a remedy adapted to the firm and robust constitution. Even local discharges of blood will frequently weaken, when with irritability plethora is combined. The latter coincidence often takes place, and on this account we did not mention the full pulse as an indication for bleeding. In fact, we would confine bleeding only to local pains on the access of fever, with the former limitations. It is used also with propriety when these pains attack robust constitutions, though without fever, as in colics; in hernia, in sciatica, in jaundice from calculus; for in such constitutions fever soon comes on, from the causes of inflammation, and proceeds with rapidity to some of its most dangerous terminations.

Fevers of every kind in the young, the strong, and plethoric, are supposed to call for the use of this remedy; but we have already shown the dangers of such indiscriminate conduct. We should not have spoken of this practice distinctly, for, in fact, it has been already noticed, except to guard against what we think a radical and widely-extended error. We remember the former Dr. Gregory, than whom no man was more accurate and cautious, speaking of bleeding as safe, and often useful, in the beginning of all fevers, if the patient were young and strong. Dr. Cullen, the antagonising spring to every part of the Boerhaavian practice, was led to the same plan from his system of reaction. Both practised in a northern latitude, where it was not considerably injurious; and without noticing this distinction, disseminated, we fear, a dangerous mode of proceeding. Brown was led to violent indiscriminate bleeding in his revival of the methodic system, and he could not discover his error, as he had little experience. His pupils have unfortunately not always been enlightened by their errors.

If, on the principles laid down in the beginning of this article, we consider the use of phlebotomy in distinct diseases, we must begin with FEVERS, and, of course, with INTERMITTENTS. In these, bleeding is seldom useful. The effects of relaxation may appear to indicate it in the hot fit to bring it sooner to a conclusion; but we shall gain little in our ultimate object, the cure of the disease by preventing the return of the paroxysm. If, however, the delirium in the hot fit is violent, if the circulation is so rapid as to endanger hæmorrhage in persons predisposed to an hæmoptoe, bleeding will be necessary to prevent the occurrence of such an event. In general, however, it is unnecessary; and evacuations, with low diet in the interval, and opium on the access, or near the termination of the heat, will conduct the paroxysm more safely to its conclusion. In those irregular intermittents, which attack with local inflammation, it may be useful in the same view; but the great object is to prevent the return. Those which attack with syncope and apoplexy also sometimes require it.

Remittents are seldom of the inflammatory kind; but these are the fevers in which the American practitioners have bled copiously. The principles, however, on which this practice rests have been often mentioned.

Continued fevers of the inflammatory kind, with the limitations lately stated, certainly require bleeding, particularly as we have remarked that local inflammations often begin with fevers, which show no tendency to the subsequent complaint. The great difficulty arises from asthenic fevers often beginning with inflammatory symptoms, and our former distinctions must be here applied. In cases of the slightest doubt it is better to abstain; for it is an error that may be remedied: its opposite cannot. When local affections arise during the continuance of a fever, we must first examine if the disease be such as, in its progress, might be attended with inflammatory congestions. If it be, we must inquire whether any marked exacerbation has taken place, whether the pulse has become suddenly full and strong, the eyes red, and the face flushed. If the circumstances are such as to afford the slightest doubt, we may employ topical bleedings; and if still more doubtful, a blister. In other circumstances the camphor with opium will very effectually relieve.

In the *phlegmasiæ* we find this remedy most generally necessary, and have already explained the foundation of its use in the article INFLAMMATION, q. v. The great object is to relieve the general affection, the diathesis phlogistica, which is shown by a remission of the hardness of the pulse, and some relaxation of the surface. The topical affection may in this way be alleviated; but the evacuations would be much too copious were they continued till it was removed. This purpose topical bleedings and blisters will supply. The discharges of blood in these cases were formerly enormous. From altered manners and constitutions, such considerable bleedings are now neither necessary nor useful; and under the articles PERIPNEUMONIA and PLEURITIS

we have pointed out the utmost extent to which they are at present practised. With a view to facilitate this discussion, we attempted (see INFLAMMATION) to arrange the phlegmasiæ according to the violence of the inflammatory diathesis, and consequently to point out the comparative necessity of bleeding. Some practical doubts may arise respecting gastritis, enteritis, and a few others, where late practitioners, particularly Dr. Pemberton in his very valuable work on the Diseases of the Abdominal Viscera, have carried the evacuation farther than we have proposed in the separate articles, supported by the observation that the pulse rises on bleeding; but, in general, we have offered what has been the result of our own practice. In this second class of active inflammations we have not often seen a second bleeding necessary; but, in a robust, strong constitution, where the pain continues violent, the pulse firm, full, and strong, a second and a third are sometimes required. We have seen enteritis requiring bleedings as copious as pleurisy. In medicine there are no universal propositions

In the *erythema* (for we must now take leave to follow our own arrangements) bleeding is highly injurious, if we except the peritonitis puerperarum, where it has been employed, it is said, with success. But this subject we shall soon resume in the article PUERPERALIS FEBRIS, q. v. In *catarrhus* the extent of the remedy must be proportioned to the violence of the fever, but this is seldom considerable, and in very few instances is the loss of blood requisite. When coryza becomes peripneumonic, or when dysentery threatens enteritis, it may be admissible; but either happens very rarely. In phthisis, as we shall soon find, it is not an appropriate remedy. Of the species of *arthritis* rheumatism only requires bleeding, and this is often necessary to a considerable extent in all its varieties. Indeed no disease in many cases demands larger and more repeated evacuations. Even in arthrodynia, from the violence of the pain, it is occasionally necessary; and some practitioners employ copious bleedings on the accession of gout. We have known instances in which they have lessened the fit repeatedly, without injuring the constitution; but we dare not recommend the imitation of the practice, especially in the weaker or more irritable habits.

In the *exanthemata* (order *eruptiones*) it is only adapted to the epidemic exanthemata; and from among these we must except all but the *variola* and *rubeola*; for of the *pestis* we have lately spoken. In the former it is only used in excessive inflammatory action, with a determination to the head. In the latter, from its peripneumonic tendency, it was formerly supposed to be the principal remedy, and especially in the diarrhœa, which often follows. Since, however, we have learnt the good effects of laxative medicines, we have found bleeding less necessary, and have indeed very few cases which have required it.

In the *profluvia* the use of this remedy is confined to the *active hæmorrhages*, those discharges which agree with phlegmasia in their connection with increased activity and tone in the arterial system; and in these at times it must be employed to a considerable extent; for the more rapid evacuation diminishing the tone of the arteries and the tension they impart to the nervous system, brings on fainting, during which the hæmorrhage stops, and the ruptured vessel heals. We have said that some increased action occurs in even the passive hæmorrhages; and bleeding has sometimes been directed in these, or at least in cases which partake of the nature of each.

In the genus *constrictoria* (order *suppressorii*), asthma only, at times, requires this evacuation; but it must be confined to the strong and plethoric, where there is danger of violent inflammation, or of immediate suffocation. The usual conduct of practitioners, in this respect, we have already noticed. The *suppression of sanguineous evacuations* sometimes depends on spasm, from increased inflammatory action; and when a suppression of the menses, the lochia, or of the hæmorrhoidal discharge, is attended with great load, a flushed face, and other symptoms of inflammatory fever, bleeding is essentially necessary. It should not, however, be hastily employed, or frequently repeated; for it soon becomes an inconvenient, if not a dangerous habit. In *icterus*, *ischuria*, and *dysuria*, it is only useful when the pain is attended with fever, and inflammation is threatened, or has come on.

Adynamiæ. In the genus *coma*, violent apoplexy and palsy, depending apparently on active hæmorrhage, alone require bleeding. It has been lately advised in the variety styled *hydrocephalica*; but the practice is confined to a few individuals only: and we have not found that it has been eminently successful, though perhaps suggested by the early appearance of irritation. In the variety of syncope, from affections of the heart, small bleedings have been sometimes repeated with success

Spasmi. In this order also it is scarcely ever employed but in the more violent convulsions of the plethoric and robust, to prevent the consequences of too great determination to the head during a paroxysm; in *pertussis*, for the purpose of avoiding peripneumony, when it impends; in colica, to prevent inflammation; and in hydrophobia, from an idle theory. The few diseases which remain we shall mention, without any attention to arrangement, in their order. In *hallucinatio* it is sometimes beneficial to lessen irritation; in *mania*, when the determination to the head is violent and apparently inflammatory; in *hydrothorax*, as a temporary expedient to prevent suffocation; in the various *herniæ*, to prevent inflammation, sometimes to produce deliquium; and in all violent *wounds* and *contusions*, for the former purpose.

We have mentioned bleeding generally in convulsions, to prevent determination to the head; but in one disease of this kind, the convulsions of puerperal women, it has been employed with little reserve, and, we may add, little discretion. It sometimes appears at first to relieve; but there are few practitioners who have adopted this plan but have regretted, in the sequel, the loss of that strength which they were unable to restore.

Bleeding has been also recommended to preserve health, and the custom of letting blood regularly in the spring is not yet quite obsolete in the county where the author of this article resides. In females, at the cessation of the menses, it is sometimes empirically employed, and occasionally to procure abortion. It were well if no more active means were used; for this is totally ineffectual. On any sudden terror and surprise it was formerly employed, apparently to prevent any irre-

gular determinations to the different parts, or probably accumulations in the heart: in such cases it is at least not injurious.

When we treated of the BLOOD, q. v. we described its constituent parts, and their spontaneous separation. It appeared that the buffy stratum on the top was not the effect of viscidity or lentor, but owing rather to tenuity of the blood, which allowed the red particles to fall down before the gluten coagulated. This sometimes arose from a more intimate mixture of the parts of this heterogeneous mass, sometimes, as in scurvy and typhus, from a real tenuity. Since this sign, however, has been greatly depended on, it is necessary to make some distinctions which will render it less equivocal.

As this appearance is owing to the time in which the coagulation takes place, it is necessary to ascertain its existence, that the blood should not be too quickly or too slowly cooled. Blood does not coagulate readily in cold or in warm weather. Either extreme, therefore, should be avoided. It coagulates more rapidly in small masses, and when exposed with an extensive surface: it should consequently flow freely from a large orifice, not drop from the arm, and be received in vessels of a moderate depth, and of no large surface as a teacup. The bleeding dishes of our ancestors were too wide and shallow. The blood would too often appear buffy; and this may have been among the reasons for the frequent repetition of bleeding.

A circumstance which formerly appeared inexplicable, will on these principles be easily accounted for. In inflammatory diseases the first drawn blood was not buffy. The second teacup, or the second discharge, was covered with a crust. In such cases the pulse labours, and is oppressed with the load: though the fever is considerable, the face flushed, and the pain, for instance, in the side violently acute, the pulse continues soft, and not peculiarly strong. From considering the constitution, the cause, and other circumstances, bleeding may appear indicated, and in such cases the first cup appears natural. When the load is removed, the pulse becomes fuller and stronger, the circulation more free, and the heterogeneous ingredients more intimately mixed; of course the blood becomes buffy: and though there is sometimes no time for the production of this change in the first bleeding, it is constantly found when the operation is repeated.

This increased fullness and strength is the change expressed by the language, that the pulse rises on bleeding. It is followed by a relief of the load, a remission of pain, a diminution of the burning heat, and the appearance of a gentle moisture on the surface. But because one bleeding has relieved it does not follow that the operation must be repeated. We must take advantage of this remission to procure a continuance of the favourable change by other means (see FEBRIS and INFLAMMATIO), nor again repeat the operation, unless the former symptoms of diathesis phlogistica recur. On the contrary, if the first bleeding has been injurious, languor, paleness, a rapid, weak, and almost indistinct pulse, with frequent returns of syncope, are the consequences, indicating a state of debility, which, in many cases, we cannot conquer. Bleeding should, therefore, be employed with caution.

Blood is usually taken from the subcutaneous veins in the flexure of the fore-arm. It is sometimes drawn from the jugulars, sometimes from the saphæna in the leg, and in a few instances from the veins in the back of the hand. The last part is selected from necessity only, as the veins of the arm are sometimes very small. Blood is taken from the jugulars in children, as the vein is large, and will admit of a rapid depletion; but the chief advantage supposed to be derived is from the vicinity of the parts affected. In affections of the head a discharge from the jugulars appears to combine the good effects of a general and a topical evacuation; but in diseases of the throat it seems to possess no very striking advantage, except from the size of the vein in children. We are not aware that it produces faintness more quickly than when the blood is taken from other veins. Bleeding from the saphæna is a branch from the obsolete stock of derivation or revulsion, where an evacuation at a distance was supposed to have an effect greater in proportion to the distance. Had the mechanical physicians, with whom this was a favourite doctrine, employed their mathematics, they might have soon found it less. In uterine complaints the choice had a better foundation, as to lessen the quantity of blood in the lower extremities would probably assist the circulation through every branch of the descending aorta; but it would have been more reasonable had practitioners used it in abundant rather than deficient menstruation.

The operation itself has been detailed with a formality which would be only excusable in describing that of lithotomy, or dividing the ring of the abdominal muscles for the reduction of hernia. We shall suppose the minutiæ known, and notice only the more important circumstances.

The ligature should be moderately tight, so as to stop the circulation in the veins, but not in the artery, which should be felt at the bending of the arm, after the ligature is applied. When the veins have swollen, the operator, with a spear-shaped lancet, which is preferable, since it makes the wound of the integuments scarcely larger than that of the vein, divides the skin, and immediately plunges the lancet into the vein itself, in an oblique direction, to prevent its passing through the inferior parietes of the vessel. In general, the operator chooses the vein most remote from the artery or tendon; but should no such be found of a proper size, it will only require a little additional caution. He should, in that case, press his lancet only so low as to be sure of wounding the vein, and then divide it in a direction more near to a horizontal one. Veins that do not roll are preferred; but this is an useless refinement, since it is necessary to confine the vein a little below the part where the puncture is made by the thumb of the left hand.

When the blood begins to flow, the posture of the arm should not be changed, as it may occasion the wound of the integuments no longer to coincide with that of the vein, so that the position should at first be an easy one, that is, half bent; and the operator, if he sees that the apertures do not coincide, can easily draw the skin, so as to correct the error. If the blood stops from faintness, fresh air and a horizontal posture will restore the flow: if from too tight a ligature, it should be gently slackened. Moving the muscles of the hand by rolling any thing in it promotes often the discharge. After the operation, a bit of lint, with some sticking plaister,

is only necessary, unless the orifice has been large, or the bleeding has appeared to continue after the ligature is removed. In that case the usual bandage with a compress is necessary. In the choice of veins the median basilic is usually preferred, as the largest, nearest the surface, and the integuments are thinnest over it; but it must be recollected that the artery often lies under it, so that, though bleeding is less painful, the danger is greater.

Simple, however, as this operation is, various inconveniencies, and some very dangerous affections, often follow it. The tendinous aponeurosis of the biceps passes under the integuments, and though this is thinner over the median basilic than the other veins of that part, wounds in it seem to produce inconveniencies. The tendon also of the muscle is sometimes punctured, and occasionally a subcutaneous nerve wounded. The pain sometimes immediately felt on the introduction of the lancet is probably, as we shall soon find, caused by a wounded nerve; for the tendons, in a sound state, are insensible, and in *every* instance of bleeding the aponeurosis is necessarily cut. When, however, the acute pain just mentioned does not soon recede, but continues to increase, there is always reason to fear the most disagreeable consequences. The wound inflames, its lips become sore and hard, and, after a few hours, a watery serum or a bloody sanies oozes from them. After the continuance of these symptoms for a few days, with little variation, the acute pain is changed to a burning heat, which increases to a very violent degree. The lips of the wound swell still more, and the tumour is communicated to the whole limb, which at last appears erysipelatous. The pulse then becomes hard and quick, the pain is intense, the patient restless, and subsultus, convulsions, or a locked jaw, close the scene.

Events so distressing, from causes apparently inadequate, have excited the attention of pathologists, who have hitherto laboured with little success to explain them. The original idea was, that the wound of the tendon occasioned all the subsequent distress. In vain was it alleged that tendons were insensible, that nerves could not be traced to them, that they must be cut and wounded in a variety of operations, as well as by numerous accidents: equivocal facts were still produced in opposition, nor, till within a few years, was it concluded that such consequences could not arise from any wound of these organs. A partial wound of a nerve often produced similar complaints; and nervous irritation was the forerunner of the inflammation and the spasm. In this state of contending opinions, Mr. Hunter, active and ingenious, though occasionally whimsical and eccentric, suggested a very different cause. He had found in horses, who died in consequence of venesection, the internal surface of the vein inflamed, and similar effects had occurred in the human frame. Air then admitted into the cavity of the vein was followed by inflammation, and its usual attendant suppuration, while the pus, thus mixed with the blood, produced all the symptoms of irritation. Without doubting the facts, we may, however, arraign the consequences. The access of air to the coats of the vein is at best improbable, since it always continues full; but, if admitted, the pungent pain at first, the rapid appearance of the inflammation, and its progress, precludes the idea of a cause always slow, and, in general, gradual in its effects. If still allowed, symptoms of nervous irritation do not follow the absorption of pus, and a locked jaw is never the consequence of absorbed purulent matter. In fact, all the circumstances coincide in the idea of a nervous irritation, from a wound in the medullary organ; and, from the facts adduced, we must admit that an inflammation of the internal surface of the vein is a frequent consequence of this irritation.

The remedies usually advised for this complaint seem to be in part derived from the idea of an inflammation on the internal surface of the vein. Their operation, however, equally admits of another explanation. When an unusually acute pain is felt in the operation, which does not subside in a few hours, the arm should be kept in a perfectly relaxed state; emollient poultices, which would perhaps be rendered more effectual by the addition of opium, applied; the patient's diet be low; a large dose of opium given, followed soon afterwards by a purgative. If the pain still continues and the inflammation of the wound increases, leeches, near the part, are recommended, with a liberal bleeding from some other vein. In this state warm emollient applications often increase the heat as well as the pain; and the sedative astringent ones afford most relief, particularly solutions of vitriolated zinc applied cold, and Goulard's cerate. Applications of opium seem not to have been sufficiently tried, and no case of this kind has occurred in our practice to enable us to speak for ourselves.

When the symptoms, however, have increased to a dangerous degree, opiates have been given freely, and every means of allaying irritation attempted; but these means have been usually found inefficient, and the only alternative is dividing all the subcutaneous nerves above the wound, or an amputation of the limb. In this case the wounded vein must be tied above and below, and the intermediate part cut out. If then we dissect down to the tendon of the biceps, and a little on each side, the injured nerve, if such has been the cause, must have been divided. Amputation is, however, our last resource; and it would probably have been more often effectual if attempted earlier.

It must not, however, be concluded that every inflammation of the arm, or the neighbouring parts, after bleeding, is so dangerous and fatal in its consequences. A phlegmon will sometimes form on the part from an inflammation of the cellular substance, and this inflammation in many instances becomes erysipelatous. Each is removed by the common remedies, and, after the suppuration, the coat of the vein is found to be free from induration: its substance was never affected.

We have observed, also, that inconveniencies have arisen from the wound of the integuments not perfectly coinciding with that of the vein. The consequences have been, that the blood has passed into the cellular substance, and enormously distended the arm. The sudden appearance of this distension, and the absence of acute pain, sufficiently point out its cause, and the little comparative injury to the constitution likely to result. If from want of caution the lancet is plunged *through* the vein, the injury is more considerable, and mortification has been the consequence. The coagulation of the blood, however, opposes a sufficient

obstacle to the discharge; but the blood itself must be removed by an operation, sometimes the wounded portion of the vein cut out.

Among the accidents from bleeding, an irritation and a consequent inflammation of the absorbents have been enumerated. These vessels we know to be muscular, and they become, by inflammation of their coats, hard and acutely sensible cords. Inflammations of this kind are distinguished from those which arise from the absorption of acrid matter, from the glands not always enlarging, and from the hardness being felt below as well as above the source of the disease: sometimes indeed the gland is affected; but the pain is greatest at the first appearance of the tumour, and it has little tendency to suppurate.

Though inflammation of the vein be not the cause of the dangerous symptoms before enumerated, it certainly sometimes takes place, at least as an effect, and Mr. Abernethy has recorded three cases of the kind. The symptoms of general inflammation were considerable; but the disease yielded to common remedies. The sides of the vein apparently adhered above and below. Our author advises a compression on the vein above, to assist this adhesion, since inflammation is speedily communicated along membranes, and may otherwise extend to the heart, of which, if our memory does not fail us, we recollect one or two instances.

A consequence of bleeding not sufficiently discriminated, in the general systems, is the injury which the tendon of the biceps receives from a puncture. The effects of such a wound would alone disprove the symptoms formerly attributed to it; for they are very different. The general distinguishing symptom is the sensation of a cord bound tightly round the arm, with an inability to move it. This seems in some instances to arise from matter confined under the aponeurosis; and in one case an opening made at a small point, near the external condyle, discharged a considerable quantity of pus, by which the patient was immediately relieved. At other times, however, this sensation of tightness really arises from spasm. We know that the tendons are incapable of contracting; but they seem to communicate irritation to the muscular fibres, by which contraction is excited. In the case recorded by Mr. Colby (Medical Communications, vol. ii. p. 18.) there was no suppuration; and in those described by Mr. Watson, though an obscure sense of fluctuation was communicated to the finger, there was no purulent matter. The latter seems to attribute the contraction to a thickening of the aponeurosis from inflammation; but the symptoms, from the description of the patient, evidently points out the source to be a spasmodic contraction; and it is highly probable that as this has occurred in so few cases, while the aponeurosis must be divided in every operation, that a nerve distributed on the tendon was wounded. In the first case an incision was made between the brachiæus internus and supinator radii longus (Medical Communications, vol. ii. p. 256), where an obscure fluctuation was seemingly felt. Various other incisions were tried with little effect, till one was made into the middle of the biceps, carried deep into the body of the muscle down to the tendon, in the direction of the fibres, and so low into the latter as could be done with safety. The relief was immediate, and continued.

In all such cases it seems that opiates have not been tried to a sufficient extent, if we except that recorded by Mr. Colby of Torrington, and his success seems owing to his bold and very judicious exhibition of this remedy. Opium would be apparently useful, not only internally but as an external application, and we could wish that in future events of this kind it might be tried.

We recollect only one other accident from bleeding, viz. the wound of a lymphatic. It continues to discharge lymph for a few days, but is soon cured. At least a watery solution of sulphurated copper will produce this effect. See CUCURBITULA and HIRUDO.

On the subject of blood-letting, see Galen de Sanguinis Missione; Botallus de Venæsectione; M. A. Severinus on Bleeding; An Essay concerning Blood-letting, by R. Butler, M. D.; Bell's Surgery, vol. i. p. 63, &c.; White's Surgery, p. 16; Abernethy's Surgical Essays; Mr. J. Hunter's Works; Medical Communications, vol. ii.

PHLEBO'TOMUS (from φλεψ, *a vein*, and τεμνω, *to cut*). A LANCET, or a FLEAM, for bleeding.

PHLE'GMA, (from φλεγω, *to excite*). PHLEGM, a mucous or excrementitious fluid discharged from the bronchiæ. Galen gives this denomination to every cold humour: in Hippocrates it often signifies inflammation.

In chemistry phlegm signifies the water obtained by distillation.

PHLEGMA'SIA. See INFLAMMATIO.

PHLEGMA'TIA, (from φλεγω, *to burn*). See ANASARCA.

PHLEGMA'TIA DOLENS. See LYMPHÆDUCTUS.

PHLEGMATORRHA'GIA; (from φλεγμα, *mucus*, and ρεω, *fluo*). A discharge of thin phlegm from the nostrils. See Salmuthus, obs. 37.

PHLEGMO'NE, (from φλεγω, *to burn*). See INFLAMMATIO.

PHLEGMO'NE ARTICULI. See ARTHROPUOSIS.

PHLEPS, (from φλεω, *to abound*; because it is filled with blood). See ARTERIA.

PHLOGI'STICI, (from φλογιζω, *to burn*). Inflammations, and fevers, with a hard pulse and topical pain.

PHLOGI'STON, (from φλογιζω,). INFLAMMABLE PRINCIPLE, on which the ignition of all bodies was supposed to depend. The existence of this element was first asserted by Becher, an opinion adopted by Stahl, and since by other chemists; but the late discoveries of Lavoisier and others have wholly disproved its existence. The opinion since the death of Dr. Priestly has not one scientific advocate; and the addition of oxygen is now established to explain all the changes attributed to the separation of phlogiston.

See on this subject Lavoisier's, Chaptal's, and Fourcroy's Elements of Chemistry. In Mr. Nicholson's Elements the reader will find the fairest representations of both theories, as applied to different processes.

PHLOGO'SIS, (from φλογοω, *to inflame*). See INFLAMMATIO, and ÆSTUS VOLATICUS.

PHLO'MIS, (from φλοξ, *a flame*; from its flame-like colour). See SALVIA SYLVESTRIS.

PHLYCTÆ'NÆ, (φλυκταιναι, *small bladders*, from φλυζω, *to be hot*); *holophlyctides*, *phlyzacion*, applied by

Linnæus and Vogel to *hydatis*. (See BULLA.) Pustules on the tunica cornea of the eye, including the *unguis* and *phlyctenæ*, strictly so called: when they arise in the conjunctiva they are reddish at first, and afterwards white; but when on the transparent cornea, dusky, at last white. Their seat is usually under the external coat of the cornea, and they have been cured by taking off its external lamina, to remove the stagnating matter. They are generally occasioned by inflammation, and should be dressed three or four times a-day with six or eight grains of cerussa acetata, dissolved in three ounces of aq. rose-water, and, when they yield, washed with equal parts of brandy and water. If they neither disperse nor break speedily they must be opened with a lancet, and dressed with the aqua saphirina. Little watery pustules, full of a hot acrid fluid, are styled *phlyctenæ*; but we shall consider this complaint under the two following articles, q. v.

PHLY'CTIS, (from φλυζω, *to be hot*). A watery pustule or eruption on the skin, with a circular base slightly inflamed, containing a lymph, sometimes clear and pellucid, but more frequently whitish, like whey, or pearl-coloured. The pustule terminates in a laminated scab. Under this head may be ranked the hydroa or hidroa, boa, and sudamina, of authors.

PHLYXA'CION, or PHLYZA'CION, (from φλυζω, *to be hot*). A pustule or vesication on the skin, excited by fire or heat. Dr. Willan defines it a pustule (the size of a pea) containing pus; and raised on a hard, circular, inflamed base, of a vivid red colour. This disease seems to be only a greater degree of phlyctis, and each may be readily understood by what has been observed under MORBI CUTANEI, q. v. It is succeeded by a thick, hard, dark coloured scab.

PHŒNI'CIUS MO'RBUS. See ELEPHANTIASIS.

PHŒNI'GMOI, (from φοινισσω, *to become red*). See EPISPASTICA.

PHŒ'NIX, (from *Phœnicia, its native soil*). See LOLIUM.

PHOS, (from φαω, *to shine*). LIGHT. See PUPILLA.

PHO'SPHATS, (from *phosphorus*). Salts formed by the union of the phosphoric acid with different bases: those with the phosphorous acid are called *phosphits*.

PHOSPHORIC ACID. (See CHEMIA.) It has, we observe, been used in hectics, and as a tonic in cases where mineral acids have been recommended. Though found, however, in the mineral kingdom, we would rather consider it as an animal acid. It occurs in the blood, in the bones, in the enamel of the teeth, and the gluten of seeds, particularly of maize. The Bolognian stone is the radiated sulphurated barytes. Haüy, ii. 332.

PHOSPHO'RUS, (from φως, *light*, and φερω, *to bring*); *autophosphorus*, the name of a collyrium in Galen. Phosphorus was first discovered in 1669 by Brandt, but kept as a secret, and in 1674 by Runckel, and afterwards by Boyle, from whom it was called the English phosphorus, as it was supplied by a London apothecary, to whom he taught the secret. It is an oxide originally prepared from urine; nor was it discovered till the year 1769 that its acid was contained in bones. For its chemical properties, see CHEMIA, vol. i. p. 420.

It was given many years since, according to the account of Hankwitz, the apothecary to whom Boyle communicated the secret, in France, in colics; afterwards by Mentz in low fevers, as a cordial and sudorific; and by Le Roi, in rheumatic and nervous diseases. It is, however, a medicine of considerable acrimony, and, from Le Roi's experiments, highly dangerous (Memoirs de la Societé d'Emulation, vol i.). He found the most painful and distressing effects from three grains of this oxide, though it is the dose given by Mentz in petechial fevers as a cordial. Wackard has cautioned us by relating the dangers and inconveniencies which resulted from its use. A similar case is recorded in the Medical and Physical Journal; and others might be offered from the records of private practice.

The exhibition of phosphorus is not an easy task. It must be reduced to powder, but the slightest heat inflames it. If put into warm water, and agitated, it diffuses itself like oil, and, on the sudden affusion of cold water, is precipitated in a powder. This may be rubbed with mucilage into a lohoc, with powder of gum-arabic into pills; but, camphor, in general, assists its union. A quarter of a grain is now considered as a sufficient dose. The exhibition of phosphorus has again of late been attempted in the cure of rheumatism; but it is a remedy so truly dangerous, that we should earnestly dissuade any future trials.

Combined with soda it is a tasteless neutral, recommended by Dr. Pearson as a laxative for children, and highly useful in their complaints. The other phosphats have not been used, except the phosphorated mercury, which we noticed vol. i. p. 170, and the phosphorated and oxiphosphorated iron, lately recommended in cancer by Dr. Carmichael, of Dublin. See BONONIENSIS LAPIS.

See the different processes in Chaptal's Elements of Chemistry, vol. iii. p. 350, &c; Thompson's Chemistry; Fourcroy's Chemistry, ix. 245.

PHOSPHO'RUS BONONIENSIS, and KIRCHE'RI. See BONONIENSIS LAPIS.

PHOSPHO'RUS LI'QUIDUS. One grain of the phosphorus, in powder, cautiously mixed with ten of camphor, dissolved in the oleum caryophyllorum, make a liquid phosphorus, which may be rubbed on the body without danger of inflammation. It is chiefly used as an amusing experiment, since it is luminous in the dark.

PHOSPHU'RETUM, (from *phosphorus*). PHOSPHURET. Combination of phosphoric acid, with different bases. (See PHOSPHATS.) In these the oxygen is in a still less proportion.

PHOTOPHOBIA, (from φως, *light*, and φοβεω, *to dread*). Too great sensibility of the retina, either from inflammation, increased nervous sensibility, as in hydrophobia, or from a disuse of light.

PHO'XOS, (φοξος). The sugar-loaf-shaped head.

PHRA'GMOS, (from φρασσω, *to inclose*). An anatomical term for the double series of teeth.

PHRA'SIUM VI'RIDE. See ÆRIS FLOS.

PHRE'NES, (from φρην, supposed to be the seat of the mind). See DIAPHRAGMA.

PHRENE'SIS, or PHRENETI'ASIS, (from φρενες, *the diaphragm*). See PHRENITIS.

PHRE'NICÆ ARTE'RIÆ, and VE'NÆ, (from

the same). See DIAPHRAGMATICÆ ARTERIÆ, and VENÆ.

PHRENI'SMUS. See PHRENITIS.

PHRENITI'CI NE'RVI. The nerves which run in the diaphragm. See NERVI.

PHRE'NITIS, (from φρενες, *diaphragm*), *cephalitis*. Phrenitis was formerly supposed to arise from inflammation of the diaphragm, which was called *phrenes*, as if assistant to the intelligent principle. The term is now applied to an inflammation in the brain, or rather its membranes, with a violent delirium, and an acute continued fever, named *cephalalgia inflammatoria*; by the Arabians *karabitus*; by the Greeks *phrenesis*, *phrenismus*, and *sphacelismus*. Dr. Cullen places this disease among the *phlegmasiæ*, defining it a violent febrile affection, attended with pain of the head, redness of the face and eyes, incapability of bearing light and sound; pervigilium; fierce delirium; and typhomania.

It is idiopathic when the head is primarily affected; and symptomatic when the morbid affection is translated to the head, from some other part, as from the side in pleurisy. The former is inseparably accompanied with an acute fever; the latter is followed by the fever, and styled *desipientia*.

The idiopathic is rare; but the symptomatic is sometimes met with, and most frequently appears about the crisis of other fevers, attended with a rigor, a tremor of the joints, tension of the precordia, coldness of the extremes, thin urine, discharged either in too sparing or too large a quantity. The symptomatic phrensy scarcely differs even in degree from the idiopathic.

An approaching phrenitis is announced by intense continual watchings: or, if the patient sleeps, his sleep is interrupted and troubled; he starts, and is affected with terrible dreams; soon forgetting what is said. If at any time he returns an answer to a question, his fierceness and anger seem to be increased; the pulse is small and hard, a pain is constantly felt in the occiput, and as the disorder increases the eyes become more fixed and red, tears, at the same time, flowing from them. The phrenitis is marked by an acute fever, a pulse low and tense, sometimes hardly perceptible; but in most instances full and strong. The sleep is disturbed, the delirium violent, with noise in the ears, and excessive headach. The tongue is dark and black; the urine high-coloured, and in small quantities.

In many instances the violence of these symptoms is less; and unsteadiness, want of recollection, tremblings of the limbs, are the principal symptoms. In short, if there is a distinction between an affection of the membranes and the substance of any part, it appears to be found in the brain. Thus the *membranous* or *parenchymatous* inflammation of nosologists is established; and though the distinction in some respects takes place, yet it is not fully ascertained by dissection, nor is it universally applicable.

The principal distinction necessary to point out is that of phrenitis from mania. The sudden attack of the former, the violent fever, and an evident exciting cause, will, however, be sufficient for this purpose; but the second variety noticed is distinguished with more difficulty. If, however, the symptoms be carefully examined, neither false perception nor erroneous judgment will appear, and the whole complaint be found to consist in weakness and unsteadiness of mind, in confusion, when the intellectual powers are exerted, a want of memory, and a difficulty of discrimination. We have known a man, from this disease, not able to count five in succession for many months.

But while phrenitis appears in these two distinct and opposite forms, various affections of the head have been attributed to it, and treated like true inflammation of the brain. In various articles, particularly in CONCUSSIO, we have pointed out the difference between active inflammation from increased action, and a similar state from atony and congestion. At the end of fevers an increased fullness of the vessels is found, and each state has been styled inflammation of the brain. Yet the causes, the symptoms, and the cure, are essentially different. It is necessary, therefore, to limit the *true phrenitis* to the active inflammation, with increased action of the vessels, depending on phlogistic diathesis. Of this then we must first treat; and we shall next point out the distinction between the two states, with the variety of conduct which the symptoms suggest.

The remote causes are those of inflammation in general, cold topically applied after great heat, or cold liquors incautiously drank when heated: violent excitement from excess, particularly excess in drinking spirits, is sometimes also a cause. Those subject to the disease are the strong, the robust, and the plethoric; and it seems that the predisposition is hereditary. The treatment is nearly the same as of general inflammation. As resolution is, however, the only safe termination, bleeding is an indispensable remedy. From its effects, as explained in the article PHLEBOTOMIA, q. v. it will appear peculiarly applicable to this disease, as it lessens the tension of the nerves by most powerfully diminishing that of the arterial system. Even general bleedings, however, carried to their utmost extent, will not always succeed. Fainting sometimes takes place, while the increased tension continues, with little diminution; and topical bleeding must supply its place. It is recommended to bleed in a standing posture, that faintness may be more readily induced. This is, however, a mistaken direction. Fainting is the impediment to a sufficient bleeding, and the contrary direction has better foundation. Bleeding from the jugulars, as has been explained, seems better adapted to the complaint; but in this climate the disease is seldom so acute as to require these extreme measures. In aid of general and topical bleeding by leeches or cupping-glasses, *blisters* are generally necessary; but as cold applications to the vertex are peculiarly useful, the blisters should be first applied to the nape of the neck, and afterwards behind the ears. The head may then be shaved, and cold oxycrate constantly applied to the vertex. The cooling saline purgatives should be given freely, so as to produce copious watery discharges, and nitre in as large doses as the stomach will bear. The room in which the patient lies should be cool and airy, not too light. When this plan has been adopted for a short time, if the delirium be not relieved, the disease is at least brought to that second stage which we must next consider.

The milder delirium, already described, depends on the more languid inflammation, probably in the substance of the brain, and, as we have suspected from dissection, chiefly at the base of the cerebrum. Different degrees of this form of the disease are owing to sup-

pressed evacuations, sometimes of the menstrual, at others of the hæmorrhoidal, discharge; occasionally to repelled eruptions and gout, though each occasionally produces a degree of phrenitis of a more violent kind, particularly in those constitutionally predisposed to it. Yet even in its greatest violence it must be distinguished, since the very active remedies of the former variety are unsuitable to the present. The inflammation from CONCUSSION, q. v. is of this kind, as well as from ICTUS SOLARIS, q. v. and require the milder plan of cure.

General bleeding is not always necessary, and then not to a great extent. Its degree must be limited by the violence of the symptoms, particularly the delirium. Topical bleeding is more useful, but by no means always necessary; and blisters are better adapted, by a slow, steady discharge, to lessen the accumulation. Each, as general bleeding, must be proportioned to the delirium. The camphor, with nitre, is often useful; and a steady discharge from the bowels equally necessary. The coolest free air, rest, with the utmost tranquillity of mind, are indispensable. When the accumulation is removed, its effect, unsteadiness of mind, often continues. This is sometimes supposed to be owing to remaining inflammation, and the violent evacuations are, with little discrimination, employed: a plan which increases instead of mitigating the disease; for it depends on the too great previous excitement. We have found no mode of conduct particularly serviceable, except absolute rest of mind, with moderate exercise of body. The camphor, bark with valerian, and some other medicines of this tribe, with cold bathing, and gentle alvine evacuations, seem occasionally to have contributed to the relief; but from time alone a cure may be expected.

See Alexander Trallian; Cœlius Aurelianus; Ætius; Willis's Pathologia Cerebri, cap. x.; Hoffmann; Boerhaave; Baglivi; Fordyce's Elements, part ii.; Cullen's First Lines, vol. i. p. 272, edit. 4; Bell's Surgery, vol. iii. p. 147.

PHRENI'TIS APYRE'TA. See MANIA.

PHRENI'TIS VOGE'LII. See SYNOCHUS.

PHRI'CASMUS, (from φρικη, *horror*). See HORROR.

PHRI'CODES, (from the same); *carcaros*, *querquera*. A fever described by the ancients, attended with horror, rigor, and tinnitus aurium, apparently a semitertian.

PHRY'CTE, (from φρυγω, *to parch* or *dry up*). See COLOPHONIA.

PHRY'GIUS LAPIS. The PHRYGIAN STONE, from its being used by the dyers in Phrygia, rises in Cappadocia, is pale and ponderous; but when calcined, reddish. Its virtues are similar to those of the lapis calaminaris; in fact, it is an earth of alum, and simply an astringent.

PHTHA'RTICOS, (from φθειρω, *to corrupt*). DELETERIOUS, DEADLY.

PHTHEIRO'CTONON, (from φθειρ, *a louse*, and κτεινω, *to kill*). See STAPHISAGRIA.

PHTHIRI'ASIS, (from φθειρ, *a louse*); *morbus pedicularis*, *pediculatio*, a rapid increase of lice, most frequent in warm moist situations. Besides the PEDICULI and MORPIONES, q. v. there is a kind which chiefly breed in dirty clothes. It is this species which forms the morbus pedicularis, as La Treille asserts; and it is this kind which probably at times burrows in the skin, producing violent itching, and from this cause even insanity. They are called *acari*, *cyrones*, and *pedicelli*; but it is probable that these are insects of a different kind.

A decoction of the seeds of stavisacre or coculus indicus, or the powder of either scattered among the hair every night, is an effectual remedy. The last is said to exceed all other means, and it may be mixed in lard, and applied every night to the hair. The pulvis corticis radicis sassafræ sprinkled on the head, and confined with a handkerchief, is said to destroy the lice in one night. The neatest and least offensive applications, however, are the mercurials. The white oxide, the mercurius precipitatus albus, may be easily disguised in pomatum, and is a certain remedy for the lice in the hair. The coculus indicus is equally effectual for those of the clothes.

The black soap and the flowers of the *cardamine pratensis* are said to be specifics in all cases of lice on the human body.

PHTHI'SIS, (from φθιω, *to corrupt*). This word, expressing generally *corruption* or *emaciation*, is commonly limited to those states which arise from a previous disease of the lungs; and the term *phthisis pulmonalis* generally means what is styled a consumption, sometimes distinguished by the term *pulmonary*.

Various distinctions of what have been styled species of this disease are found in authors; but we must consider it as one simple complaint from a known cause, viz. an ulcer in the lungs.

The ancients, aware of the cause, could not readily account for the difficulty of healing the ulcer. They found their boasted balsamics useless, and suspected that the constant motion of the organ destroyed the union as fast as it was formed. But we find wounds in the lungs heal with little difficulty; large abscesses, from other causes, even from peripneumony, often yield to common treatment, and the patient perfectly recovers; but when the disease approaches in the manner to be described, recovery is peculiarly rare. We have now probably ascertained the real reason, and must, with Dr. Cullen, attribute this intractable ulcer to the suppuration of a strumous gland, which, we know, heals with peculiar difficulty, for reasons to be afterwards explained. See SCROPHULA.

The disease is chiefly confined to the young, the fair with light skins and blue eyes, florid complexions, contracted chest, and high shoulders. In constitutions disposed to hectic, the fingers are often long, and the nails bent; they grow rapidly, but seldom expand in breadth and bulk. From the age of twelve or fourteen to that of about thirty-five is the hectic period; more generally from sixteen to twenty-four; and the tendency seems to return about forty-five or forty-six, especially in women at the period of the cessation of the catamenia.

This disease often attacks insidiously. The patient continues, as we have said, to increase in height without expanding at the shoulders and chest. He becomes languid, loses his appetite and spirits. He is supposed to have grown too rapidly, and the case is neglected, or supposed to be within the reach of the exertions of nature. In the mean time, a slight cough comes on, often only a slight heck, as if a little phlegm hung at the edge of the

epiglottis, which is generally disregarded. Yet, at this time if the state of the patient be carefully examined, the pulse will be found quick, and above eighty in the most favourable state; after meals, and towards night, more nearly 100. He will not be able to lie on one side with the same ease as on the other, and will experience slight chills. If in females these symptoms appear about the period of menstruation, the catamenia do not come on, and every inconvenience is attributed to this cause. Medicines are directed for this purpose, which are often injurious to the real complaint. Its approach is sometimes more rapid; and a neglected cold is followed by a slow fever, with a continuance of the cough, emaciation, &c. Peripneumony is sometimes followed also by hectic, but in constitutions only which are predisposed to it; for we have seen many cases of peripneumony terminating in abscess where the matter has been freely discharged, and the patient has recovered. The far greater number of phthises may be referred to neglected colds.

Another precursor of phthisis is hæmorrhage from the lungs. It often appears to be accidental, and is little noticed. The patient seems to recover perfectly; but it returns, and each time in a greater degree, leaving the strength more exhausted, and a slight fever, which soon comes on, more obvious. If hæmorrhage from the lungs often recurs, or continues for any time, however slight the discharge may appear, the danger is considerable.

After the state already described has continued for a few weeks, shooting pains are felt in the chest, sometimes wandering and uncertain in their seat, at others more fixed. It is difficult to fix the source of the pain; for the patient with the greatest dexterity eludes every inquiry. It is in the stomach, in the bowels, from wind, from indigestion, from straining of the cough, &c. When it is ascertained that the patient cannot lie with so much ease on one side as on the other, we may soon discover a pain in that side more fixed and constant than in any other part. Whatever be the difficulty which in cases of peripneumony attend the decubitus difficilis, there is little doubt in the present case. If there is a pain in the side, and the patient can best lie on it, the case is not phthisis. Even when these symptoms have increased to an alarming degree, there is often no expectoration; sometimes a little frothy sputum is discharged, at others a greenish mucus, like that which accompanies recent colds. After a little time, however, some spots of a more suspicious appearance are observed, and at last the spitting becomes decidedly purulent. In many cases of phthisis a caseous matter is discharged very early in the complaint, which curdles in water, while round the edges of the curd pus is often conspicuous.

At this time the chills, frequently observable at a very early period, are strongly marked, and followed by burning heat, terminated by a copious sweat. In fact, a true hectic fever is formed. The cough is now often incessant, aggravated by the access of fever; it is in the early part of the night almost incessant.

During the fever, the cheeks have a circumscribed spot of pure florid red; the lips and tubercles in the canthus of the eyes are also brighter than when in health. The fever is augmented after eating, particularly solids, with flushing in the face, and burning heat in the palms of the hands and soles of the feet. In the morning patients find themselves relieved, but rise languid, pale, and unrefreshed by their sleep. Though the pulse is always quicker than natural, yet there is a remission of the fever for some hours in the forenoon. The countenance now gives evident signs of wasting, the eyes are hollow and languid, the cheeks prominent, the nose sharp, the patient's flesh wastes, and the strength fails; the breathing is short, quick, and offensive; sleep little and disturbed; morning-sweats more profuse, and the interval from fever less distinct. The spitting is more loaded with matter, brought up more easily, and in greater quantity, sometimes a pint in twenty-four hours. The menses usually cease, when the hectic exacerbations are strongly marked. From the beginning the body is in general costive, particularly after the morning-sweats take place; but about this time also patients, from being costive, have frequent motions, and soon a confirmed diarrhœa; every thing taken into the stomach quickly running off by the bowels. The fever, heat, and cough, abate of their violence, and the morning-sweats become less profuse; but if the diarrhœa is checked, these return. The strength totally fails; frequent fainting at last comes on, sometimes a slight delirium; the sputum becomes of a dark brown colour, and sometimes sanious; the lower extremities swell, and at last death closes the scene.

The distinction of consumption, particularly in its early stages, is of great consequence; nor is it an object of small utility to point out its original source. At the age of about fourteen in each sex, while the genital organs are evolving, there is often a considerable debility and irritability. The debility in females, as we have seen (see MENSES), is often formidable, and a slight cough is no uncommon attendant. At this time phthisis may come on, and often does so, with little suspicion: all the symptoms are referred to the great change that then takes place. Similar states of languor are occasionally observed in males, and the same mistake often occurs. In general, in such cases, if either a slight fever from cold, or an hæmorrhage from the lungs, has preceded, it will lead to a suspicion of the truth; and if it should not, the patient may find it difficult to lie on one side, or on taking a deep breath a slight spasm or a cough will come on. No diagnosis can arise from the existence of fever, since in the chlorotic state coldness, with occasional flushing, are not unfrequent. In general, however, the fever of phthisis attacks most pointedly in the evening; that of chlorosis in the morning: the appetite of hectic patients is best in the forenoon; of chlorotic at night; and the latter can eat meat suppers frequently with impunity. If these diagnostics fail, we must rest till each disease appear more distinctly; or, in the mean time, give only the slight bitters of the purer kind, with such laxatives, generally rhubarb, as will keep the bowels free. Change of air, cheerful company, with a light easy diet, will relieve, if either be the disease.

Syphilis at times assumes the form of phthisis; but, in general, the chest is free, while pains are more violent at night, and more frequently in the middle of the bones of either extremity, or deep-seated in the head, than in the trunk. It has also seldom proceeded so far as to mislead, without showing its nature by eruptions, or by an affection of the throat. From the state of

mind we may draw some distinction; for cheerful hope illumines every hour of the hectic, despair darkens each moment of the syphilitic, patient.

Atrophy, from induration of the mesenteric glands, or from abscess in the liver, resembles in its effects, rather than its appearance, the true phthisis. Each is attended with fever, often with regular evening exacerbations, and in the latter we often find a dry short cough. The distinction is not, however, difficult. In the former, the absence of cough, the tumid abdomen, and lying with equal ease on both sides, sufficiently point out the disease: in the latter the dark yellow complexion, and the symptoms of dyspepsia.

After a catarrh, a cough, with a discharge of thin acrid mucus, often threatens consumption, and our apprehension is only relieved by reflecting on the period of life, the absence of hectic fever, the ease with which the patient lies on either side, and, in general, the nature of the expectoration. Truly purulent matter is often also discharged, with such an equivocal exertion that we can scarcely pronounce it either expectoration or vomiting. In this case we have found some foundation of distinction from the nature of the pus. If such as is usually discharged from a common abscess, if in large quantities at once, and not attended with the gradual progress of a hectic, we have usually prophesied a favourable termination, and such has been the result, though in one instance the Solar Tincture, privately taken, gained all the credit.

When we spoke above of the source of the disease, it was with a reference to the opinion of a late author, that pulmonic consumption originated in disorders of the liver. It was not an idle nor an unfounded suggestion; for in many instances we have found infarctions of the liver to have preceded; and, when authors speak of consumption arising from a sedentary life, hard study, and distress of mind, we strongly suspect that the foundation of the disease has been laid in the liver. We have mentioned it to direct the attention of practitioners to the early stages of the complaint; nor was it without a view of this kind that, in doubtful cases, we mentioned as a remedy the pure bitters, with rhubarb, to which the fixed alkali may be advantageously added. Is it from this connection that the idea and the term of "a stomach cough" are derived? Stoll has pointed out its connection with a sedentary life; and many authors have enlarged on the injuries which result from the exhibition of astringents in this complaint, which are peculiarly injurious in diseases of the liver: we can add, from observation, that coughs of this kind which have degenerated into phthisis, have been found to originate from a disease of that organ.

We have limited our consideration, however, of phthisis to a consumption arising from an abscess of the lungs, and have expressed our opinion that it is such an abscess as arises from the suppuration of a strumous gland, generally distinguished by the name of *tubercle*, or, when in a suppurating state, of *vomica*. Yet the opinion of other authors must not be passed over without some consideration.

As phthisis follows by hæmoptysis, it has been supposed that the wound arising from the rupture degenerates into a foul ulcer, which heals with difficulty. If, however, the habit is not previously injured, it is not easy to say why a wound from hæmoptoe should not heal as easily as one from a small-sword, pistol-bullet, or from the vicarious hæmorrhage from suppressed menstruation. It is, therefore, more probable that the bleeding is the consequence of the contraction of the chest from tubercles, sometimes from a diminished cavity in consequence of deformity.

Suppuration, from protracted peripneumony, has also been accused, in general, with less reason. We have seen this happen in several instances, without consumption following. The matter has been fairly spit up; the abscess has pointed externally, and the matter been discharged by a wound; it has been absorbed and carried to the kidneys, within our own observation, with a favourable termination. It is, therefore, probable that this cannot be a cause, except, as already hinted, when the inflammation has been communicated to an indolent tubercle. Peripneumony is indeed a comparatively rare disease; but our recollection does not furnish a fair instance of phthisis originating from it, though so frequently arising from a catarrh, a less degree of the same complaint.

Yet even this view of the case is not without its difficulties. Catarrh is a mild disease, originating from cold, and producing only a moderate degree of inflammation, in a part far above that affected in consumption. We know, too, that catarrh has continued for a series of years without terminating in consumption. The difficulty may be reconciled in two ways. Catarrh, we believe, is never the precursor of phthisis, unless attended with fever, and the fever may be as much the exciting cause as the inflammation of the bronchial glands; or the supposed catarrh may be only the first symptom of the disease. The former is, we believe, the fact.

Another opinion has been, that the discharge of a continued catarrh has become acrimonious, and produced ulcer. This is, however, truly imaginary. We know no situation in which the discharge is so acrid as during the first inflammatory stage, and this, it is admitted, does not produce consumption; and the discharge of a catarrh in a thin serous state has continued for many years, without a phthisis following.

There is little doubt, therefore, that the true pulmonary phthisis arises from tubercles, and from these exclusively; and the inquiry will remain of what nature these tumours are. External causes of obstruction have been sought, and been found in the dust raised in grinding scythes, in the meal from mills, &c. Dust in innumerable instances is breathed; and were this the cause, Hyde Park, and every frequented turnpike, would in the summer be the prolific source of consumptions. We have never seen calculous concretions in either trade; but we have found them in cork-cutters, and in one instance in a delicate young lady, where the hectic was connected with cutaneous eruptions. Added to this, it must be remarked that, from the analysis of these concretions, they appear, like other calculi, to be formed from the animal fluids.

The tubercles then are conglobate glands, enlarged in consequence of that state of the constitution which constitutes SCROFULA, which we have often hinted consists in a want of irritability to propel their contents, and which we shall soon explain at some length, vide in verbo. Their original formation, and their excitement to action, depends on different circumstances.

They are evidently formed in contracted chests, perhaps from the pressure of the crowded parts around obstructing the passage of their fluids; sometimes apparently in consequence of an acrimony. Consumptions are not uncommon in those constitutionally subject to cutaneous diseases from inheritance. When thrown on the surface in a sufficient proportion, the constitution is safe; but where, from debility or external applications, this is prevented, the internal organs suffer, and the inconvenience is particularly felt in the lymphatic system; not that the acrimony is thrown on them, but infecting the fluids exhaled into different cavities, and probably separated in a more acrid state by the conglomerate glands, it is taken up by the lymphatics, and stagnates in the conglobate. Thus we find, in similar circumstances, sometimes the conglobate glands of the lungs, sometimes those of the mesentery, and the lymphatic system in different parts, suffering from obstruction. Infirm health, with atrophy, is the constant consequence, when pulmonic affections are not induced.

Damp air, acrid vapours, and various causes, connected with the atmosphere, have been accused; but with little reason except when connected with scrofula, in which case damp situations seem to act as a predisposing cause. Of a sedentary life, of vexation, &c. we have already spoken, and attributed their influence to their effect on the liver.

It remains to consider phthisis as hereditary and infectious. It is useless to engage in a war of words with the partisans of Mr. Hunter respecting the real meaning of hereditary diseases. We only use the term in its common purport—are persons born of consumpti e parents particularly liable to the disease? They undoubtedly are so, and it is the consequence of every day's experience. Yet to this there are some exceptions. As in scrofula and other diseases the complaint pursues those children only which resemble in form, in complexion, or temperament, the parent afflicted. The others appear in no respect influenced by the hereditary taint. It is singular, however, not only that the general predisposition but the period of life at which they are affected are the same, independent, with a few exceptions, of the external causes. These exceptions are, removing into a warmer climate previous to the critical period, or in a female being in the increasing state. We have seen the phthisical tendency constantly recurring, and as often removed by pregnancy. The unfortunate patient is, however, at last the victim of a complaint, which may be retarded, but which cannot be subdued.

That phthisis is infectious the medical opinions of southern Europe incontestibly show, since it is forbidden to open those who die of the disease, and the bedding and clothes are burnt. We do not interfere with the practices of countries in which we have no experience. In Great Britain we suspect it to be infectious, though not in a considerable degree. The physician who visits, the nurse who attends, the friend who assists, are in no danger. Yet to live in the same room, or to sleep in the same bed, is dangerous, if continued. We have often traced infection; yet where the communication is not constant or intimate, we have thought that the communicated disease is not peculiarly violent or dangerous. Where it has appeared so it has been communicated from parents to children, and the contrary; but who can say that in such cases hereditary predisposition may not have had its powerful influence? Let us not deprive the sufferer of the consolations of friendship and humanity; for the disease, we must repeat, unless in similar constitutions, is not highly infectious. It is sufficiently so to inspire caution with respect to too constant confinement, but not to justify neglect.

The course and the progress of the symptoms are not very readily explained. They are in the early stages too considerable for the cause, and in the latter too slight. We have mentioned, not without design, the tall stature, without a proportional expansion, which, according to the explanations of the progressive evolutions of the body, shows some primordial defect. To which we must add, that constitutions of this kind generally show a premature expansion of the intellectual faculties, with peculiar debility of the corporeal functions. Deformity, a frequent attendant of each, though it sometimes precedes pulmonic affections, is by no means a necessary attendant. The first marks of indisposition, except those just mentioned, are the symptoms of impeded circulation through the lungs, followed by a slight irritation felt at the top of the epiglottis. These are generally signs of the existence of tubercles, and ought to inspire serious alarm. The former are pointed out by pain and dyspnœa on rapid motion; by a fixed, florid red on the cheeks; by an inability to lie on one side rather than the other: the latter by a hecking cough, frequently felt during the day, particularly on motion. The decubitus difficilis is constantly on the affected side; indeed, so constantly, that we consider it as a distinguishing mark of the complaint. The explanation, however, is difficult. It might be supposed that respiration would be carried on more easily by the sound lung, if not compressed; and as pain is no part of the symptoms, the pressure on the affected side would produce no inconvenience. We have not pretended to explain any of these appearances which respect the facility of lying on either side. With the fullest collection of the facts before us we have sometimes thought that we had found a clue, when some unfortunate well-founded observation has dissipated the visionary fabric. We shall rest on the circumstance as stated, therefore, as a fact, and determine that the side on which the patient *cannot* lie is that which is diseased.

Whether obstruction will alone produce fever is doubted; but the debility, with the obstructions, may undoubtedly occasion an evening HECTIC, q. v. The tubercles themselves do not admit of suppuration; and in this respect also resemble scrophulous swellings. The expectoration, we have said, is a caseous substance, *fringed* often with a little true pus, apparently the production of the cyst. Yet in the progress the discharge is truly purulent, and often in considerable quantities; but in such cases the whole substance of at least one lobe of the lungs has apparently suppurated. That the respiration will be affected from such causes must be evident; yet at times it is not so, and in a few cases the patient has been able to lie with equal ease on each side. In such circumstances we have suspected that the glands at the root of the lungs are chiefly affected, but dissections have not been sufficiently numerous to ascertain the fact. The exceptions do not, however, contradict the general cause so frequently observed, and

so often incontestably established. The effect of the more frequent inspiration, and the more rapid circulation, is to expose the blood more frequently to the access of atmospheric air; and consequently to increase its oxygenation: hence the more florid complexion, probably the stronger pulse, and of course the phlogistic diathesis. From the fever arises the increased heat after eating, which is so striking an effect of phthisis, that on its degree we have rested the determination of the digestibility of food (see ALIMENT): from the fever also arises the heat on first going to bed, and the perspiration on the solution of the paroxysm. The febrile exacerbations, we have said (see HECTICA), is owing to the absorption of purulent matter; and when this is not carried to the skin it falls on its vicarious organs, the mucous glands of the bowels, so that the perspiration and diarrhœa counterbalance each other.

In the advanced stages the irritation of the cough is incessant; the heat or perspiration almost constantly distressing; and when these are absent the life seems exhausted from debility. What then affords the cheering ray of expected relief? Such however is afforded, for ingenuity invents every fallacious mode of eluding inquiries, and of giving the most favourable view of every symptom. The patient sinks to the grave with the constant assurances of having attained greater strength, and a relief from every dangerous symptom; with eager expectations of the events of another year, when life is limited by another day. Such we would say is the kind interposition of Providence, was the same cheerfulness found in every disease, and was not in many the gloom as distressing to the patient as the ill-founded expectation of the consumptive victim is to the well-informed anxious friend. This cheerfulness is said to be owing to the absence of pain; but pain is not always absent: and the difficulty of breathing, the incessant cough, the burning heats, the deluging perspiration, would appear worse than the most poignant pain. Yet these are disregarded, represented as trifles, lessened in the report to the most inconsiderable inconveniencies: it is truly singular!

The *prognosis* in hectic is always unfavourable. We this day saw a lady whose parents in a long succession have died hectic, and whose brothers have yielded to the same complaint. She feels scarcely more than a slight irritation at the epiglottis, with a delicate nervous habit. Yet the experienced eye must see in a moment her fate, when the breeding period is at an end; for she is now pregnant, and may be again so. Nature assumes her rights, and combats every disease while this important process goes on. We may find no properer place to mark the conclusion of the scene. Each successive pregnancy is attended with greater debility, and the period of suckling must each time be abridged. At last, during the whole pregnancy, the debility is extreme: a healthy offspring, however, is often produced, but with little or no pain in the labour, and the mother dies without a groan within a few days. If the hectic has come on rapidly, the children are often healthy: if it has gradually approached, they soon sink from apparent debility only.

In other respects the prognosis is influenced by the rapidity of the progress, and the degree of the symptoms. A purulent expectoration, with considerable hectic fever rapidly hastening, leaves little hope. If the pulse, in an apparently early stage, exceed in the morning 100, and at night 120; if at the same time the expectoration is purulent and copious, the night sweats constantly repeated and violent, the debility hastening on, and the emaciation following with similar rapidity; much expectation of relief cannot be entertained. If in females who have already experienced a regular return of the menstrual discharge this evacuation should disappear, we must equally despair. While this discharge however continues, while the pulse is at no period more than 90 or 95, while animal food is borne with ease, we have generally indulged a hope of relief: a hope, alas! sometimes disappointed.

Is phthisis then never cured? Whence can arise the confident promises which every newspaper offers, which the most respectable authorities confirm? The deception arises from two sources. Catarrhal complaints are, in many instances, confounded with consumptive, and the most experienced eye is occasionally deceived. In some cases also vomicæ are completely evacuated by expectoration, and the wound heals. So insidious is the attack of phthisis, that we have mistaken it for catarrh; and, on the contrary, so violent is often a catarrh, that we have apprehended phthisis; nor has the delusion been destroyed but by the expectoration. From such errors many medicines have gained credit; nor can we wonder at the decision of those whose testimony appears convincing, when we own that an extensive experience of thirty-five years does not always enable us to avoid error. Confidence is, however, the general companion of ignorance, and those who know of no sources of fallacy conclude that there are none. To say that phthisis is cured may appear equally confident and rash. We shall perhaps be credited when we claim no merit from the cure; but if the same experience which has enabled us to decide on one point will be allowed on the other side, we can say that in six distinct instances we have seen a recovery perfected by nature. The greater number of these were seen and pronounced to be truly phthisical by practitioners of rank, judgment, and experience. We claim, we have said, no merit, and have mentioned the cases to prevent despair: they are so few, that they can scarcely inspire hope.

As the remote causes of phthisis, at least those styled predisponent, are constitutional, we can scarcely expect to be able to avoid them. The exciting causes should occasion the most anxious caution. When, therefore, an hereditary or a constitutional predisposition is suspected, we should with the utmost care avoid every cause of catarrh, every cause of fever, at least during the period of predisposition. To avoid colds, it is not, however, necessary to enervate the constitution by heat: on the contrary, the exotics of the conservatory suffer most from every blast. To guard against such a state of febrile irritability on one hand, and to avoid, on the other, too great exposure to cold, is a difficult task. No rules can be laid down. In general, to guard against the sudden impulse of cold by moderately warm clothing; to remove to a warm climate, is the best security; but where, in the present state of Europe, is *personal* security to be found? If we seek for warmth in the Antilles, or in America, we encounter diseases equally dreadful, and we may perhaps with equal safety and more comfort find it in the warmer spots of this island

in the winter and spring; removing, from the months of July to November, to the inland parts, to avoid the relaxation of too great heat. Cornwall and Devonshire afford retired secluded spots, where the bleak east scarcely intrudes, and where the frost seldom binds the earth for any continued time, even in extreme winter. In these retreats careful exposure to the air will prevent an unnatural tenderness; the strength may be recruited by exercise on horseback, visiting the neighbouring shores in the mildest days, and keeping in the sheltered spots on the coldest; guarding, by a cautiously regulated diet, and a moderately warm dress, against every stimulus, and yet by admitting an admixture of animal food, at the period when exacerbations are less expected, supporting the general strength. When the predisposition is stronger, and when the disease may be said to have commenced, if any pain of the side shows a local affection, a blister should be immediately applied; and the pain shifting to different parts of the thorax, should be followed by the same remedy, where ever it may appear. We have seen many instances of the good effects of this measure, and in particular one, where six promising young men and women of one family had fallen victims to phthisis. The seventh was saved by marriage, and successive lyings-in; the eighth by repeated blisters. The number we know not; for, after he found the advantages of the remedy, he applied them himself, in every instance, with temporary relief, and ultimately with complete success. Many similar but less striking instances we have witnessed; and in impending phthisis, if steadily followed, this remedy will very frequently succeed.

When phthisis has come on, the case is more hopeless. Yet the disease has, for years, been warded off by the plans just mentioned; and the critical period once passed, the devoted victim has escaped. We have already hinted that among the prophylactics, in the female constitution, the recurrence of the puerperal state is one of the most frequent and effectual. Shall we be forgiven, then, if in such circumstances we recommend matrimony, for it is sometimes not a temporary relief only? When the disease is firmly established, medicine we fear is useless. We have said, that a pulse exceeding, at any period of the day, 90 or 95; with fixed pain in the side; difficulty of lying on one side, often on either; the necessity, for procuring ease, to lie with the head and chest raised; are the circumstances which portend the greatest danger. We did not before mention the expectoration, because its more decisive appearances occur at this period. Patients have usually spit in water for Sydenham has said, that sputum swims, and pus sinks. This is, however, an equivocal criterion. When treating of INFLAMMATION, q. v., page 1[illegible], we have said that mucus is generally in rounded masses; pus flows more readily: the latter is softer and whiter, with little globules, swimming through it; and, when mixed with a saturated solution of potash, a transparent tenacious jelly is separated, while the same solution produces no such change in mucus. We cannot add to the force or perspicuity of this description, but may only observe that the white gently flowing pus often excites, in common observers, little alarm, while the green or yellowish mucus is looked on with the strongest apprehensions.

In the cure of phthisis, we are told that we must obviate the occasional causes of fever; evacuate the purulent matter from the lungs, palliate the most urgent symptoms, and regulate the air, exercise, &c. Other authors, and those of high authority, gravely tell us, that we must evacuate the matter from the abscess, clean and heal it. They teach us also how to effect these important purposes; but unfortunately, though the indications are clear, the effect of the remedies declared to be indisputable, we find them always fail. We must take up the subject more empirically, for dogmatism lends us no assistance.

While the pulse was full and strong, the pain in the side acute, the phlogistic diathesis violent, and the cough harsh and distressing, *bleeding* was naturally suggested. It was employed freely, and with apparent advantage. The symptoms were less violent, and the never-failing criterion, the buffy coat, impelled repeatedly the hand of the operator. But while every amendment appeared the pulse sunk, anasarcous swellings came on, and the patient died. Such, however, was the prejudice in favour of the remedy, from the symptoms described, that the practitioner never reflected that he was combating an effect only, and that the cause remained undisturbed. Yet bleeding was, for a time, considered as the only remedy, and the more limited evacuations are still employed. At present, by every rational practitioner, it is only used as a palliative for more immediate relief of distressing symptoms, and never carried to such an extent as to weaken the vital powers.

Emetics were generally dreaded in hectics, from apprehension of inducing hæmoptoe, nor, till the publication of Dr. Robinson's work, were practitioners aware that emetics, by their determination to the surface, were among the most successful remedies for bleedings from the lungs, perhaps for many other hæmorrhages. We have not dared to give emetics in hæmoptoe as such, but have never succeeded so well as when we have insidiously excited vomiting. In other respects, emetics are highly useful: they emulge the bronchial glands; they prevent exacerbation of fever; and diffuse a general, genial glow over the surface. They often succeed in moderate doses, so as to excite one discharge only, repeated every other day. We mean not to say that they will cure the complaint, but they relieve the most distressing symptoms, and sometimes keep it from advancing till the critical period of life is over, and nature resumes her succession of offices in a different direction. The choice of emetics we have not found a subject of importance. If the squills would readily excite vomiting, we might prefer them; but they occasion chiefly a long-continued and distressing nausea. The metallic emetics employed are the vitriolated zinc and copper, and the tartarised antimony. The two former act quickly, and not with peculiar violence, in moderate doses. We once thought the vitriolated copper peculiarly useful in this complaint, but, from repeated, more attentive observation, we believe the ipecacuanha more manageable and convenient. The antimonials pass into the bowels more rapidly; and in a disease, where the diarrhœa is often a troublesome symptom, this tendency is inconvenient and dangerous. Where no diarrhœa attends, the antimonials are equally useful with ipecacuanha.

Cathartics are seldom necessary, for the internal accumulations are not considerable or dangerous. In the early stages they are sometimes useful to procure that

equable circulation which is so essential to health; and we must recollect the probability of an affection of the liver preceding. We suspect that this is more frequent than practitioners have supposed. In the advanced periods of the disease there is reason to apprehend diarrhœa, and every medicine of a laxative tendency should, of course, be avoided.

Diaphoretics have been forbidden on no very solid foundation. The *sudorifics* are certainly injurious, and even every diaphoretic, which acts in consequence of increased temperature, should be avoided; but we have pointed out medicines of this class, the *diapnoica*, less liable to suspicion, and some of the milder relaxing diaphoretics may be occasionally admitted. It should be recollected that the copious sweats are the effect of the febrile paroxysms; and that, to obviate these, would be to prevent what is merely their consequence. Keeping up the action of the extreme vessels we found to be the best means of preventing the formation of a paroxysm, and so far only are diaphoretics useful. For this purpose we give emetics in the evening, previous to the access of fever; and mild doses of antimonials, with opium, are found to be equally useful.

Blisters we have already mentioned in the prophylactic course, and must now add, that keeping up a discharge from the thorax, so near as possible to the affected part, is, through the whole of the disease, beneficial. When we could not distinguish any part of the lungs peculiarly injured, we have applied the blister to the sternum. When it is designed to relieve the harshness and violence of the cough, the nape of the neck has appeared the preferable place for its application.

When any common abscess has apparently pointed outwards, a deep caustic is the best remedy; and many practitioners, with good reason, prefer a seton, as it can be more easily continued, and makes a more certain and steady discharge nearer the part affected. Repeated blistering seems, however, in our experience to have had as good an effect as might be expected from any topical discharge of this kind. When, however, the blistered part begins to discharge a white curdled matter, its good effects apparently cease, and another blister in the neighbourhood must be applied.

The *cooling neutrals* through the whole course of the disease are useful, particularly nitre, which may be advantageously taken in any period of the complaint, in milk of almonds, in the quantity of about a scruple or half a dram to a pint, with which a light opiate may be combined. The citrat of potash and the other neutrals, when there is no reason to apprehend a diarrhœa, may be also given. *Demulcents* are always indicated, and usually employed with great freedom, to relieve the violence of cough. The *spermaceti*, the most common, seems to have little real power, and is of use no longer than while passing over the epiglottis; so that it is best given in form of a linctus. The compound powder of tragacanth is used in a similar way, with as little real advantage. If demulcents to sheath the fauces and lessen the violence of cough are ever useful, no medicine of this kind is more advantageous than gum-arabic, held constantly in the mouth; and, during sleep, it may be stuck against the teeth, so as not to endanger suffocation from being inadvertently swallowed.

For the same purpose opiates may be occasionally given, and the tinctura opii camphorata is the usual medicine employed, without any peculiar advantage. Indeed there is little room for choice in the preparations, except their greater or less degree of solubility. The camphorated and the common tinctures act quickly, but lose their power in three or four hours; so that it is necessary to repeat them, or to employ a less soluble preparation, as the solid opium, combined occasionally with soap, or with the fetid gums; sometimes, to obviate costiveness, with an aloetic pill, or to prevent the suppression of expectoration, with the pilulæ e scilla.

Expectorants, through the whole disease, have been freely employed, though seemingly without correct views. In the beginning, when the disease appears to be truly catarrhal, the more stimulating expectorants probably increase inflammation, and prevent the formation of the mild salutary mucus. If we employ the mild demulcent ones, we shall produce, as already hinted, little effect, except sheathing the epiglottis. Physicians however early, and in the middle of the last century, employed very stimulating medicines of this kind, the *turpentines*, the *natural* and *artificial balsams*. These if used indiscriminately must be injurious. Yet at the end of the complaint, when expectoration was checked from debility, and a want of irritability of the glands, we have found them useful; and in this state of the disease only. Even the, formerly famous, *anti-hecticum* of *Poterius* we have thought useful in this stage of the complaint. The advantages of the balsams were supposed to consist in their power of cleaning the wound and healing it.

We have suspected that the myrrh owed its credit to a supposed balsamic quality, or to its effects on irritable sores. Whatever be the source of its employment as a remedy, it is certainly in many cases of phthisis an useful one. It seems, as we have said, to be a narcotic bitter, slightly tonic and sedative; and we have suspected it to be injurious in impending hæmoptoe. (See MYRRHA.) Balsams have been recommended in another way, when breathed in the form of vapour. A balsamic ether has been fashionable as a secret medicine, but seems to possess no very superior powers. In an inflammatory state of the bronchial glands warm watery vapour may be useful, and vinegar has been occasionally added, but it seems often to irritate the cough, and the more stimulant vapours are evidently injurious.

When the pneumatic chemistry introduced to our notice many substances in an aerial form, it seemed probable that many advantages might be derived by introducing medicines which would thus penetrate much farther than vesicular vapours of the greatest tenuity, without being changed by the digestive process. These favourable prospects have not been realised. When oxygen was discovered it was soon tried in this complaint, but it was manifestly injurious, increasing the hectic heats, the fullness and hardness of the pulse, sometimes seeming to induce hæmoptoe. Air of a lower quality was then used with some advantage, and the diluted carbonic acid gas was breathed apparently without injury, though not with advantage. We have been since told of the good effects of the hydro-carbonate, of the advantages derived from breathing the breath of cows, and even inhaling the fumes of fresh dung. As these plans are now disused, we may suppose that they

were not permanently useful, though in some of the earliest trials they appeared to be so. The nitrous oxide which so rapidly intoxicates has not been used in its dilute state. The only artificial air given internally in this complaint is the carbonic acid gas, combined with water, sometimes also with an alkali, in imitation of the Seltzer water. All the natural acidulous waters have been also recommended. The chief mineral water employed, though not an acidulous one, is that of Bristol, which is nearly pure, or at least does not possess any ingredient apparently beneficial to the complaint. Perhaps the water alone, perhaps the air and other circumstances not sufficiently attended to, may have relieved. Shall we add, that the fame acquired by it, in some cases chiefly catarrhal, may have led to its more extensive and indiscriminate use?

As the attending fever is a remittent, the bark was apparently indicated; and when its utility in meliorating the sanious discharges of foul ulcers was observed, it was supposed that it might be equally effectual in this disease. We may, however, assert, that in general the bark is injurious. If given in any dose calculated to lessen the fever, it increases the hectic heats, the flushes of the face, the harshness and tightness of the cough, at the same time diminishing the little expectoration that seems often to relieve the more distressing fits of coughing. When, however, the purulent discharge is copious; the patient's strength exhausted; the morning perspirations profuse; the bark is sometimes borne with more ease, and appears occasionally beneficial when it does not increase the discharge from the bowels. Other bitters, as the cascarilla, the angustura bark, the camomile flowers, the quassia, the columbo root, and the uva ursi, are useful nearly in the order stated as tonics, and injurious in the same order as astringents. The first, however, is most frequently inconvenient in this respect. The astringency of the angustura is slight, and, in the others, is not observable. The uva ursi, lately recommended, seems to act exclusively as a bitter, and one of the weakest of the tribe.

Some of the narcotic bitters have been employed and recommended, as the hop, St. Ignatius' bean, the bitter almonds, and the various plants which partake of this virtue. The LICHEN ISLANDICUS, q. v. we suspect, if not wholly a nutrient, is of this class. The neglect, however, of these medicines seems to show that they have been disused as inefficacious, or dreaded as deleterious. Other narcotics, as the umbellatæ, of which the cicuta is the principal, and the solanaceæ, particularly the henbane and foxglove, have been employed. The aconite has been also recommended by Dr. Rogers of St. Petersburg. We have never found the cicuta particularly efficacious, in removing the disease, though as an anodyne it is sometimes useful, and seems to act as such, without the inconveniences which often attend opium, The henbane appears equally efficacious, and is said to be also slightly laxative. We have preferred the seeds as more equable in their effects to the extract, and less subject to sophistication. The digitalis, of late highly commended, seems not to have merited all the praises which it has obtained. It often reduces the pulse from one hundred and twenty to sixty, without relieving the principal complaint. In many cases, also, it occasions such a considerable debility that it cannot be long continued. In every instance, indeed, where the debility induced is not so striking, it probably lessens the vigour of the constitution in a very injurious degree; nor is there, we think, any doubt of its inconveniences far overbalancing its beneficial effects in this disease. Though we do not in every instance deny the latter, they have been greatly exaggerated; nor, on tasking our recollection, can we say that we have ever seen essential service in phthisis derived from the digitalis that might not, in similar circumstances, have been produced from other plans of relief. Opiates we have already mentioned as palliatives; yet it has been supposed that, by their continued use, they might allay irritation, and contribute to, the great object, the healing of the ulcer. They have, however, failed in this view, though we cannot refuse their employment to lessen pain, and keep up the calm serenity, the pleasing delirium, in the midst of pain, distress, and a state hopeless of relief. Vide OPIUM.

Metallic salts and oxides have been employed with different views. The mercurials have been considered as deobstruents, and they have been used to restore the circulation, supposed to be obstructed in the diseased glands. To render the theory more complete, mercury has been triturated (*killed* in the pharmaceutical phrase) with extract of cicuta, to unite two deobstruents of an opposite nature, so that the stimulus of the one may be rendered less injurious by the sedative powers of the other. Experience has, however, confounded this plausible theory, and, together, they have been found useless, perhaps injurious; nor does the *mercurial salivation* recommended by Dr. Rush rest on a more secure foundation. The preparations of iron have been employed as tonics, particularly in the mixture recommended by Mr. Griffiths, with the myrrh and soda. The chemical inaccuracy in that preparation is avoided by previously precipitating the iron from the vitriolated salt, employed by Griffiths, and using it in a smaller dose. The *ferrum precipitatum* is now usually combined with the myrrh and natron in the form of pills. In either mode the remedy appears to be useful; but in the more early, inflammatory state of phthisis, we have thought the iron too stimulant, and have therefore usually omitted it. In the latter stages the addition seems advantageous. Of the copper, as an emetic, we have already spoken. It is recommended by Dr. Senter of Philadelphia, by Dr. Simmons, and by John Wesley, probably from an old author. We mention it here to suggest the enquiry, whether it may not be useful as a tonic. The effects of zinc in this view, of BISMUTH, in Dr. Bardsley's reports, from the authors already quoted, vide in verbo, lead us to think the suspicion not wholly visionary.

As a tonic from the mineral kingdom the vitriolic acid has been already alluded to. It is wholly without suspicion respecting any injurious power, and is often useful. It is usually added to the decoction of bark to restrain the perspiration, which often occurs on the solution of the evening paroxysm, about two or three in the morning. The inconveniences arising from the bark have been attributed, with little reason, to the acid; but on the other hand we have not found it, in any form, highly useful. The other acids do not sensibly differ, or experience has not yet discovered any foundation for a preference.

Various circumstances necessary in conducting this very intractable disease yet remain. These are AIR and SITUATION; DIET; CLOTHING and EXERCISE. Of these in their order.

Air and *situation* are apparently objects of considerable importance in a disease where medicine must confess the inutility of her resources. Change of air is among the remedies constantly recommended; and *to change* is often professedly the only object. From the experiments with oxygen, it will be obvious that the purest air is not the best, and that air of a lower quality is more useful. We have hinted also that the advantages of Bristol have been, probably in part, owing to the low situation of the former lodgings; and that the place has gradually declined in its credit, since the invalids have crept higher up the hill. Whatever becomes of the suspicion, it is evident that the loftiest and most exposed situations are not the most salutary for the hectical patient, and that a dry, gravelly soil, of no great elevation, defended from the east, is preferable. We have not hitherto gone so far to prefer the neighbourhood of marshes; yet the advantages supposed to be derived from breathing the hydrocarbonate, might lead to a suspicion of the utility of such a situation; and it still remains a subject of enquiry, whether hectics have not increased in proportion to the diminution of intermittents. It is common to send phthisical patients to the neighbourhood of the sea, led probably by the decided advantages of a sea voyage. In the spring and early summer, however, the sea is evidently injurious: in the autumn it is often salutary; and in the winter the neighbourhood of the sea affords a milder and more steady temperature than any other situation. In such places frost is seldom continued; fogs are rare; the cold winds uncommon. While, then, in autumn and winter the sea coasts afford such resources, their neighbourhood in the spring and early summer will afford numerous sheltered situations, where the mildness of the shores is combined with the defence of the woods, equally sheltered from the baneful influence of the east, or the piercing colds of the north winds.

A change of climate is often recommended; and our invalids have been sent to Lisbon, to Madeira, to the south of France, and to the West Indies. In the three former the climate is by no means so steady as to preclude occasional blasts of piercing coldness; while the habitations, constructed to prevent the access of heat, have often few resources to guard against cold, which the stranger, whose nerves are unbraced by an unaccustomed temperature, feels severely. In general, also, our invalids endeavour to avoid the winter, when, in reality, they should avoid the spring. If they sail from the south-western shores, they will usually find no inconvenience from cold till near Christmas, and they should remain until the end of May; but they generally migrate in October, and return in February, when they experience the heat of a later summer in lower latitudes, and the cold of a late spring on their return. On the whole, we have scarcely found any advantage gained from excursions abroad; and, when permitted, have always dissuaded the attempt. We have been justified by repeatedly witnessing their ill success. To the West Indies few resort, for they meet there with a worse enemy; and it is not true, as has been asserted, that phthisis is there unknown. In the article CLIMATE, q. v. we have introduced some remarks which may be applicable in this place.

The *diet* of phthisical patients is an object of no little care, for they require support by the mildest and least stimulating foods. While the Brunonian fed his patients to avoid debility, the other practitioners carried, apparently, their antiphlogistic system too far. It is certainly improper wholly to forbid animal food. Yet its kind, the time of the day on which it should be taken, and the precautions to be enjoined in the conduct, require particular attention. We have noticed these circumstances with a view to the present subject in different articles (see ALIMENT, DIÆTA, LAC). Let us recapitulate shortly what is connected with this subject.

The phthisical patient should rise early, for nothing weakens so much as the perspiration and the drowsy slumbers from six to nine; but as the day would in that case be painfully long, he should be allowed to rest after his mid day meal for an hour or two. He will then rise refreshed on a second morning, not exhausted by perspiration. At rising, or a little before, he may take some thin chocolate, some whey, or asses milk, and in an hour or two a common breakfast of tea, with ship biscuits, may follow. This will be completed probably by nine, and three or four hours are then at liberty for exercise, for taking medicine, for light employments, or easy conversation. Dinner, for reasons stated (see DIÆTA), should not be delayed long after one, and it should consist of a single dish of light animal food, not prolonged by luxuries, or rendered heavy by the refinements of cookery. The drink may be water, light porter, or cyder with water; and wine will be unnecessary after it, unless custom has transferred this beverage from a luxury to a necessary. Suppers should be slight, and consist of fruit, if the bowels will bear it; light broth, beef tea, sago, tapioca, or arrow root, flavoured by lemon peel or lemon juice rather than wine. The usual refreshment of tea may be supplied by food of the same kind.

The *clothing* should be so regulated as to guard against cold rather than to increase the heat. As hectic patients, from the morning perspiration, are usually sensible to cold, they should be more carefully guarded when they go into the air. It is usual to direct flannel underneath their linen, and in winter it is highly necessary; but in summer excites too great perspiration, and calico should therefore be substituted in its stead. The flannel and the calico should be changed every other day. The feet should be defended with unusual care. It is not uncommon for the coughs of consumptive persons to be highly troublesome on going to bed; and we have sometimes found that the usual opiate given more early, so as to have begun its action at bed time, has prevented this distressing attack. Another precaution has lessened the violence of the cough, viz. not taking off the clothes too quickly, for the cough seems often to be excited by the access of the cold air. We have occasionally directed patients to go into bed after laying aside their upper garments only, and to have a proper warmth come on before the others are taken off: a precaution we have observed to be highly useful in guarding against this inconvenience.

EXERCISE. The various exercises, the principles

on which they act, and the grounds of preferring either, we have noticed under the article Æora. In hectic cases, *riding on horseback, or in a carriage, swinging,* and *sailing*, are chiefly recommended. *Riding on horseback* is highly commended by Sydenham, and many authors, as a remedy of the greatest utility, and almost a specific in this disease. Unfortunately the complaint has since proved unusually intractable, or the recommendations have been greatly raised above their real value. We do not find, at this time, riding peculiarly advantageous in the true pulmonary phthisis. A *carriage* is a substitute for the horse, in cases of greater debility; but if the weather is favourable, the open carriage is preferable, as irregular currents of air from the sashes are avoided. *Swinging* requires probably a little more exertion to support the body in a due equilibrium, and it has the advantage of being a more general exercise, of affording a constant succession of free air, with a gentle agitation. It lowers the pulse, and lessens hectic heats, giving often appetite and spirits, with more refreshing sleep. It has not been easy to ascertain the sources of the advantages from *sailing*, but probably they are of a similar kind. A constant exertion is required to preserve the balance; the air is free and open, usually with a current in some direction. There is not the slightest evidence that the fumes of the pitch contribute to the relief. The use of all occasional exercise should be regulated, like diet, by an attention to the usual febrile exacerbations, for those who are benefited often by riding in the forenoon, feel inconvenience from the same exercise in the evening. In general, riding is preferable in cases where the strength is little impaired, and where there is reason to believe the primary disease to be in the liver. If the exercise has an ostensible object it is more useful; and, on this account, a journey by easy stages, or a voyage to meet an old friend, is peculiarly beneficial. The real object to restore health is forgotten, and the spirits kept alive by the artificial one.

In a disease where a cure is impracticable, it is often of service to *relieve pain* and to lessen the more distressing *symptoms*. The antagonising evacuations are, we have said, the diarrhœa and the morning sweats. The opiate, which quiets the cough, will sometimes relieve the diarrhœa; but it cannot often be given in a sufficient dose without inducing dyspnœa, by checking expectoration; and, on the contrary, the opiate often increases the perspiration. In the former case, the compound powder of chalk, the logwood, the kino, or the tormentil, will check the diarrhœa; and in the latter the cicuta will frequently quiet the cough, without increasing the sweats. The perspiration itself we have often lessened by exciting a gentle diaphoresis with the relaxing medicines, as opium with antimonials, early in the evening, and sometimes the mineral acids, with a small proportion of the syrupus papaveris albi, will succeed.

Flatulence in the stomach and bowels, by pressing on the diaphragm, sometimes increases dyspnœa; and it is of consequence to distinguish this cause, as it may be so easily relieved. It is known by the ease which the occasional discharge of flatus procures, and is removed most effectually by the asafœtida taken into the stomach, or thrown into the rectum. The asafœtida is the preferable remedy, as it is easily soluble in the form of pills, and may be given in a watery veheicle; it is, at the same time, an expectorant of considerable value, though seldom used as such. If more warmth be required, the camphorated julep, with a small proportion of ether, of laudanum, or tincture of galbanum, may be joined. A warm plaster to the pit of the stomach will also be often useful.

In the latter stages of the complaint the vessels lose the power of propelling the mucus, and the dyspnœa is highly distressing, particularly in the morning. Though the greater part of the discharge is usually from vomicæ, which are not secretory organs, yet the stimulant expectorants seem to relieve, perhaps from associated motions, or from the space obtained by the discharge of the expectoration merely. The squills and the warmer balsams are at this time useful; and indeed the balsam of Peru, which we omitted to mention, is an advantageous medicine at an earlier period as a warm tonic, if given in small doses. An emetic will always relieve, by exciting expectoration; but in the stage of the disease alluded to, it cannot be borne without great inconvenience and some danger. In the morning we have sometimes succeeded in bringing on expectoration by the aqua ammoniæ, in warm tea, which frequently produces a slight nausea, without vomiting

When phthisis arises from suppressed eruptions, we are advised to give mercurials, with the hydrolapathum, guiacum, and mezereon; but the plan has, we believe, never succeeded. We shall take this opportunity of observing, that we have never found this mode useful, and have never been able to restore the eruption. In hectics and other fevers, from this cause, the most successful method has been to support the strength by mild, nourishing food, free country air, and such tonics as can be most easily borne. A long time is required for relief; but, *in* time, it is often obtained.

We have professedly taken up the subject in an empyrical view, and given fairly the result of an extensive experience, attained by many a heart-ach, at seeing the most amiable part of the creation sinking under a disease, whose daily ravages we must witness without being able to check. We shall add a few words rather in a dogmatical view; and, if we do not succeed in elucidating the complaint, we will not long detain the reader.

We consider it as established that phthisis proceeds from what are styled vomicæ alone, for abscesses, even from inflammation will heal, if the suppuration is not communicated to the coats of some indolent vomica. These are apparently conglobate glands, similar to the scrofulous, full of a caseous substance, whose cohesion may be lessened, but which admits of little apparent change. The glandular lymphatic system is peculiar to early youth: as the body expands in manhood, it gradually lessens. When that expansion does not take place, this system disappears more slowly; or perhaps the obstruction of these glands, which hinders their absorption, may be the cause of the evolution being delayed. It is sufficient to mark, in this place, the principle of the connection, which we may find useful in other enquiries.

The obstruction then of these glands continuing beyond their accustomed period, will occasion some contraction in the cavity of the chest, and the delay of the developement will still further confine the space in which the lungs are obliged to act: dyspnœa is therefore felt early, and an irritation from these foreign

bodies, as we may now style them, is perceived, as usual, at the extremity of the tube, viz. the epiglottis. In this state the patient often remains for many years, till the expanding frame, or the absorbed glands, leave the lungs at greater liberty. This change, which usually takes place from eighteen to twenty-two, is in these cases often delayed till after thirty, nor is it completely effected till the period of thirty-six. This is the termination of the critical, consumptive period. But we have found that the danger recurs in females at the end of their menstruation; and in men about fifty-two, or fifty-four. These cases are, however, rare, and in men peculiarly so. When the discharge ceases in women, the blood is, for some time, determined, irregularly, to different organs; so that it is not surprising to find any remaining vomicæ subject to inflammation. A similar irregularity takes place in the circulation even in males, when the constitution has passed its acmè; but the determination is more commonly to the hæmorrhoidal vessels.

Independent of these general causes of inflammation, the coats of vomicæ inflame from accidental colds, from irregularities of diet; sometimes we suspect from irritation in consequence of a disease of the liver. In accounting for the phthisis of men just passed the acmè of life we might have referred the cause to the liver, but that we have usually found this secondary hectic in younger persons, and we will never knowingly sacrifice a fact to a system. Irregular determinations, from suppressed eruptions, may have the same effect of exciting inflammations as well as every cause of fever.

These vomicæ are not in their substance susceptible of inflammation, and on this account we have styled it an inflammation of their coats; for when their contents are discharged, we see scarcely any other difference than a diminished cobesion: the caseous substance assumes a flaky form, and these flakes are *fringed*, we have said, with pus. In the conclusion of the scene, however, the pus is more copious, and the inflammation and suppuration evidently extend to the cellular substance of the lungs themselves. When numerous vomicæ have suppurated, a whole lobe has been destroyed. The cause, however, which excited the inflammation contributes to support it; and the intractable ulcers which these glands form, in consequence of suppuration, supply a continued irritation to keep up the inflammation around.

When the suppuration of the vomicæ at the root of the lungs only takes place, the functions of the organ are not greatly injured. The patient can lie on either side, and expand his lungs with freedom, and without pain; but the irritation is, in every case, felt at the extremity of the glottis; and when the functions of the lungs have been apparently free, the organs themselves have been found often flooded with purulent matter at their base.

If the breathing, in decided hectics, is sometimes little affected, so, in other cases, a purely catarrhal inflammation occasionally assumes all the symptoms of a certain decline. This has given a celebrity to Godbold's syrup, Hill's balsam of honey, and the ten thousand quack medicines daily swallowed, whose virtues are seriously attested. It is, we think, certain also, that vomicæ, in a state of suppuration, have been wholly discharged, and the wound healed by the efforts of nature alone. This event is, however, too rare to account for all that we hear and have seen; so that there is little doubt of the greater number of these successful cases having been merely catarrhal. The resemblance is so great that though we can sometimes discern the difference by that sagacity which experience gives, we know not how to describe it.

One striking feature of the hectic constitution is the great irritability of the arterial system, and this appears to be a leading symptom, for the constitution is marked by peculiar mobility and irritability of the nerves and muscles. We know not how to reconcile this state with what we conceive to be the distinguishing characteristic of the scrofulous habit, a want of irritability in the lymphatic system, admitting of congestion, or, still less, with a viscid fluid stagnating in the glands. Yet there is some evidence of the scrofulous habit abounding in albumen, since such constitutions contain a very small proportion of azote, the distinguishing characteristic of gluten and fibrin. We know that in these habits the oxygen is a predominating principle, since it is seen in the fair skins and the florid complexions: we know, also, that where oxygen is copious, the azote, and, consequently, the ammoniacal salts are less so. Some connection may therefore be traced in this way, but the chemical nature of our fluids has not received its due share of attention; and in this obscurity we cannot decide. We may resume the subject under SCROFULA.

The cure we professedly treated as empyrics, not to mix uncertain speculations with the decisions of sounder experience. Yet we think that they illustrate the practice, and it will detain us very little longer to point out the connection. Every mode of cure is directed to the effects only of the principal cause, and with reason, since the vomica itself is not within the extent of the nervous or circulating systems. The great object is to prevent or lessen inflammation in general; to lessen inflammation or accumulations in the lungs; to diminish the irritability of the arterial system; and by medicines which will not stimulate the action of the heart and arteries, or by their astringency impede expectoration, to add to the general strength. Under these heads all the medicines enumerated may be easily arranged; but it may perhaps be useful to repeat them in this form:

I. To prevent or lessen inflammation in general.
- *a* By abstracting from the mass of blood.
  - Bleeding.
- *b* By lessening its impetus.
  - Refrigerants.
  - Neutral salts.
  - Diæta imbecilla.

II. To lessen inflammation or accumulations in the lungs.
- *a* Topical bleeding by leeches or cupping glasses.
- *b* Blisters, setons, or issues.
- *c* Emetics.
- *d* Cathartics.
- *e* Diapnoics.
- *f* Expectorants.
  - Alliaceæ.
  - Balsamica.

III. To diminish the irritability of the arterial system.
  a Narcotics.
    Amara frigida.
    Cicuta.
    Aconitum.
    Opium.
    Digitalis.
    Myrrha.
  b Inirritants.
    Mild climate.
    Bristol waters.
    Breathing factitious airs.
    Hydrocarbonate.

IV. To support the tone of the system.
  Amara calida.
  Metallic salts or oxides.
    Iron.
    Bismuth?
    Mercury?

Some hints have been suggested respecting the possibility of dissolving these vomicæ, but no probable plan has been brought forward; and as the tumours are out of the circulation, we can scarcely expect that any such can succeed. The theoretical suspicions respecting the predominance of oxygen, and the diminished proportion of azote, are not on a sufficiently certain foundation to warrant us in drawing any consequences from them. They might, however, suggest in early youth the utility of sea water and sea-bathing; the advantages of breathing air of a lower temperature. The solvents of calculus are of more probable efficacy; yet experience leads us to doubt whether phthisis is in any case *caused* by calculi. In the few instances of this kind which we have seen, they were, if not an effect, an accompanying symptom. The hectic was previously established. For the cause of hectic fever see HECTICA. The modern language on this subject we shall consider under the article STAHLIAN SYSTEM, which it nearly resembles, but from which we cannot suspect that it was copied.

See Morton's Phthisiologia; Desault sur la Phthisie; Bennet's Theatrum Tabidorum; Boerhaave's Aphorisms; Wallis's Sydenham; Hoffmann; London Medical Observations and Inquiries, vol. iv. p. 289, &c.; N. Robinson, M. D. on Consumptions; Reid on the Phthisis Pulmonalis; Sim's Observations on Epidemical Disorders; Cullen's First Lines, vol. ii. p. 356, edit. 4; Medical Communications, vol. i. p. 359; Transactions of the College of Physicians, Philadelphia, vol. i. 1793; Stoll Ratio Medendi, iv. 117, &c.; De Haen Ratio Medendi, Pars xii. p. 254; Buchner de Morbis Viscerum Abdominalium Phthisin mentientibus; Simmon's Practical Treatise on Consumptions; Stark's Experiments.

PHTHI'SIS ISCHIA'DICA. See TABES COXARIA.

PHTHI'SIS PUPI'LLÆ. See AMAURO'SIS.

PHU. See VALERIANA.

PHYGE'THLON, (from φυω, *nascor*); is sometimes described as a broad, but not elevated, tumour, resembling a pustule, attended with pain, so violent as sometimes to excite fever, ripening slowly, and but partially converted into pus. Its general seat is in the arm-pits, neck, and groins. Celsus observes that this tumour is sometimes called *panus*, and occasionally ranks it among glandular swellings. It is certainly a disease of the conglobate glands, arising most commonly from poisons conveyed through them. See ERYSIPELAS.

PHYLACTE'RIA, (from φυλασσω, *to preserve*). See AMULETA.

PHY'MA, (from φυω, *to produce*). Preternatural tumours, especially of the surface, arising without any external cause, generated, increased, inflaming and suppurating in a short time. (See Galeni Commentaria in Lib. 6 Epidemicorum.) Paulus (Lib. iii. c. 22.) confines the term to the scrofulous tumours of children, or abscesses from tubercles, &c. It is also a little swelling like a boil, somewhat round and flatter.

PHYMO'SICA ISCHU'RIA. ISCHURIA, from a phymosis, q. v.

PHYSA'LIS ALKEKE'NGI, (from φυσαω, *to inflate*, because its seed is contained in a bladder). See ALKEKENGI.

PHYSCO'NIA, (from φυσκη, *an inflated bladder*); a hard tumour, occupying a large portion of the abdominal cavity, increasing very gradually, not sonorous, and without fluctuation. Dr. Cullen places this disease among the *intumescentiæ*, defining it a tumour, occupying chiefly a certain part of the abdomen, gradually increasing, neither sonorous nor fluctuating. Its synonyms are hyposarca and hyperserchidios. The species according to Cusson may be distinguished according to the viscera diseased, and are the *physconia hepatica, splenica, renalis, uterina, ovarialis, mesenterica, intestinalis, omentalis, polysplachnalis, visceralis, externa lupialis, externa schirrhodea, externa hydatidosa*, and an excrescence. Some tumorus on the skin are also called by the name *physconia*; but in no case is the disease within the reach of art.

PHYSICA, (from φυσις, *natura*). Natural science in general; but now chiefly confined to natural philosophy. It approaches natural history on one side, where it treats of the properties of minerals; and chemistry on the other, where its subject is the more subtile, insensible fluids of galvanism and electricity. See CHEMIA.

PHYSIOGNOMONIA, (from φυσις, φυσέος, and γινωσκω, *to know*.) It is not our design to trace all the fancies which have disgraced this science, but to speak of it as physiologists, with a view of illustrating some of the phenomena of the human system. It was first noticed in a philosophical view by Aristotle, illustrated by his commentator Baldus; and the observations of the Stagyrite dispersed in different parts of his works were arranged early in the seventeenth century by Fontanus. The doctrine has been supported by our countryman Robert Fludd, and by an author, Dr. Gwither, in our Philosophical Transactions. The subject became very fashionable in the sixteenth and seventeenth centuries; and has within these thirty years been revived by an author of eager zeal and a warm imagination, Lavater, whose eccentricities have rendered it interesting, and whose enthusiasm at one time almost convinced the incredulous.

The first question which will occur is, has this science, which may be styled that of judging from the features of the qualities of the mind, any real foundation except in fancy and enthusiasm? Common observation, the practice of anatomists in their denominations of the muscles, and of painters, have decided in favour of the existence of some foundation. In the great outline it is generally admitted; and when we find that frequent exertion

will add to the bulk of a muscle, rendering it also more mobile or irritable, it is not improbable that an indelible character of countenance may be imprinted. In less stronger points the contemplative countenance is distinguished from the spirited; and no one could see both Newton and Voltaire without at once perceiving the imprint of patient thinking in the one, and the active energy of genius in the other. Complacent attention, a sarcastic sneer, apprehensive distrust, confident resolution, and many other qualities, are visibly depicted, probably by the stronger swell of muscles constantly exercised. It is indeed character which gives the great diversity of countenances, as we have remarked in the article FEBRIS, for a likeness to parents is often observable in the last moments, or even after death, which had been never noticed during life. We have already mentioned this circumstance, and thought the remark new, but have since met with it in Lavater's Fragments; in Bartholine's Anatomical History, Cent iv. Hist. 31. An annotator, whose name has escaped us, we recollect has also remarked, that a returning likeness to parents or ancestors is a fatal symptom. Dr. Smith has observed, that even the peculiar features of negroes are changed when their occupations require study and reflection.

Physiologists have also distinguished peculiar constitutions, which they have styled temperaments, accompanied with appropriate faculties of bodies and minds. These we know appear also in the features; and we connect, from experience, the adust, melancholic temperament with intense thought, deep, abstract speculation, and a mind retentive of impressions; the fair, ruddy, sanguine temperament with eagerness, volatility, and restlessness. These we know are transferred from parents to their offspring. Various occupations give a distinguishing cast of features, derived from the business in which successive days are employed. Intemperance is distinguished not only by the absence of a prepossessing openness, but that insensibility which in a greater degree characterises intoxication. Idleness not only destroys expression, but gives a vacuity or confusion. Benevolence, with an expanded eye, contrasted with the contracted squint of suspicion, assumes that appearance which it so frequently employs.

So far will physiology go hand in hand with the physiognomist; yet there is one part of his system which we cannot reduce to these principles, though certainly well founded, we mean the high, arched, and expanded forehead, which generally accompanies genius, observation, and judgment. We can only connect it with one remark, that it distinguishes most strikingly the human form from that of animals which approach it, though with greatly inferior understandings. Shakspeare, when he would describe a transformation by enchantment into something mean and ugly, describes the change as into

> ———— barnacles and apes,
> With foreheads *villanous low*.

In this we may be thought to approach the fancies of Gall, which we have noticed as the Cynthia of the minute, without engaging in its defence or confutation. By the way we may mention a late contest between Dr. Gall and one of his most eager opponents at Heidelberg, professor Ackerman; a contest of words only. The former, it is said, displayed sagacity and discernment without depth; a spirit of observation without philosophy; an extensive and accurate memory without a speculative genius. The professor, on the contrary, was precise, energetic, occasionally dogmatical, but strictly logical; though Gall might say

> Si quæritis hujus
> Fortunam pugnæ, non sum superatus ab illo.

The physiognomist, however, steps beyond his limits when he speaks of distinction from gait, from gesture, &c.; for though guilt will generally be betrayed by suspicion, confidence will often cover the apprehension; and, mauvaise honte, will often give the most collected philosopher the appearance of hasty unsteadiness. The physiognomy of an apple, or a glass of wine, is truly ridiculous; we prefer, indeed, but often from the most trivial circumstances.

The great point of distinction, the arched forehead, may occasion some speculations, since the loss of a large part of the cerebral hemispheres is not followed by a diminution of the intellectual functions. Yet we have remarked the large bulk of the brain in the human body, and the necessity of a free communication through, as well as an equable excitement in, every part of it as subservient to intellectual operations; and though a part may have been destroyed, there are few whose intellectual functions are so numerous and varied as to find the deficiency. If the accident occurs only once among ten millions, and the greatest mental exertions are scarcely found in all the individuals of the globe during a whole century, it will be obvious that the loss will not be readily detected in its effects.

The forms of parents descend, we have said, often to the children, and, with their forms, their manners, and very frequently their intellectual distinctions. This similarity, often obvious, when the children have not recollected their parents in consequence of their early death, and which cannot have been the effect of imitation, we have often observed with astonishment; and it seems to show that we are more perfectly material than philosophers have supposed; at least the intellect is modified by the corporeal organs, for the body is the instrument only of the immaterial agent. But these discussions would lead us too far.

One only consideration remains of importance to us as physiologists, viz. whether the resemblance which is often seen between the human face and that of some animals influences a similarity of disposition. In the opinion of Lavater it does so; but from attentive observation we have not found it to be true. We can only draw this general conclusion, that the farther the form of the head recedes from that perfect commanding look which the Almighty has imprinted on its most perfect creatures, so far are the intellectual faculties inferior.

What may be styled medical physiognomy, or those changes of features indicative of and peculiar to different diseases, is a subject of great importance, and has not been sufficiently noticed. We shall speak of them in general under the head of PROGNOSTICS; but shall find it a difficult task, for want of a technical language sufficiently expressive. How various are the expressions, for instance, of debility only in fever, chlorosis, phthisis, scurvy, syphilis, hysteria, expectation baulked, hope delayed, misery, and despair. Yet they may be distinguished by an experienced eye, at least with no

very great chance of error; but where are the words to describe what a single glance will tell?

See Physiognomonici Veteres, 8vo. 1780; Lavater's Fragments by Hunter; Lancisi de Physiognomonia (in operibus); Baptista Porta de Humana Physiognomonia; Helvetii Microscopium Physiognomoniæ Medicum Amstælod, 8vo.

PHYSIOLO'GIA, (from φυσις, *nature*, and λογος, *a discourse*). PHYSIOLOGY, which from its derivation seems to imply a discourse on the objects of nature, has been long confined to disquisitions respecting the cause of the vital, animal, or natural functions of the human body. It treats therefore of the internal motions of the animal frame; the offices of the different viscera; the changes in the fluids; as well as the powers by which life is supported. The various senses; the means by which we receive ideas of external objects; the influence of the mind; the changes of our aliment into the animal fluid blood; and the means by which successive generations are raised to fill this sublunary sphere; are equally parts of this subject. We need not enlarge farther in the enumeration, since under the article FUNCTIONS, q. v. we have inserted the arrangements of Richerand and Vicq. d'Azyr, illustrating the different parts of physiology.

This branch of medicine was for a long time imperfectly cultivated, and indeed until the circulation of the blood was understood, the various functions of the animal frame must have been obscure. Plastic powers, appetites, or a superintending archæus, solved the various difficulties which arose; and physicians were contented to observe what they were unable to explain. The anima medica of Stahl cut the knot; and Hoffman with patient industry made very slow approaches to an explanation of our functions. Lancisi, Baglivi, Hales, and Willis, were more enterprising; and in the latter the curious reader may find many valuable hints, the germs of some modern discoveries. Borelli and Bellini in their own departments added also to our knowledge. In fact, however, physiology did not assume a scientific form till Boerhaave collected the scattered limbs from various authors, particularly the mechanical physicians, and compacted it into a system peculiarly elegant and comprehensive, but unfortunately erroneous, from the little attention he paid to the vital powers. Even in the commentaries of Haller on the Institutions, no better reason was given for paleness in consequence of terror, and for blushing, except the contraction of little nerves round the extremities of arteries in one case, and their relaxation in another. In more advanced life Haller distinguished with more accuracy between irritable and inirritable organs.

The Elementa Physiologiæ of this eminent author display the most unwearied industry, and contain an immense variety of facts on every branch of the subject. Unfortunately not a ray of genius animates the work; no comprehensive views unite the different observations into a luminous focus; no connecting links show their bearings on each other. They are pearls hung together by the slightest string; and, what is of more consequence, there is seldom any distinction between what is true, doubtful, or evidently erroneous.

Since that period, the discovery of the lymphatic system, the experiments of Sir Clifton Wintringham on the comparative density of the arteries and veins, the pneumatic chemistry, and the analysis of the animal fluids, have greatly contributed to illustrate physiology. In the progress of our knowledge on this subject, Dr. Cullen, by his attention to the functions of the brain and nerves, not only cherished a neglected branch, but combined the whole into a comprehensive system, with a labour and a degree of attention, however, not duly proportioned, for the nervous system was his favourite offspring, which he cherished with peculiar care. Since this era we have received no very extensive views on the subject of our science. Richerand and Girtanner; Ludwig and Spalanzani; Fontana and Camper; Fourcroy and Valli, have cultivated different detached spots, but we yet want a general abstract, comprehensive and connected. The works of Richerand and Dumas are the most complete that we have yet received; and the scattered limbs of the present volumes would afford it, were they brought together; we may perhaps make some efforts to give them an arrangement and a form.

In general, physiology has been closely connected with anatomy, and has always formed a part of the different anatomical courses. It rests indeed on the structure of the parts; and the "First Lines" of Haller are almost wholly descriptive. The slow progress of correct anatomy accounts sufficiently for the imperfect state of physiology; and though many parts of the body are apparently not useful in illustrating any function, yet the connection of the whole is so intimate, that one part only cannot be separated with the slightest prospect of advantage. A solitary branch of the ulnar nerve, coming from the dorsal vertebræ, explains the cause of a separate affection of the ring and little finger, and sometimes leads us to the most effectual mode of relief.

As a basis of physiology, comparative anatomy should also be studied, and we have now excellent assistants in Cuvier and Blumenback. The ancients dissected animals, but they described the organs as belonging to the human body; and comparative anatomy is only useful when the human structure is well understood. It was doubted, for instance, whether the bile was secreted from the liver or the coats of the gall bladder, till it was found that many animals wanted the vesica; but in no one did this supply the place of a liver: an organ more indispensable to animal life than even the brain.

The dissection of living animals has not so well founded an apology. They teach us how bones grow, and are united when broken; and they show to the eye motions which without that evidence we know to exist. We know also that galvanism and electricity excite the action of muscles without mangling living frogs.

The use of microscopes and injections teach us, in some degree, the structure of different organs, but their application is limited. No microscope shows the change which takes place in the simple muscular fibre during its contraction, or the nervous fluid acting in the nerve; no injections teach us why the minute convolutions of vessels in the testes secrete only semen, or arteries, branching at large angles, are necessary for the separation of bile.

All the animal functions consist, it is acknowledged, in motion, and this was the great argument of the mechanical physicians in favour of their own solutions.

They did not, however, reflect that the human machine differed essentially from a passive engine; that violent motions sometimes arose from slight causes; and again, that impediments which ought to have stopped, scarcely lessened and sometimes increased them. They seemed not to be aware that the muscular fibre could be shortened beyond their calculations; and that the motion of fluids in vessels, which continually impelled them, was different from the motion in a canal, which only reacted in proportion to the impulse. These were truths which Haller saw imperfectly when he compiled his physiology; but he neglected them to follow the mechanical explanations which he had collected in the school of Boerhaave. They were truths which Cullen saw, and followed with avidity to their consequences, tracing them also backward, so far as he was able, to their cause.

The order in which physiologists have arranged their observations is different. They sometimes trace the nourishment from its first reception into the stomach to the lymphatics, and into the circulation, introducing the functions of the lymphatic, the arterial, and venous systems. The changes produced in the blood by respiration follow; and an account of the separation of the various fluids either nutritious, digestive, or excrementitious, succeeds. Sensation, motion, with its various modifications in different functions, conclude. Haller has taken a different course. From the fibre the transition to the muscles is easy, and the heart and arterial system, with the circulation, next share his attention. The functions of secretion, of respiration, and speaking, follow. The brain, nerves, muscular motion, the external and internal senses, deglutition, digestion, with the various chylopoetic organs, and the successive changes of the aliment into chyle; the urine, semen, the female, uterine system, and the fœtus, are described in their order. Life and death close the scene.

This undoubtedly is not a natural order, nor is it the most judicious or convenient. We ought certainly to begin with the *source* of sensation and motion in the brain, following it to the extremities of the nerves as the cause of either. With motion is connected the action of the heart and the arterial system, which should be also followed to the secretory organs, and it will include all the peculiarities of the uterine and genital systems. The supply which keeps up the activity of the nerves and muscles brings us to digestion and all its consequences, particularly the lymphatic system. This again introduces the fœtus, first probably nourished by absorption, to life in its various successive stages, and its ultimate termination in death. See CEREBRUM and CEREBELLUM; SENSATIO; OCULUS; AURIS; TACTUS; NARES; GUSTUS; COR; ARTERIÆ; SECRETIO; JECUR; TESTES; UTERUS; DIGESTIO; LYMPHÆDUCTUS; GENERATIO; FŒTUS; VITA; MORS.

PHYSOCE'LE, (from φυσα, *flatus*, and κηλη, *a tumor*). See EMPHYSEMA.

PHYSOME'TRA, (from φυσα, *flatus*, and μητρα, *the womb*). A TYMPANY OF THE WOMB; *hysterophyse*; Dr. Cullen places this disease in the order *intumescentiæ*, defining it a light elastic tumour in the hypogastric region, from figure and situation resembling the uterus. It is formed by air distending the womb, which may be discharged by rendering the os uteri internum pervious.

PHYTOLA'CCA AMERICA'NA, (from φυτον, *a plant*, and λακκα, because it resembles in colour gum lac). *Solanum magnum Virginianum rubrum; solanum racemosum Americanum; phytolacca decandria* Lin. Sp. Pl. 631; PORK-PHYSIC; PORK-WEED; POKE-WEED; RED-WEED OF VIRGINIA; RED-NIGHTSHADE. It is a North-American plant, with a strong stem and many branches. The leaves are large, smooth, juicy, oval, and entire, and placed alternately. The root is large and perennial, runs deep into the ground, and divides into many branches.

The leaves are anodyne, and sometimes when young eaten as spinage; and the juice of the root is an active purgative. That of the whole plant is sharp and corrosive: it is not used inwardly; but, inspissated in the sun to the consistence of an ointment, is applied to cancers and to ulcers with callous edges. Its juice when dry is useless. If the roasted roots are beat into a poultice, and applied to ulcers with callosities, it dissolves them. See Medical Museum, vol. i. p. 85.

Solanum Barbadense, another variety, is distinguished only by its lesser fruit.

PI'A MA'TER. The AFFECTIONATE MOTHER; (from its closely embracing the brain and nerves); *localis membrana, meninx tenuis;* the membrane which immediately involves the brain, so thin as to be invisible were it without vessels. The brain is divided into lobes, which consist of convolutions, resembling in appearance the intestines. The pia mater covers the whole external surface, and sends processes between these convolutions. The principal vessels that go to the brain are dispersed on the pia mater; so that it connects the lobuli of the brain, and supports the vessels. A third covering, the arachnoides, is placed between the pia and the dura mater, sometimes supposed to be the external lamella of the pia mater; but the distinction is of little importance. See DURA MATER.

PIAN. *Frambœsia Culleni.* See YAWS.

PICA. The PIE, (from the bird, said to be subject to this disease); *malacia, allotriophagia, citta, cissa;* LONGING; is a preternatural appetite in pregnant women, and some sick persons on their recovery. The disorder consists in an appetite for things unusual either to eat or drink. Dr. Cullen places this disease in the order *dysorexiæ*, defining it a desire of eating things not fit for food. In pregnant women it is somewhat relieved by bleeding, and about the fourth month disappears. Chlorotic girls are also subject to this complaint; but whether in pregnant women, persons recovering from an acute fever, or those who labour under obstructions of the natural evacuations, this craving may be safely indulged.

It is in fact a species of cachexia, and the fancies are as numerous as the substances. They are often calcareous; but among the negroes any dirt is devoured, and they are called the dirt eaters. Sometimes the most disgusting substances are coveted; and we have heard a lady relate the artifice by which she procured a loaf to be dropped into a barrel of pitch. In general, however, the sound of brittle substances, as cinders, or pipes, between the teeth, seems to please as much as the taste, and even treading on cinders is apparently grateful. We might easily fill a page with instances and quotations of cases in which this depravity has been observed; but

it is unnecessary to extend the article, except to remark that the supposed final cause, the absorption of acid, is erroneous, since the substances chiefly coveted are not always, or indeed very generally, antacid.

PICE'A, (from πίσσα, *pitch*). See Abies.

PICE'LT. See Nicotia'na.

PI'CINUM O'LEUM. See Brutia.

PICRO'CHOLOS, (from πικρος, *bitter*, and χολη, *bile*.) A person subject to anger, or abounding with bitter bile.

PI'CTONUM CO'LICA, (from Poitou, where it was endemic). See Colica.

PIE'DRA DI CO'BRA. See Cobra de capello.

PIE'RRE NOIRE. See Ampelitis.

PIGMENTUM. The mucous, coloured substance which gives the splendid hues of the iris, and the darker matter which covers the choroid coat. See Oculus.

PIG-NUT. See Bulbocastanum.

PI'LA HY'STRICIS, (from *pileo, to bind together*): See Bezoar hystricis.

Pi'la mari'na. A species of alcyonium, or a round spherical ball found on sea-coasts amongst sea-weeds. Lemery describes it to be about the size of a fist, lanuginous, of a dark colour, formed by a collection of hairs, sand, and other impurities of the sea, united by means of a glutinous fluid. It is said to kill worms; and Zwelfer tells us that when calcined it is useful in scrofula.

PI'LEUS, (from the same). See Cucupha. In anatomy the coif with which some children are born; and then called *pileolus*, *galea*, and *vitta*.

PILMI'CTIO, (from *pilus, hair*, and *mingo, to discharge urine*). A discharge of fibres resembling hairs with the urine.

PILOSE'LLA MA'JOR, (from *pilus*, because its leaves are hairy). See Hieracium alpinum, and Gnaphalium montanum.

PILO'SUS. See Capillaris.

PILOTHI'SMATA. Applications which take off the hair; Depilatoria, q. v.

PI'LULA, (from *pila, a ball*); *catapotium, gongylion*. Pills are a form well adapted for medicines which operate in small doses, are offensive to the taste, or so heavy as not easily suspended in, or mixed mechanically with, any fluid. They dissolve with difficulty, and produce very gradual and lasting effects. Gold and silver leaf often hinder the pills from dissolving; therefore should seldom be used.

This is a term also given to several compounds, many of which will be found under some of the principal ingredients, as pilulæ è gummi. (See Asafœtida.) There is a variety of formulæ of this kind in the Pharmacopœia Chirurgica, composed of very active ingredients, as different preparations of quicksilver, cantharides, cicuta, cuprum vitriolatum, opium, turpentine, and vitriolated zinc, which may be found in that work under the term pilulæ.

PI'LUS, (from πιλος, *carded wool*). See Capillus. We resume the subject of hair (see Capillus) to supply some accidental omissions, and to add the late experiments of Vauquelin, which have added somewhat to our knowledge of the subject. We have already mentioned that the hair is hollow, and that it grows from a bulbous root, resembling in many respects a vegetable substance. The larger extremity of the oval root is downwards, and the whole is connected to the skin or to the adipose membrane by small filaments, probably nervous and arterial. The root itself, next the branch, seems to be composed of very fine filaments, and a glutinous substance, probably secreted from its vessels. These filaments unite to form the stem, which is covered by an elongation of the external, somewhat elastic, coat of the bulb. The stem or hair passes usually between the papillæ, and sometimes seems to penetrate a papilla; but when it emerges from the cuticle the latter appears to closely embrace, and to be continued some way on it; this membrane is gradually lost. When the cuticle is porous, as in the scalp, the hair seems to pass out in a cylindrical form, but where less so, and particularly where the bulb is buried in fat, it passes in a serpentine direction, with great difficulty, as in the axillæ, &c.; and it is then tortuous and angular. It has been supposed that this is partly owing to the warmth, since the same curl is found in the hair of negroes; but the Malay, in an equally hot climate, has straight, cylindrical hair. The hair is nourished by the gluten of the root; and as this is more copious, or more fluid, it is more succulent. When in a smaller quantity, or more dense, the hair is dry, crisp, and soon falls off. When not carried to the extremities these split and become brittle.

The roots or bulbs of hair are found over the whole body; nor is it easy to say why they continue to vegetate on some particular parts only. They are said to have been found also in abscesses of the abdomen, in the fluid of an ascites, in the veins, on the tongue (Amatus Lusitanus), and in the heart. We can neither confirm nor oppose these assertions; and it is not more difficult to account for such appearances than to explain why hair does not grow on the back, on the shoulders, or the neck. Hair in the ovaria is by no means uncommon, and may be owing to the rudiments or remains of an imperfect conception. It has been supposed that the hair grows after death. To prove a negative is a difficult task; but were this true, it must have been long since placed beyond dispute. The long hair found in persons after having been buried many centuries may have been natural. The observations of most importance on this subject may be found in Heister's Anatomy, and Camerarius' Memorabilia, iv. 47.

The hair evidently partakes of the nature of the simple solid, corresponding with it in firmness or softness. The bulb is nourished by arteries and supplied with nerves; but there is no reason to suppose the hair itself nervous, and it chiefly grows by gradual additions at its extremity. The circulation through it is probably carried on by capillary attraction, or in the manner in which the sap of vegetables is propelled. By combing we free the fluid from those obstructions which must arise in consequence of its being bent in all directions; and perhaps by drawing out the hair we straiten the canal, and render it more strictly capillary. We promote also the circulation through the bulb, and relieve the head from accumulations; for though the vessels of the bulb are small they are numerous.

Long hair has always been esteemed an ornament, but it has been doubted whether it was not injurious, by the quantity of blood which it exhausted in its nutriment, and the consequent debility which it would produce. When very thick it is uncomfortable from its

warmth, but we have never known it to be a cause of weakness, except from the perspiration which a large mass of hair must occasion. Cutting off the hair has within our own knowledge been often injurious, and attended with every appearance of local plethora. As usual, moderation is the best; and if it hang over the shoulders it is long enough, unless it grows at the same time thinner, and in that case it must be cut shorter. As a remedy for the head-ach, to cut off the hair is as ridiculous as to prevent the access of air with the design of accelerating evaporation.

Such was our knowledge on this subject when, in the autumn of last year, M. Vauquelin read to the National Institute a memoir on the nature and composition of human hair. Hair was not, he found, soluble in boiling water; but when exposed to a greater temperature in Papin's digester it was readily dissolved. From a solution of black hair a black matter was deposited, found to be an oil of the consistence of bitumen, with iron and sulphur. The last ingredient seems to point out the source of the smell of the hair in some constitutions, where perhaps it is in excess, or where it may be accidentally combined with an alkali. This idea is confirmed by the analysis of red hair, in which the odour is stronger, for it contains a much larger proportion of oil and sulphur, with less of iron. Alcohol extracts from black hair a whitish oil, and a greyish green oil, which separates as the alcohol evaporates. It is probable, therefore, that the black matter is gummy or albuminous; and the white is said to resemble spermaceti in appearance, though it differs in chemical affinity. Red hair affords a white, and, instead of a greyish green, oil as red as blood.

The other component parts of hair were a mucous substance, iron, oxide of manganese, phosphate and carbonate of lime, flint, and a large proportion of sulphur. White hair contains also phospate of magnesia, and its oil is nearly colourless. When hair becomes suddenly white from terror, Vauquelin thinks it may be owing to the sudden extrication of an acid, as the oxymuriatic acid whitens black hair; but it may be more probably owing to the sulphur absorbing the oil, as in the operation of whitening woollen cloths. From some experiments made on the matter which occasions the plica polonica, he thinks that disease owing to a superfluous excretion of the fluid which nourishes the hair; but it is sometimes bloody, and if the hair is cut off, the disease, it has been said, is fatal.

To increase the growth of hair various preparations have been employed, and each perfumer has his secret, though we know not any are particularly successful. They chiefly consist of warm, stimulating, oily substances, to increase apparently the circulation through the bulb, and probably to check the perspiration. A fluid seems to exude through the hair, at its basis, and is probably the black matter which unites with the perspiration, producing the scales that soon form on the scalp if combing is neglected. Powder is useful in absorbing this matter, and preventing its concretion into flakes; but if this is not used, dark hair soon stains the comb, and proves the existence of its exudation.

Of the boasted Depilatories, q. v. we have mentioned quick lime and orpiment (see Rusma), which Spon in his Travels through Italy mentions as chiefly successful; but various others have been added. Kircher recommends the blood of a bat (mundus subterraneus); Laurentini, the bulb of the hyacynth; Morin, the exudations from a vine; and friction with a pumice stone has been used; but none will succeed unless the bulb be destroyed, and extirpation is the only remedy. For increasing the hair we find the aqua stercoris humani recommended by Schroeder; and for blackening it the stercus hirudinum!

PIMENTO, (from *pimienta*, Span.). See Piper Jamaicensis.

PIMPERNELLA. See Anagallis.

PIMPILIM. See Piper longum.

PIMPINELLA, BIPINELLA, called from the double pennate order of its leaves. Burnet saxifrage, called *saxifraga* because it grows out of and seems to break through the rocks; *sanguisorba, pimpinella minor, tragoselinum*, smaller burnet saxifrage, *pimpinella, saxifraga α*. Lin. Sp. Pl. 378. A perennial umbelliferous plant, growing in dry pasture grounds. It is sometimes the name for agrimonoides; the *poterium hybridum* Lin. Sp. Pl. 1412.

Pimpinella alba germanorum, *pimpinella saxifraga major, gypsophyton*. Greater white burnet saxifrage; *p. saxifraga* Lin. Sp. Pl. 378, β. γ. δ. Some of its leaves are deeply cut; the odd one into three sections; common in Germany, but rarely met with in England. The roots have a hot, pungent, but not durable, taste. When fresh they affect the eyes like mustard and horse-radish. In drying they lose all their volatility; and water partially extracts their virtue, but spirit completely. When distilled with water they afford a small portion of oil, which is highly acrid. These roots are warm, stimulating, aperient, and diuretic. Bergius considers them also to be diaphoretic and stomachic; and they are often recommended where pituitous humours are supposed to prevail, as in asthmas, catarrhal coughs, in what has been called *angina serosa*; by Hoffman in chlorosis: it has also been employed by way of gargle, for dissolving viscid mucus, and to stimulate the tongue when paralytic. Its dose in powder is ℈ i. in infusion ʒ ij.

The species called *nigra* grows wild in Germany and Switzerland, and yields a blueish oil. Whatever has been said of the value of these as medicines by Stahl and others, they are not used in the present practice.

Pimpinella anisum, Lin. Sp. Pl. 379, *anise*, which furnishes the aniseeds of the shops. See Anisum.

Pimpinella, italica of some foreign pharmacopœiæ, is the *sanguisorba officinalis* Lin. Sp. Pl. 169. It is not used in this country. Like the other species of pimpinellæ, it is a stimulant only.

PINASTELLUM. See Peucedanum.

PINEALIS GLANDULA, (from *pinea, a pine-apple*), to which it hath some resemblance. The pineal gland. See Cerebrum.

PINEUS PURGANS. See Cataputia minor.

PINGUEDINOSA MEMBRANA, (from *pinguedo, fat*). That portion of the cellular membrane which contains the oily matter or fat. See Cellulosa Membrana.

PINGUEDO. See Adeps.

PINGUICULA, (from *pinguis, fat*, because its leaves are oily to the touch). See Sanicula ebor.

PINHONES. See Cataputia minor.

PINNA, (*πιννα, a wing*). The lateral and inferior

parts of the nose are called *pinnæ* and *alæ nasi:* the superior broad parts of the ears are also called pinnæ. See AURICULA.

PINNA'CULUM FO'RNICIS GUTTURA'LIS, (from its resembling in shape *pinna, a wing*). See UVULA.

PINNA'TUS, (from *pinna, a wing*). The epithet of a leaf composed of many smaller leaves growing on the side of the footstalk, like the feathers of a wing.

PI'NON. See BRYTON.

PI'NUS; (from πίτυς, *the pine-tree*); *peuce, pinus pinea* Lin. Sp. Pl. 1419; differs from the fir-tree by its leaves standing in pairs, while those of the fir are solitary. The pine abounds with a resinous juice similar to that of the fir-tree. The cones are agreeable to the taste, similar in quality to the sweet almonds; and used chiefly as demulcents. The frankincense, which has been supposed the production of a species of pine, is from a species of juniper, or, more probably, of the amyris. See THUS.

The bark of all the pine-trees is astringent, and the tops are antiscorbutic; but their virtues chiefly depend on the turpentine they contain. Raii Historia. See ABIES.

PI'NUS IN'DICA, NU'CLEO PURGA'NTE. See GRANA TIGLIA, under CATAPUTIA MINOR.

PI'PER, (from πεπτω; because it assists digestion), PEPPER, *arum moschatum, piper nigrum* Lin. Sp. Pl. 40, *p. aromaticum* of La Marck, is the small round aromatic seed of a trailing plant, which grows in Sumatra, Java, and Malabar.

When ripe and decorticated it is styled white pepper, supposed formerly to be a different species, and called *leuco-piper*. It has been said, however, that there is a variety of the plant which produces the white seeds, which is much superior to the factitious; but we can find no sufficient authority for the fact. The white pepper brought to us is inferior in pungency, as well as in flavour, to the black.

The pepper is externally corrugated by drying in the sun, but the ripest, fullest seeds have the fewest wrinkles, and are the best. Pepper appears to be a more general and permanent stimulus than other spices of equal pungency on the palate; and its stimulus does not reside in the volatile parts or essential oil, but in a resinous substance which does not rise in the heat of boiling water. Pepper infused in water impregnates it very strongly with its flavour, but not with its taste; by a slight boiling more of its pungent matter is extracted, and its flavour dissipated. Distilled with water, a light, mild, limpid oil is obtained, which excites only on the tongue a grateful moderate warmth. Rectified spirit completely extracts the pungent part of the pepper; and when the tincture is evaporated a still more fiery extract is left behind. The quantity of extract is nearly the same from the white pepper, but it is less pungent. Peppers, particularly black, have been used as stimulants and aromatics in vertigo, paralytic and gouty disorders: in large doses it has cured intermittents, though in some instances it has produced fatal consequences from its stimulus. In ulcerated throats, biting constantly pepper-corns is an excellent remedy, equal to the capsicum gargle of the West Indies. For its diætetic use see CONDIMENTA.

PI'PER I'NDICUM, *capsicum, lada chilli; vallia-capo molago, solanum urens, siliquastrum Plinii, piper hispanicum, lusitanicum, turcicum, brasilianum, guineense, calecuticum*, GUINEA PEPPER, *capsicum annuum* Lin. Sp. Pl. 270, is in long roundish taper pods, divided into two or three cells full of small whitish seeds; a native of the East and West Indies. When this fruit is fresh it hath a penetrating acrid smell: to the taste it is highly pungent and acrid, producing a painful burning in the mouth like that from arum-root. Rectified spirit dissolves its pungency, and the extract is excessively fiery. This kind of pepper is given in small quantities as a most active stimulus in cold, phlegmatic temperaments, in some paralytic cases, in relaxations and insensibility of the stomach, for promoting the efficacy of aloetic medicines, and the deobstruent gums in uterine disorders. When dry it is without odour or particular flavour, and so readily diffusible that it joins agreeably and conveniently with any sauce. It promotes digestion; but much of its pungency is lost on the palate unless given in pills, and it seems not to be an active stimulus to the arterial system. Bergius has often seen long protracted intermittents cured by the following powder, without any relapse. Six grains of Indian pepper and two scruples of bay berries, in powder, divided into three portions, one of which was given on the approach of the first rigor, another the day following at the same hour, and the last on the third day. (Cullen's Materia Medica.) In climates of which capsicum is a native, we are told that its use is salutary, that it strengthens the stomach, assists digestion, and corrects the putrescency so common in hot climates: as a stimulant of the most acrid kind it may be found efficacious in some paralytic and gouty cases, or to promote excitement where the functions are languid and torpid. In the cynanche maligna it has been successfully exhibited in a gargle; and in the cachexia Africana, considered as the most frequent and fatal predisposition to disease among negroes, in a dose from six to eight grains it is often useful. (Mackittrick.) A species of this plant called in the West Indies BIRD-PEPPER, is the basis of a powder brought from thence under the name of *Cayenne*, or CAYAN-PEPPER. The four species of this pepper, which grow in Guinea, are the *chilchotes, chilterpin, tenalchiles*, and *chillpelagua;* that which grows in Peru is called *agy*.

PI'PER JAMAICENSE, *piper caryophyllatum, cocculi Indi aromatici; piper chiapæ; amomum; caryophyllus aromaticus Americanus; pimenta; piper odoratum Jamaicense;* ALL-SPICE and JAMAICA PEPPER is the dried unripe aromatic berry of a large tree, growing on the mountains of Jamaica; *myrtus pimenta* Lin. Sp. Pl. 676. It is moderately warm, of an agreeable flavour, somewhat resembling a mixture of cloves, cinnamon, and nutmegs, consequently called *all-spice*. On distillation it yields an elegant essential oil, which sinks in water; and is moderately pungent, in smell and flavour approaching to oil of cloves, or rather a mixture of those of cloves and nutmegs. The remaining decoction, inspissated, leaves an unpleasant extract, not pungent, and the berry itself is wholly deprived of its taste as well as flavour. Rectified spirit extracts all its virtue, but yields nothing on distillation. The spirituous extract consequently possesses its whole virtue, viz. a pungent warmth, less fiery than that of the black and white peppers.

A distilled water, from half a pound of this pepper to three gallons of proof spirit, is substituted for the *aqua aromatica*, and the *aqua mirabilis* of former dispensatories The London College order a water to be made from half a pound of the berries of pimento bruised, put into a sufficient quantity of water to avoid an empyreuma; from which, after maceration for twenty-four hours, one gallon is to be distilled, *aqua pimento*. Ph. Lond. 1788.

The oil of Jamaica pepper is sometimes substituted for the oil of cloves, and is very little inferior to the oil of nutmegs.

PI'PER LO'NGUM, *macropiper, acapatli, catu-tripali, pimpilim*, LONG PEPPER, *piper longum* Lin Sp. Pl. 41, is brought from the East Indies. The pods are round, about an inch long, containing numerous minute seeds. These are hotter and more pungent than the other peppers; but in pharmaceutic properties the same, though in Dr. Cullen's opinion weaker.

The black pepper is most agreeable to the palate, and chiefly employed as a condiment; the *long* is most used in medicine; the *white* is seldom employed in either. When astringents have failed, a diarrhœa hath been cured by ℈i. of pepper with ʒss. of diacodium, twice a-day.

PI'PER LO'NGUM FOLIO'RUM NERVIS, &c. See BETLE.

PI'PER MONA'RDI. See BUYO BUYO.

PI'PER MURA'LE. See SEDUM.

The other species of peppers are of little value in medicine. See Neumann's Chemical Works. Lewis's Materia Medica.

PI'PER CARYOPHYLLA'TUM. See PIPER JAMAICENSE.

PI'PER CAUDA'TUM, and CUPEBA CUBEBS. See NHANDU, and CUBEBÆ.

PI'PER CHIA'PÆ. See PIPER JAMAICENSE.

PI'PER TAVASEI. See CASSIA CARYOPHYLLATA.

PIPERI'TIS, (from its biting taste). See LEPIDIUM.

PIRAMIDA'LIA CO'RPORA. The small eminences on the lower part of the MEDULLA OBLONGATA, q. v.

PISCA'TOR RE'GIS, (*piscor, to fish*). See ALCEDO.

PISIFO'RME, OS, (from *pisum*, and *forma*). See LENTICULARE, and CARPUS.

PISSÆ'UM I'NDICUM. See PETROLEUM BARBADENSE.

PISSASPHA'LTOS, (from *πισσα, pitch*, and *ασφαλτος, bitumen*). See BITUMEN.

PISSASPHA'LTUM. See MUMIA.

PISSELÆ'UM, (from *πισσα, pitch*, and *ελαιον, oil*). OIL OF PITCH, *bitumen Barbadense*, is prepared by boiling pitch, over which wool is suspended. When it is soaked with the rising vapour, it is said to be wrung into a vessel, and this is repeated as long as the pitch is boiling. The common method of distilling to obtain essential oil is more probably used. See PIX LIQUIDA.

PISSI'NUM O'LEUM. See BRUTIA.

PISTA'CHIA LENTISCUS. See LENTISCUS.

PISTA'CHIUM, PISTA'CIA, *terebinthus Indica Theophrasti*. The PISTACHIO NUT-TREE.

Pistachio nuts are oblong and pointed, about the size and shape of a filbert, including a kernel of a pale greenish colour, covered with a yellow or a red skin. They are brought from the Levant. The kernels are agreeable to the taste, sweetish and unctuous, resembling in their nature almonds. See Raii Historia.

PISTI'LLUM, (from *pinso, to bruise*). A PESTLE. In botany, a PISTIL, or POINTAL, that column or set of columns which occupies the centre of the flower, rising on the top of the embryo, generally surrounded with the chives. They are supposed by Linnæus to be a continuation of the medulla or pith; and differ greatly in their form, for in some flowers they are roundish, in others triangular, oval, or square. The pistillum is the female part of generation, whose office is to receive and convey the pollen to the fruit. It consists of GERMEN, STYLUS, and STIGMA.

PISTOLO'CHIA, (from *πιστος faithful*, and *λοχεια, parturition*; because it was thought to promote delivery). See SERPENTARIA VIRGINIANA.

PI'SUM, (from *πισος, a garden*; because it was a garden vegetable). The PEA. Of these there are various species, but they are not medicinal; they are less nutrient and less flatulent than the bean, and generally more tender; the sweeter and more mucilaginous kinds are the more nutritive. See ALIMENT.

PI'SUM ARBORE'SCENS. See CAJAN.

PITU'ITA, (from *πητυα, coagulum*, from its consistence). PITUITA.

This term strictly means the thin lymph which distils from the nose, and from the Schneiderian membrane in all its extent; but it is most frequently confined to defluctions from the nose, and accumulations in the stomach. Pathologists have, however, seized on the term as a convenient appellation for fevers of a particular kind; and much confusion has arisen from the extensive indiscriminate use of the word. We are ashamed to say how much labour has been employed to collect in a comprehensive view what authors have said on the subject; but though we have mispent our own, we shall respect our reader's time.

The original meaning of the word was a defluction from the head, and it was supposed to pass from the brain through the foramina of the cribriform bone into the nose. It is amusing to see the difficulties which the ancient pathologists felt in finding a passage for it; but we are gravely told by some authors that it passes down in the form of vapour; and it is plainly hinted that it is condensed by cold, or rather *a* cold. In fact, it was synonymous to rheum; but in its condensation by cold, it was gravely asked how the brain escaped being frozen.

The great point in dispute, seems to have been whether the pituita was an excrementitious fluid, and whether generated in the brain, or drawn to it as to an alembic from the stomach or liver. It is useless to follow the disquisition; but we may add, that it was at last determined not to be an excrementitious fluid, not to be generated in, or derived from, the fourth ventricle of the brain, nor from the liver. In fact, it is the mucus of the whole pituitary or Schneiderian membrane; and more generally considered, when exceeding in quantity or morbid in quality, to be a disease of the stomach. Thus, when Horace says, "Nisi cum pituita molesta est," he does not refer to catarrh; though Baxter

gravely tells us that bilious constitutions are subject to catarrhs, but to his habitual weakness of the stomach, for he observes in another place,

——— *Stomacho que tumultum*
Lenta feret pituita.

The humoral pathologists, catching at the language of Galen, supposed that a pituita sometimes abounded in the blood, and was secreted in the stomach, and occasionally the cause of fevers. In the usual progress of epidemics, when the inflammatory form, more common in spring, has yielded, and the bilious constitution of autumn has not come on, the pituitary fevers are said to take place (Grant on Fevers); that is, fevers of no peculiar distinct kind. Not the slightest evidence of a mucous fluid in the blood has, however, been adduced; and still less of its power to produce fevers. We have found mucus or pituita discharged in excess, and with altered qualities, in coryza; in the throat (see ANGINA); in the stomach (see DYSPEPSIA); in the intestines (vide CŒLIACA); in the urinary bladder (CYSTIRRHŒA); in the urethra and vagina (GONORRHŒA). It remains to enquire how far it is connected with epidemics.

Selle and Pinel (vide NOSOLOGIA) have distinguished pituitous fever, referring it to the gastric remittents; and they have quoted as their authorities Sarcone, Glass, Huxham, and Stoll. These authors however, describe only the milder typhus, complicated sometimes with aphthæ, sometimes with scarlatina; generally with accumulations in the stomach and intestines; with accumulations, not only of mucus, but of bile and of putrid saburræ. Indeed every author who speaks of pituitary fevers considers the stomach and bowels as the chief seat. Baglivi calls them mesenteric, other authors slow, gastric, and mucous fevers; nor is the type, in the opinion of Pinel, more accurately described than in Wagler's work, De Morbo Mucoso, a putrid fever complicated with dysentery. We shall transcribe the description of this fever from Sarcone, whose account is preferred by Selle.

"Constitution of the air cold; diet bad and unalimentary; manner of living excessively dirty; a scarcity of food; tongue glutinous, as if covered with fat; mouth and fauces sometimes covered with a mucous crust; blood covered with a glutinous coat, consisting of lamellæ containing serum, scarcely inflammable; cruor in a dissolved state; fever slow, with a weak intermitting pulse; urine thin and limpid." To this may be added, that blisters were said to discharge gluten; and, on dissection, the intestines to be covered with a glutinous crust. In the whole of this description we perceive only the milder typhus, which is attended with a white tongue, and when protracted with aphthæ. Blisters, after some continuance, always discharge a white matter; and in proportion as the vessels are less irritable or more weak, this matter appears more early: it is only the gluten of the blood. Pinel, in his description of pituitous fever, from Wagler, mentions as peculiarly characteristic marks, continued nausea, a stomach cough, inducing and increasing pains in the breast; diarrhœa with tenesmus, sharp pains or constriction in the transverse direction of the colon; aphthæ or mucosities on the internal membrane of the larynx, rendering the respiration painful or stertorous. When the fever was violent, these mucous excretions of the mouth were not obvious; but a thick white mucus, sometimes yellowish, sometimes of a deeper colour, at the back part of the tongue, was accumulated. This fever, he adds, sometimes terminates by an internal ulcer or schirrus, a mucous congestion in the lungs, or a gangrene of the intestines. We did not remark in the account of Sarcone, because it would be more striking in this place, the appearances on dissection. What he styles mucous exudations in the viscera are evidently the effusions from inflamed vessels, which appear in the lungs, the bowels, &c. after the resolution of inflammation, and which, when the patient survives, form adhesions between contiguous parts. We see in this second description, from the pain, the gangrene, &c. every mark of inflammation having preceded. We may add, therefore, with the author before us, though he meant not to apply the observations to himself, the following truly judicious reflections.

"It is well known that complicated epidemics are constantly described as so many singular novelties; fevers which seem to increase without limits the catalogue of these diseases, and to extend the boundaries of the art of healing. But the spirit of analysis soon shows how much this excessive multiplication may be reduced, when we have seized the character of the principal disease; and has not Wagler himself, when he has described the simplest form of the disease which appeared in the epidemic during the siege of Gottingen, given the history of the mucous malignant fever; the same fever with purple exanthemata, &c.?" We may observe in the same spirit, has Wagler given us any more than a picture of the nervous fever, with aphthæ?

We have, perhaps, enlarged sufficiently on this subject, which is a short specimen only of what we purposed to offer on the varieties of fever; a task which, from its extent, we lately (page 277) declined. The remedies peculiar to the pituitous fever are not different from those of fever in general, though we suspect the symptoms would have been milder, and the disease less fatal, had evacuations from the stomach and bowels been more freely excited. In short, it would have been unnecessary in this work to have enlarged on these supposed varieties, as every direction in the general cure applies strictly to them.

The other directions for the treatment of pituitary congestions chiefly relate to collections of mucus in the stomach, Baldinger recommends tartarised antimony in mild doses; and Stoll (Ratio Medendi, i. 228) the sal ammoniac: not very different are the medicines recommended by Martin, burnt sponge; and the lime water of other authors. The warm aromatics and the Geoffrœa surinamensis have their advocates; but gentle emetics often repeated, mild laxatives, with the purer bitters, and the alkaline salts, afford the best chances of relief.

The remedies for catarrh and for coryza, in all their varieties, may be seen under the distinct heads already mentioned.

PITUI'TA ALBA. See ANASARCA.

PITUITA'RIA, (from *pituita*). See DIARRHŒA.

PITUITA'RIA GLA'NDULA, the PITUITARY

GLAND, is a small spongy body, lodged in the sella sphenoidalis, between the sphenoidal folds of the dura mater, neither medullary or glandular; but on the outside partly greyish and partly reddish, and within, white. It is transversely oval, and on the lower part, in some subjects, it is divided by a small notch into two lobes, like a kidney bean. It is covered by the pia mater as by a bag, the opening of which is the extremity of the infundibulum, and it is surrounded by the small circular sinuses which communicate with the sinus cavernosi.

PITUITA'RIA MEMBRA'NA is the membrane which lines the whole internal nares, the cellular convolutions, the conchæ, the sides of the septum narium, and, by an uninterrupted continuation, the inner surface of the sinus frontales and maxillares, and of the ductus lachrymales, palatini, and sphenoidales; continued down to the pharynx, septum palati, &c. Its name is derived from its office of separating the mucilaginous lymph, called *pituita* by the ancients; and it is of different structures in different parts; sometimes thin, at others thick and spongy. It is thickest on the septum narium, the lower portion of the inner nares, and the conchæ; in the sinuses it is thinner; on the side next the periosteum and perichondrium it is plentifully stored with small glands. See CEREBRUM.

PITUITO'SA, (from *pituita*). See DIARRHŒA.

PITUITO'SUS MO'RBUS. See NERVOSA FEBRIS.

PITYRI'ASIS, (from πιτυρον, *bran*), *porigo;* a scorbutic disorder of the head, chin, and eye-brows. It consists, according to Dr. Willan, of irregular patches of small thin scales, which repeatedly form and separate, but never collect into crusts, and are not attended with inflammation. He distinguishes it from porrigo, which is a disease of the scalp, attended with ulceration.

The *pityriasis capitis*, the first species of this author, is called the *dandriff* when it affects young children. It appears at the upper edge of the forehead and temples as a slight whitish scurf, in the form of a horse-shoe. The scales on the other parts of the head are flat, semi-pellucid, and distant, though often contiguous, and even imbricated. When it occurs in elderly persons the exfoliations of the cuticle are larger. The head should be shaved, and the scales removed by soap and water; for if the sordes (see PILUS) collect and unite with them, ulcerations are often the consequence.

The *pityriasis versicolor* of Willan are irregular, brown, or yellow patches on the arms, breasts, abdomen, and clavicles; sometimes branched like a lichen, sometimes in irregular lines like the outline of a map. They consist of small scales, which fall off and are reproduced. The cuticular lines are deeper in the coloured portion of the skin, but the patches themselves have no distinct boundaries. The origin of the colour is below the cuticle; but it is not attended with any complaint except a slight itching on going to bed after exercise, or any stimulating liquor. A slight exanthema, or a lichen pilaris, is sometimes apparently interspersed; but seems to be independent of the principal disease.

The causes have been said to be fruit taken in too large a quantity, mushrooms, alternations of heat or cold, the friction of flannel, and the heat of a tropical region. It seems to resemble the maculæ hepaticæ of Sennertus, and to differ from the dark spots occasionally on the skins of pregnant women. As these have no scales, it should be also distinguished from those maculæ and ephelides which have a marked border. No internal medicine seems to produce a considerable or a permanent change in these spots.

PITYROI'DES, (from the same). See FURFURES.

PITYU'SA, (from πιτυς, because the leaves resemble those of the pine). See TITHYMALUS, ESULA MINOR.

PIX, (from πισσα, *pitch*). PITCH, *burina, bunnea.*

PIX BURGU'NDICA, BURGUNDY or WHITE PITCH, is the resin of a species of pine with a larger proportion of oil than in the common resin. It is extracted from the *pinus abies* Lin. Sp. Pl. 1421. Burgundy pitch is chiefly imported from Saxony, of a solid consistence, yet somewhat soft, of a reddish brown colour, and not disagreeable in smell. In inveterate coughs, affections of the lungs, and other internal complaints, plasters of this resin, by acting as a topical stimulant, are said to be of considerable service. It is now entirely confined to external use. See ABIES.

PIX LI'QUIDA. TAR; *pisselaion; alkitram; cedrium;* is the produce of all resinous trees; at first procured from cedar, larch, and fir, but now chiefly from pine-trees, particularly the *pinus sylvestris* Lin. Sp. Pl. 1418, and the *p. picea* 1420. (See ABIES.) The wood is inclosed in a large oven, which stands within another, admitting the fire between: from the bottom of the inner oven the tar is carried off by a gutter in proportion as it melts.

Tar differs from turpentine by the disagreeable empyreuma it has received from the fire, and by the acid as well as the gummy matter separated by the heat. It thus becomes soluble in watery fluids, which extract nothing from the purer turpentines.

It affords by distillation the common black pitch, an essential oil, called, from the name of the tree whence the tar is obtained, *oleum pini*, or *tædæ*, and an acid spirit. This oil resembles the oil of turpentine, but is impregnated with the empyreumatic flavour of the tar. A leg of mutton, while roasting, basted with tar instead of butter, and a sharp skewer frequently thrust into its substance, in order to let out the gravy, afforded in the dripping-pan a composition said to cure the lepra ichthyosis, by anointing the whole body with it for three or four nights successively, while the same linen was worn. Dr. Cullen mentions it as used in one instance with great success. Materia Medica.

Water in which tar hath been steeped is an useful remedy in many disorders. It may be drank either warm or cold. In acute diseases it is taken as freely as the thirst may demand; and in chronical, from a pint to a quart may be taken every day, at three or four times, beginning while the stomach is empty. It is said to be a good deobstruent to warm and stimulate, raising the pulse and increasing perspiration.

Common tar-water is made by putting two pounds of Norway tar to a gallon of water, stirring them well together for two or three minutes: after settling two days, the clear liquor must be poured off. Of this a pint or

more may be taken every day. In many instances this preparation, says Dr. Cullen, has appeared to strengthen the tone of the stomach, to excite appetite, promote digestion, and to cure all the symptoms of dyspepsia. At the same time it manifestly promotes the excretions, particularly that of urine; and it may be presumed to have the same effect on others. From all these operations it will be obvious, that in many disorders of the system this medicine may be highly useful. Materia Medica. See the Bishop of Cloyne's Treatise on Tar Water.

PIX NI'GRA, *sicca, arida,* COMMON BLACK PITCH, DRY or STONE PITCH; called by Dioscorides *palimpissa,* prepared of pitch twice boiled.

It is tar dried by heat, or what remains of tar after separating the essential oil, its acid, and aqueous parts. A stimulating plaster bearing the name *emplastrum picis compositum* is said to be equally stimulating with the euphorbium plaster, and to possess similar properties. It is made in the following manner:

℞. Picis aridæ ℥viij. gum ammoniaci, galbani, āā ℥iv. liquentur simul; deinde adjiciantur, pulveris radicis pyrethri; seminis sinapios; camphoræ, āā ℥i. olei terebinthinæ q. s. ad consistentiam emplastri.

Unguentum picis aridæ, made by melting nine parts of pitch and of olive oil, with four of wax together, is said to be efficacious in ulcers, attended with an extraordinary degree of irritability, distinguishable by their languid, purple, and glassy appearance. In these all terebinthinate ointments are inadmissible.

The *unguentum picis cum sulphure,* made by melting sixteen parts of pitch and one of yellow wax together, adding, while fluid, eight parts of sulphur, is employed in tinea, and esteemed very efficacious; but during its use the head must be frequently shaved, and a green oil-skin cap constantly worn.

PLACE'BO, (from *placeo, to amuse*). A commonplace method or medicine, calculated to amuse for a time rather than for any other purpose.

PLACE'NTA, (from its resemblance to πλακους, *a cake*). In botany it is that part of the pod or husk of a plant to which the seeds are fastened, and by which they are nourished until ripe.

In anatomy it is a thick soft vascular mass, thin at the edges, where the membranes go off which cover the fœtus, adhering to the uterus during gestation, called *hepar uterinum,* and, with the membranes and funis umbilicalis, excluded after the fœtus. The whole is called the *after-birth* and the *secundines.* The placenta is sometimes oval, at others, divided into two, adhering apparently to each other by the membranes. The internal surface, where the funis is inserted, is convex; the external concave, and, there, seems composed of lobes, which are most conspicuous when the placenta is hastily separated. When there are two children there are two placentæ; and though they appear as one, they have no communication of vessels. The placenta usually adheres to the fundus, but occasionally to any other part, and is sometimes directly over the os tincæ. It is made up of one vein, and of two arteries, which ramify together, the largest being on the internal surface; and even the apparently parenchymatous substance appears by injections to be wholly vascular. The ramifications are very minute, and when separated by maceration and injected, they appear to rise from the funis as branches from a tree. No nerves can be traced into the placenta.

Former physiologists saw nothing in the placenta but a congeries of vessels passing from the mother to the fœtus, and a communication by continuous vessels was so natural and obvious, supported also by the hæmorrhages which followed the separation of the cake, that it was apparently unnecessary to look farther. Dr. Hunter, by more attentive examination, found reason to doubt of the existence of continuous vessels. He saw evidently a cellular structure on the separation of the placenta; and comparative anatomy showed him that cells were more conspicuous in the placenta of ruminant animals. The experiments of Haller on the egg, which proved that a large portion truly belonged to the fœtus, led to an enquiry whether the apparently uniform cake might not be composed of two parts, one belonging to the fœtus, the other to the parent. The result was, that almost the whole of the placenta was truly fœtal, that the maternal portion was inconsiderable, and that the blood of the parent was deposited in cells; from which it was seemingly taken up by absorbing vessels, probably red veins. In this view the apparently mamellated structure of the uterus, at the point of union between it and the placenta, was the whole that belonged to the maternal system, except the decidua. Even the decidua reflexa is supposed to belong to the fœtus; but on this subject physiologists are not perfectly decided.

The circulation thus carried on by absorption, and the deficiency of any nerves passing from the mother to the uterus, led pathologists into some difficulty to explain the effects of fright, apprehension, or fever, on the fœtus; and was still more embarrassing to the physiologist in explaining the source of the nævi materni. The present structure is perfectly consistent with the doctrines we have attempted to establish respecting the primordial germ, which admits not of any considerable distension beyond its adult state; and it will be necessary to examine shortly the mode of communication, since a remote connection is at least evident; for the child is certainly influenced by diseases which affect both the circulating and nervous systems of the parent.

There can be little doubt but that the extreme vessels in the maternal part of the placenta possess the peculiar irritability and sympathetic associations which distinguish these extremities of the arterial system on the surface. Their sympathy is also more extensive; and fever or terror, which affects the latter, with spasm or insensibility, will equally disorder the former. The want of a supply is consequently felt, and uneasiness must follow. Violent evacuations will often do little injury; for in that case the supply, though diminished, is not wholly stopped. Though there is, however, no immediate communication between the two systems by means of nerves, it does not follow that the proximity of the minute nervous fibres, when their nonconducting coats are deposited, may not have some influence. If there is any foundation in the doctrine we have endeavoured to establish on that subject, it is probable that the vibrations of an elastic fluid on one side, may have some influence on the nerves contiguous to them from

the other. We have indeed contended that divided nerves do not unite so as again to communicate the nervous influence from the brain, or sensations from their extremities; but this apparently arises from their uniting in the usual way by accretion and effusion, in short by an inorganic substance, as is represented in the plates of Fontana. Nor is this nervous influence by approximation wholly without examples, were it proper at this time to engage in the subject.

Some doubts have arisen whether the maternal blood is conveyed without a change through the vessels of the placenta; or whether some separation, perhaps some secretion, may not take place. The difficulty has arisen from its being observed that infectious diseases are not communicated to the fœtus, or, at least, not readily and certainly, and from the suspicion that the azotised blood of the mother might, in the earlier periods, be injurious to it. It is now, we believe, admitted that fevers have not their origin in the blood; and it will be obvious that the fœtus can suffer only from the disturbance of the balance of the circulation. Even putrid fevers in a high degree have been found not to affect the child in utero; and we know, from the experiments of Parmentier and Deyeux, that in these cases the vital fluid is very little altered; though we should, *à priori*, have suspected that the gelatinous fluids of the fœtus were not very susceptible of putrefactive fermentation. Where poisons are more decidedly present in the blood of the mother the child is sometimes affected. The small-pox has certainly been conveyed to the fœtus, and it has been affected from the time the pustules have began to dry into scabs, at the period when the maternal blood is most full. The lues, it is said, is not communicated; and it has been supposed, that when the child is affected, the communication of the virus takes place in passing through the vagina. We have given some reasons for supposing this not to be the case (vide LUES); and may add, that were it so, the local disease would probably show itself more frequently in the head than in the genital system, since the head is first, and for a longer continuance, exposed to the contact of the virus. We must, from every view, admit of a communication; but some means are found for lessening the deleterious acrimony of the poison, often of destroying it altogether. It is not impossible that with the blood a milder portion of albuminous matter is secreted; perhaps the fluids of the fœtus may not be susceptible of taint; or the poison be soon carried to the surface: a determination favoured by its being constantly bathed in water.

The nervous communications we must leave among the numerous arcana of physiology, unless the communication by the approximation of the ultimate uncoated fibrils on each side be admitted. We were, at one time, inclined to adopt the existence of a nervous aura communicated to some distance; but found that the different facts would by no means support its existence. and that in the present case it would be inapplicable. We soon perceived also, that the admission of this principle would lead to numerous inconsistencies and improbabilities. The influence of the mother in producing the nævi, called from thence *materni*, may be very shortly discussed, by denying it altogether. We have already given our reasons for it.

The placenta is often diseased. It sometimes accretes to the uterus, as observed by Morgagni, Stœller, and Gooch; becoming a firm tendinous mass, or, according to the last author, with beginning ossifications. It is often so closely attached that no power which we can safely use will separate it; and the whole gradually sloughs away in succeeding menstruations. It sometimes degenerates into cysts, or, probably, hydatids; of both we have instances in Bauer, Haller, Ruysch, and Valisnieri. Of its attachment to the os uteri we have already spoken; and in our plate we have preferred a case of this kind, as the general attachment might be better understood from the appearances in this case, than the latter from a representation of the former kind.

The placenta was, in general, removed soon after delivery; but within about thirty years, we believe chiefly from the recommendation of Dr. Hunter, it has become usual to delay the extraction; and it has been delayed for many days. We perceive in the older authors various and opposite opinions on this subject. Some contend that it should be immediately extracted, and that any delay is dangerous or fatal; others, that weeks and months may be suffered to elapse without making any attempt to deliver it. More attentive observation has preserved the medium. The extraction is not hurried; but seldom more than a day or two is suffered to elapse without attempting to bring it away, if nature should not perform the office. When the cord is broken, a little longer delay is occasionally necessary, that a partial separation may take place and give advantage to the operator. The inconveniencies of suffering it to remain are a constant drain which debilitates the constitution; a mind unsatisfied and uneasy; often putrid discharges: those of too rapid extraction are, pain; violent floodings; often inflammation; and sometimes, from rashness, inversion of the uterus.

The most ridiculous and absurd medicines are recommended to expel it. Myrrh, the skin of a hare, the dung of different animals, and the testiculi equi, are among these. If myrrh has any effect, as we have suspected, of bringing on hæmorrhage, it may be useful, but should it have such a power there is scarcely time for its action.

In general, therefore, we should wait for some hours after delivery to see if nature will produce the separation, which will be shown by fresh pains recurring, bearing down, and the cord elongating when gently drawn.

It hath long since been observed, that hastening the placenta was one cause of the difficulty in delivering it; and the most eminent practitioners agree that a flooding only can justify its speedy separation. When necessity obliges the accoucheur to introduce a hand into the uterus, the back of it should be toward the uterus, and the palm as close to the placenta as possible, that the womb may not be injured in separating it.

PLACI'TIS, (from πλαξ, *a crust*). See CADMIA.

PLA'CTULÆ. See MORPIONES.

PLADAROTIS, (from πλαδαρος, *flaccid*). A fungous tubercle in the inside of the eye-lid.

PLA'GÆ, (from πλησσω, *to strike*). Solutions of

continuity, as wounds; though stripes, blows, &c. are generally included.

PLANCUS, (from πλαζω, *to turn aside*). See LEIOPODES.

PLANIPETALUS, a plant which has *plain*, flat *petals*.

PLA'NTA, (from *planus, flat*). THE SOLE OF THE FOOT, also a PLANT or VEGETABLE, because it originally included only vegetables on the surface of the ground, which are trodden under foot.

We have often remarked the difficulty of discriminating even the largest groups of animated nature, in consequence of the imperceptible shades by which one class of bodies passes into another. Even the animal and vegetable kingdoms can scarcely be distinguished with accuracy from this cause. A plant may however be defined a living organised body, without feeling or spontaneous motion; which has the faculty of reproduction; which grows and is nourished by intus-susception, through the medium of other bodies to which it adheres by some of its parts. Plants approach animals by an organised structure; perhaps by a power of preserving a greater temperature than the elements which surround them, by a degree of sensibility and irritability: they approach minerals by not possessing a locomotive power, by having no containing vessels; and, in many cases, by the function of nutrition being in part carried on by apposition.

The anatomy of a plant, if fully detailed, would carry us to disquisitions of a disproportioned extent. It is sufficient to remark that every vegetable is fibrous; and its bulk, like that of animals, formed by an inorganic substance interposed between the fibres. When these admit of no farther distension the tree dies, and at first on the top, where the impelling force is soonest exhausted. The nourishment is conveyed by vessels which pass through the bark, and from it the woody fibres are deposited. The wood gives firmness and solidity, but the tree will live and put forth shoots though the wood be destroyed, should the bark be uninjured; at least in its whole circumference. It has been disputed whether the vessels of a vegetable are canals conveying a fluid *within them*; or whether the nourishment is conveyed along the fibres. Many authors have pretended to have seen canals in different species of vegetables, and have described them; but future observers have not been equally fortunate, and on the whole it seems clear that the nutritious fluid passes along the fibres, which, by their juxta position, may be supposed to form canals. The most convincing argument in favour of the existence of vessels is, that if the plant is placed in ink, some parts will be coloured and others remain of their natural hue, which at least shows some affinity to different fluids in different parts of the vegetable.

Those who admit of vessels distinguish the *vasa propria externa* disposed in small bundles under the bark, forming a net-work with large meshes; the *vasa propria interna*, found particularly in the oak and the pine, appearing to convey a fluid, which, on cutting the chelidonium majus transversely, may be seen to pass out; the *vasa propria intima*, found in the inner bark, and sometimes in the wood, which can scarcely be demonstrated, but which Dr. Hill is said to have separated in the piscidia erythrina, after a long maceration; and the vasa propria, perhaps the only vessels clearly demonstrated. These are large and numerous, particularly near the surface, convey a viscid coloured fluid, and communicate with the utriculi. They are supposed to receive the sap from the lymphatic vessels, and to prepare the appropriate fluids of the plant.

The *lymphatic vessels* are numerous, and pass from the roots to every part of the vegetable, conveying the nourishment absorbed from the earth. Those who contend for a circulation of fluids in vegetables, suppose them to arise through these and descend through the vasa propria, between the wood and the bark. Hill has described them as consisting of little cells included in each other, forming a hollow cylinder: but this author's fancy was often too predominant; and these appearances have not been seen by other observers. There are probably also *inhalent* and *exhalent vessels*, which are found in the leaves; a part analogous to the lungs of animals.

The utriculi are described as vessels composed of vesicles slightly contracted at equal distances, but preserving a free communication in the whole length of the canal. They appear, however, to be a mere cellular substance, communicating with the vasa propria, the lymphatic vessels, and the medulla.

When the leaf of a plant, as an iris for instance, is broken transversely, and the parts slowly separated, small fibres are drawn out, which appear as if they had formed a vessel by spiral circumvolutions. These have been styled air-vessels or *tracheæ*; but with little reason, for they sometimes appear to contain a coloured fluid. They are found in the minutest parts of the plant, even it is said in the stamina; but later vegetable physiologists suspect that these tracheæ are peculiar only to the more adult state. Hedwig and Reichel thought them primordial; other authors have supposed them irritable organs, the source of the motion of the sap; and Desfontaines the rudiments of fibres. Nothing however is decided on the subject; but as they are found in the organs most completely developed, we should rather suspect them to be expanded fibres than primordial ones. Were they the latter, as Senebier has justly observed, we might discover them in a state of progress to the fibrous form.

Mirbel, in his late work on the Anatomy of Plants, admits of five species of tubes, which supply the office formerly attributed to the vessels described by authors, viz. *simple* and *porous* tubes which contain the appropriate juices (succi proprii); the tracheæ and pseudo tracheæ, which he considers as tubes without assigning their use; and the small tubes which form the bands and the ligneous strata. Independent of these vessels, Mirbel calls the regular and symmetrical vacancies of a soft texture, formed by tearing the membranes, *lacunæ*. The tubes and lacunæ he supposes to be formed of a membranous substance, which is the primordial basis of vegetables. The former are without pores, which are numerous in the other. These pores are insensible, longitudinal, or glandular, according to the parts or species of plants in which they are found.

The epidermis is composed of longitudinal fibres in the greater number of plants; and in some, as the cherry-tree, of transverse ones. The external laminæ are sometimes inorganic; the internal frequently consist of distinct strata. The epidermis of the trunk and

branches is regenerated if destroyed; that of the fruits and leaves is never restored. It is evidently composed of a net-work, or of numerous reticulated laminæ, resembling spiders webs; and perforated by the pores of numerous vessels. It enjoys life equally with the plant, and is not wholly a crust formed by the vegetable secretions. The glands of the epidermis of the leaves are called the transparent miliary glands by Guettard; and they are of the colour of the parenchyma, separating in the day oxygen, and in the night carbonic acid gas.

The *parenchyma*, or the cellular texture, is discovered on raising the epidermis, and is a net-work formed by fibres or transparent vessels filled with a green fluid, anastomosing at their meeting, and swollen at the intervals between their anastomoses. It is formed by contiguous vesicles, connected horizontally at right angles with the longitudinal fibres. In this part the ultimate elaboration of the fluids takes place, and the different gases are separated. Senebier thinks the colour owing to the remaining carbone, but the green matter is a resinous substance, and consequently does not contain carbone exclusively. The decomposition of the water, the cause of the ultimate change, is owing to the action of the solar light.

The *bark*, or vegetable cutis, has been lately styled cortical strata, formed of a cellular substance, with closer meshes than those of the parenchyma. In the flattened net-work we perceive transverse and longitudinal fibres, which communicate with the tubes and cells of the parenchyma. These are the fibres which in flax and hemp are employed to make linen and ropes, ultimately paper, either white or brown.

The *liber* is the inner part of the bark composed of reticulated laminæ with still smaller meshes, adhering so loosely as to be easily separated, and giving the idea of the leaves of a book, from whence its name is taken. The tracheæ are very numerous in this portion of the bark. When there is a solution of continuity in the wood with loss of substance, the liber insinuates itself into the wound, and in a few years fills it with a woody substance. Du Hamel compared it to the periosteum of the bones, led by a false analogy, and erroneous ideas of the nature and formation of a callus.

Between the bark and the wood we find strata of what is styled the *alburnum*, differing from the bark by the white colour and greater density. The vascular and tubular portions are more closely compacted, less numerous, and less sensible than in the bark. Some of the species of salix, when macerated, show this part most distinctly. It seems to be the wood in its progress to the ligneous state. This is, however, no part of the bark, but a primordial portion of the vegetable developed to receive the fluid, which is to become wood. It is at first almost wholly albuminous, but from the influence of light becomes resinous; for etiolated plants are never woody. When the bark is removed, the ligneous state is sooner brought on; and it is said to be advantageous to bark the oak one year before it is felled. The alburnum then becomes hard, the wood less perishable and less accessible to the attacks of the teredo navalis.

The *wood* is the hardest portion, and its laminæ are very compact, containing, instead of fluids, a carbon, as bones contain between their fibres phosphat of lime. The lymphatic vessels are more numerous than in other parts, and convey the sevum, which, when in excess, is evacuated in drops, styled TEARS. These do not arise from the bark or the alburnum; for to procure it, as in separating sugar from a species of maple, the wood must be penetrated. It is an erroneous idea that the number of ligneous strata show the age of a tree. Those of two successive years are sometimes confounded; and in some years two are deposited, so that the stratum of spring and autumn may be distinguished. Ligneous strata should therefore be banished from the vocabulary of the vegetable system; for in every part of animated nature we find, in the successive growth, only successive developements of primordial parts.

The last portion is the *medulla*, confined to the centre of the dicotyledinous plants, and disseminated through every part of the monocotyledinous ones, according to Desfontaines. It is composed of loose vessels and utriculi, which are spongy and long in drying; resembles the parenchyma, varying like it in density, according to the plant which contains it.

The medullary canal is parallel to the longitudinal fibres, in the middle of which it is placed, and communicates by its cells and vessels with the cellular texture. The fluids of these two parts differ only in colour; those of the latter being green from the access of solar light. Some *medullary productions* pass through the wood, and are gradually lost in the bark, or are spread through every part of the vegetable like the nerves of the spine. The *appendices medullares* differ only in extent, scarcely reaching beyond the innermost fibres of the wood. The medulla is in greatest quantity in young plants, and is then green, but the colour is fainter in proportion as the wood excludes the light. The medullary productions which reach the bark are sometimes green, but the appendices always white. In old trees neither of these are found; and it is said that they then produce fruit without kernels. The ancients uniformly supposed the kernel to be a production of the medulla, and deprived their trees artificially of it to procure fruits without a kernel, which were supposed to be more highly flavoured and succulent (Geoponica, lib. xx.); but Du Hamel was unsuccessful in his experiment, though he did not follow with accuracy the ancient process. Perhaps it is impossible to separate every portion of the medulla. The more of this substance they contain, the more easily are they propagated by buds and layers. Linnæus supposed that the medulla had a considerable connection with the sexual parts of plants, and thought that the pistil was derived from it. Hales considered it as the most essential organ to the nutrition of plants; but, as Senebier remarks, the old willows which still flourish without a medulla, refute this opinion. Columb, by boring trees at different depths, found the serum most abundant when the auger reached the medulla, and supposed that through it the juices mounted; and Plenck thought that it was a reservoir of nourishment in dry seasons (Physiologia and Pathologia Plantarum); but in such seasons the medulla is as dry as the rest of the plant. It is indeed probable that the medulla contains the nutritious juice of young plants, supplying the milk and the albumen of the cotyledons. At a more advanced period, this appropriate nourishment is unnecessary, and the medulla gradually disappears.

We have mentioned the important distinction of Desfontaines respecting the want of the medulla in the monocotyledinous trees, which, like the palm, are cylindrical from the top to the bottom. He, therefore, divides trees into those which have cylindrical and those which have conical trunks: a division founded in nature, and of the utmost consequence to be kept in view. The more minute distinctions, and the growth of the branches, would lead us too far, so that we shall speak shortly of some other parts of vegetables before we treat of their physiology and pathology.

The *knots* of vegetables are protuberances, formed by buds gradually distending. As this process takes place in the liber, the descending sap is arrested in its course, and forced into the bud. The fibres in this part are less strong, and slightly brittle. The knots are, however, the hardest parts of the wood, from the fibres being compressed by the expanding bud. Successive layers of wood cover them, but they are never effaced.

Articulations are a species of knots proper to herbaceous and woody plants, which usually produce branches. The knots or articulations of reeds, examined in a microscope, present a regularly-formed tissue consisting of hexagons, mixed with small round bodies of a finer texture. The knots of a sugar-cane form rings about five lines in breadth, whose surface contains five ranges of semitransparent points, arranged in a quincunx. The articulations are richer in juice than the other parts. There is much analogy between branches and knots, respecting their reproduction; for the roots usually proceed from the knots in solaniferous plants, as well as in those multiplied by buds and layers.

Buds and suckers are plants in embryo: they are buttons, with the leaves imperfectly formed, and a year is often required before they can assume the name of a bud: the first appearance of a bud is called an eye; and, previous to this, in its first state of dilatation, it resembles in form a reversed cone. The most favourable moment for the evolution of buds is when the leaves begin to fall, as they then attract the fluids, both from within and without, and begin to enjoy an active life.

Suckers are only buds which grow accidentally in consequence of a wound, which, interrupting the course of the sap, evolves a bud. *Thorns* have been supposed abortive branches, because they occasionally become branches. They seem, however, to be constant in the same species, and to have an active office, that of defence, in the infancy of the vegetable. In those monstrous productions, from excess of nourishment, the thorns certainly sometimes become branches; but they are never fertile. To this we may add, that they are always directed to the earth; or, if apparently horizontal, inclined in a gentle angle to the ground, while the branches rise upwards. Thorns are in the first year covered with a bark, in the second the bark disappears, and after the third they usually die like an inorganic body. They have no power of absorption. If an annular incision is made round the branch below them, and the leaves above are taken off, they die the first year. Comparetti found them to originate from a bulb like the hair, and the bulb of the sting of a nettle was found to contain the acrid fluid which distils from its extremity. Thorny plants are stronger, drier, and more compact than others; and when the thorns are lost, it seems to arise from greater care and a more succulent food.

The flower is not only the ornament but the most essential part of the plant; for it contains the organs by which the species are continued. The sexual system is now established, and the stamina are allowed to be the organs which distinguish the male, the pistils those of the female, flowers. They are sometimes on distinct plants, more frequently indistinct flowers on the same plant; but most commonly the male and female organs are on the same flower, which is consequently called an hermaphrodite. It has been already shown (see BOTANY) that the arrangement of Linnæus is founded on the sexes of plants, and it will not now be soon disturbed.

The flower in all its splendor is said to be only an expansion of the other parts of the vegetable. The calyx has been derived from the bark, the petals from the liber, the stamina from the wood, and the pistil from the medulla. This, we believe, from the experiments and observations of Grew, Malphighi, and Desfontaines, is now rendered highly probable; and if, as has been conjectured, coloured is only attenuated light, we can attain some knowledge of the source of colour which adorns the parterre. The sight is, however, pleased at the expence of the health; for flowers exhale a deleterious gas, often highly injurious to delicate nervous constitutions. The double flowers are the monsters of the vegetable kingdom; for they are produced by an excess of nourishment, and the additional petals are the stamina which assume that form from excess. Like other monsters they are barren, and produce no fertile seeds.

The stamina are the organs least known: those of the tulip are swollen at the lower part, and hollowed, according to Senebier, in irregular tubes through their whole length. The tops are generally crowned by two ovoid capsules seen in the microscope, which are separated by a membranous septum. Spiral vessels are found in the stamina, particularly in those which are irritable, viz. of the barberry and opuntia; and it has been said that these vessels are the seat of their irritability. Others, without deciding on the cause or the seat, attribute this irritability to the stamina of every plant; and Tessier seems to have proved that in all the cerealia, the stamina at the rising of the sun turn towards the pistils, throwing with some force the pollen from the antheræ.

The opinion of Desfontaines, just mentioned, that the irritability is seated in the spiral vessels, seems to be supported by the experiments of Comparetti on the filaments of the urtica and parietaria. Dr. Smith places the seat of the irritability at the base of the filaments, and indeed the joints seem the usual seat of this principle in every vegetable. Other botanists have supposed that the motion is mechanical, depending on the dilatation or contraction of the fluids in the vessels, by different degrees of temperature; but the existence of these vessels has been doubted.

The antheræ, placed at the top of the stamina, contain the true vegetable semen, which seems to preserve its prolific power for a long time, since we know that it may be conveyed by the air, and impregnate the female flowers of dioicous plants at a great distance. The globules, which the microscope discovers, are ap-

parently not the ultimate form of the pollen; for, when placed in water, they burst, and throw out with considerable force some smaller globules, or a sensible aura. Tessier found the pollen the most animalised of all vegetable substances, next to the gluten of farina: it afforded ammonia in the ultimate analysis, and appeared naturally of a resinous nature.

The number of the *pistils*, the female organs, is the same with that of the seeds, and of the stigmata with that of the cells. On a general view, when the seeds are numerous the pistil appears single; but, on minuter examination, it is composed of as many pieces as there are seeds. Its lower part passes into the ovarium, and its surface is without any epidermis, covered usually with a viscid fluid. It is not yet decided whether the pistil is tubular. Bonnet saw in the orange, lily, and the linden tree apertures at the extremity of the stigma, continued through the pistil to the ovary, large enough to admit the fecundating pollen. It is supposed that in the moment of impregnation these apertures open to convey the pollen, and again close when the orgasm is at an end. Linnæus suspected a similar contrivance, and Spalanzani saw an opening, but could follow it no farther than the middle of the style: in some plants he could not discover the smallest aperture. Hill declared that he saw it through the whole track; but Adanson, who only traced it in some species, supposes that the pollen is conveyed through the tracheæ, when the pistil is not tubular. These, however, have not been proved to be pervious tubes. It is probable, as Linnæus supposes, that the aperture is too small to be discovered; and when we consider the minute division of the pollen, it is scarcely probable that it could be brought within the reach of even the best assisted sight. May not the fecundation of the seeds be affected by a seminal aura, as was formerly supposed to occasion impregnation? The whole analogy of animated nature, and the means of reproduction, oppose this opinion, and we were lately unwilling to admit it where its existence and influence were most probable, viz. in the connection between the mother and fœtus.

We have spoken of irritability, and given instances of its existence, though many more striking ones remain to be mentioned; yet no organs in which it is accumulated have been discovered, no source of this principle has been pointed out. The solar light decomposes the water, and its oxygen is exhaled, while the hydrogen remains to form the oils and the green resinous matter of the leaves; nor is it improbable that azote is absorbed from the atmosphere. This process is undoubtedly calculated to assist the circulation of the fluids through the lower parts of the vegetable, but by no means accounts for the motions certainly connected with irritability. An anonymous author has endeavoured to show that in meteorological phenomena the decomposition of water is attended with a separation of the electrical fluid, and in this way accounts for the positive electricity of the atmosphere. (Exeter Essays, 372, &c.) If this be the case, may not the electrical fluid be the source of irritability, and may not the medulla be its great reservoir? The pistil, the most certainly irritable organ, is apparently derived from it; but if this be denied, the use of the tracheæ has not yet been discovered, and the structure of these, calculated greatly to extend the surface, adapts it for the same purpose. This is, however, conjecture only; nor is the present work a place to render it probable, though various facts occur to us which we think would rescue it from the opprobrium of an hypothesis.

The two great powers which convey the fluids of the vegetable through it vessels, or along its fibres, are the capillary attraction at the roots, and the decomposed water in the leaves, if we are not permitted to add the electricity evolved in the latter process. The sap in the early spring rises in waves, falling during the night, and again rising by day, sometimes like the undulations of the ocean, sinking below its former rise, but still, on the whole, progressive. In the early periods the milky and albuminous fluid of the seeds supplies the young plant, as the maternal fluids in the placenta supply the fœtus. While the plumula has yet no power to expand its own leaves, nature has provided the rudiments of this organ in an appropriate form, styled the seed leaves; but its own soon expand, and the plant acquires an independent existence. In the progress of its existence it annually extends in height, and increases in bulk. The wood is deposited from the bark, forming in its intermediate state the alburnum, either from the ascending, or, according to Mr. Knight's very ingenious experiments, in the descending vessels. The former, from the experiments with coloured fluids, seem to surround the medulla; but the minutiæ of the vegetable physiology must not detain us.

Thus we find, as in the animal body, the principal parts of the vegetable preexist in the germ. Every additional organic part is developed, and inorganic matter only added. We see in the peduncle of the pear the fibres which form the fruit, and can trace them gradually expanding to a determinate bulk; and the flower we can often trace to the bark, the wood, and the medulla. If we compare an animal with a vegetable, we must take one of the lowest rank as an example, for instance the polypus. The last appears to be a congeries of animals, and the vegetable seems also to combine in one body numerous individuals. Each may be propagated by buds; but they differ in one essential respect, that the food is taken into a cavity before it is distributed to the parts around. We know not a single instance to the contrary, unless it occurs, as some authors have suspected, in the lower orders of marine vermes, the asterias, and some others.

Irritability and *sensibility*, which distinguish animal creation, have been lately attributed to vegetables. We have pointed out a possible source in the electricity separated by the decomposition of water; but its operation or its instruments have not been ascertained. The contraction of the sensitive plant is well known; but in others, particularly the hedysarum gyrans, cactus opuntia, cistus helianthemum, the amarillis formosissima, &c. the motions are regular, though not spontaneous, and apparently the result of organisation rather than volition. It seems to reside in every part of the vegetable, since, when plunged into cold water, every part seems to contract, and the motions of the mimosa are said to be checked by watering it with a solution of opium. The irritability of plants is intermitted during the night, which shows its connection with the light, and almost every vegetable closes its

leaves towards the evening; some in the most striking, remarkable manner. Light, however, is not the only cause; for different flowers open and close at various times; and the convolvulus, for instance, soon after the sun has attained its meridian height. Linnæus, from the opening of plants at different hours, has collected what he fancifully styles *horologium floræ*, a botanical clock, viz. the flowers which show in this way the successive hours of the day. If by *sensibility* we understand the power of feeling, and being affected by external bodies without judging of their effect, plants may probably possess this quality. When a plant bends towards the light or throws out unusually long roots, to penetrate a barren rock, and reach a more genial soil, we cannot deny it some share of sensibility. The same conclusion must follow when we find plants differently affected by the same nourishment or the same aspects. In this view they often show more sensibility than some of the lower animals, as the polypus, the stella marina, echinus, &c. *Perceptivity* implies some judgment of the effects of sensations, and this quality has been liberally bestowed on plants. Philosophy would appear to put on her most repulsive garb were she to deny what has given interest to an elegant and pleasing poem (Botanic Garden), and some entertaining speculations (Percival's Essays). It is necessary, however, to add that not the slightest evidence has been adduced of the existence of this quality.

Respiration is a function common to both animals and vegetables, though not carried on with regularity and constancy. Oxygen gas is separated, and carbonic acid air, perhaps azote, absorbed. It has been supposed that azote is also separated in the lungs; but we suspect that it is rather received, since many plants which grow in water alone decidedly show traces of this principle, particularly the tetradynamiæ. *Circulation* in the sense of an animal function is not found in plants. The fluids rise and fall: we have said that no tubular vessels have been discovered, and probably none exist.

Digestion and *nutrition* in the vegetable kingdom are simple functions. Water is the great source of aliment, indeed many vegetables are nourished wholly by it; and this fluid, when decomposed, furnishes, as we have seen, the hydrogen to form the oils and resins, as well as the other secreted fluids, while the carbonic acid, perhaps the azote from the air, contribute to the formation of the wood, probably the seeds. Vegetable physiologists have supposed that the fluids either absorbed by the leaves or the roots are carried to the utriculi, and there digested; but not the slightest evidence of this process has been given: at the same time there is apparently an inherent power in the plant, to separate those principles from the air and water which form its appropriate and distinguishing fluids. Pease and cresses will grow in distilled water, exposed to the same air, and yet contain very different principles. This peculiar power has not yet been ascertained, and probably will never be understood.

M. Braconnot has, indeed, very lately examined this subject with more than usual attention; and his labours, which we have just received in the Annales de Chimie, vol. lxi. may with advantage detain us for a short time. He examined chemically a rich mould, and found that it contained nothing soluble in water; but that its chief characteristic was a power of retaining moisture. He found in it the usual substances, which are nearly the component parts of vegetables deprived of the oxygen, and a proportion of hydrogen. M. Braconnot repeated the experiments of Tillet and Van Helmont, and found that plants would germinate in substances which could impart nothing to them, as litharge, flower of mustard, well washed sea-sand, and even lead shot, though weakly in the latter, from its not retaining the water; and the products were very nearly the usual ones which are found when they grow in the best mould. Radishes in river sand, well washed, produced rather a larger quantity of ashes than in common earth, with a greater proportion of potash. Where then can plants obtain their carbon? It has been said from the open air, but they will grow in air deprived of its carbon, and even in an exhausted receiver. We are, however, by no means satisfied with the author's reasons for rejecting Senebier's experiment with lime, since he has only proved that lime is volatile when joined with water or alcohol; and in the experiment it was suspended in the bottle where the vegetable grew. He has, however, sufficiently shown that the quantity of carbon is far greater than the air can impart. This principle must be, therefore, derived from the water, and very probably, as he supposes, by the medium of light. The only principle which can in any respect supply the place of light is hydrogen; and our author suspects some affinity between hydrogen and light. Hydrogen is certainly contained in charcoal, and the diamond, which have been supposed to be carbon in the purest forms.

While we thus speak of the food of plants, we may mention the suspicion that a part of their excrementitious fluids are discharged from the roots. A noxious excretion from the roots is evident, in M. Braconnot's opinion, from the unctuous and dark appearance of the earth round them. In several of the euphorbia and cicoraceous plants it is milky; and in the plants which grow in water the roots are, after some time, covered with a glutinous substance. This subject, however, requires farther examination.

The more nutritious food of vegetables is manure. They may be divided, like animal stimuli, into the more steady and permanent, and the more active and diffusible. The former are animal or putrifying vegetable substances, probably in part azotic, but generally containing carbonic acid gas. Quick-lime or marl may appear an exception to this idea; but it must be recollected that they are not used alone, and are mixed with other substances before they are applied. The calcination renders them more easily divisible, and the remaining causticity seems of service in dividing the too adhesive clods. The more diffusive stimuli are salts of all kinds, particularly the oxygenated ones, which seem to exhaust the irritability; for they push on vegetation with such rapidity that the plant soon dies. Light may be equally dangerous in excess if water is freely supplied. Metals, metallic vapours, and metallic salts, are said to be poisonous to plants; but from some late experiments it seems that at least the latter have been usually injurious from their excess: in smaller proportions they seem to be useful, realising the canon of Linnæus in the vegetable kingdom also, "Alimenta a toxicis non natura sed dosis distinguit."

Reproduction is the last effort of all organised bodies, and the nearer they approach their end, the more ear-

nest does nature seem to supply successors. In the vegetable kingdom this is particularly striking; for to make a plant produce flowers and seeds no plan is more effectual than to confine, mangle, or weaken it. Of seeds and the early embryo we have spoken sufficiently; and of buds, shoots, or layers, it is enough to repeat, that a plant is a congeries of organised bodies. Separate one of these from the parent plant, and it is itself an independent, active being.

Light, we have seen, is the great stimulus of vegetable motion. It is not, indeed, essential to vegetable life; for Humboldt found plants in the shafts of mines, where no light penetrates. We know, however, that vegetables have a strong affinity to light; and if it is a component part of bodies, which from late observations we have reason to think, it is not impossible that they may derive some portion of this principle, in dark situations, from surrounding substances. One singular fact merits notice, that, when deprived of light, well known plants appear in disguise from an altered shape of the leaves. They are more round, as if the points were elongated by the discharge of gas; for at the points it is chiefly emitted. Plants confined in darkness lose their colour, and are blanched, or, as it is called, *etiolated:* they lose also their peculiar taste and their acrimony, as is the case with the endive, the chicoreum, &c. The reason, from what has been said, is obvious.

The gases in large proportions are destructive to vegetables: with oxygenous, azotic, and carbonic acid gas, a plant dies. With equal parts of carbonic acid gas and atmospheric air it dies also: with $\frac{25}{100}$ of this gas they languish; with eight they thrive vigorously. The most active vegetation goes on when a plant is watered with a solution of carbonic acid gas, in an atmosphere with about $\frac{10}{100}$ of the same. Buds take root most certainly in this way, if the light be excluded, or admitted moderately. It is often sufficient, by excluding the external air, to confine the gas which arises from moistened ground; but it is safer to add a portion through an aperture, which may be again closed.

Various other vapours are injurious to vegetation. We have mentioned quicksilver rising in the toricellian vacuum; but it appears, from some experiments of the Dutch chemists, that it may exhale even under the pressure of the atmosphere. Plants covered with a jar, immersed in water, in which a bottle of mercury was suspended, were covered on the third day with black spots, and on the fifth or sixth were quite black. In the experiments of Senebier the vapour of sulphuric ether prevented germination, without changing the quality of the air. Camphor, oil of turpentine, asafœtida, vinegar, and ammonia, have a similar effect, if inclosed with growing or germinating plants.

Vegetables exposed to impure exhalations of every kind flourish better than in the open air. Even the branches of a tree on the side of a dunghill are greener and more vigorous than on the opposite side, and such plants exhale more copious streams of oxygenous gas. Salts, as we have said, are the most powerful stimuli; but we cannot think the poudrette of the French (pulverised stercus humanum) useful only on account of its salts. The azote seems to claim some share, as well in this manure as in the fumes of the neighbouring dunghill. Odoriferous, and even fetid substances, if mixed in a considerable proportion with the earth, impart their odour, and sometimes an unpleasant taste.

The effects of the vegetable functions are increased temperature. It is, we believe, generally allowed that the vegetable is warmer than the surrounding air, and resists for a long time the effects of frost, if not succulent or peculiarly full of fluids. It has been said that this is owing to the high refracting power of the resins, by which they admit of the combination of a greater degree of heat; to the carbon being a bad conductor of heat, which confines it more effectually, as it abounds in the bark; and to the heat of the earth conveyed to the vegetable by its fluids. Each reason is, however, confuted, by the buds of the tallest trees resisting the effects of cold in winter, when no sap ascends, and no leaves are expanded. If the heat of animals be not a property of life, as there is much reason to suspect, the cause of vegetable heat may be the following. During the summer the combination of light seems, as usual, to separate heat; but as it does not appear at any time in a considerable degree, it probably enters into a new combination with some of the vegetable matter, from which, during the winter, it is slowly evolved. The temperature of vegetables appears to be uniform in the heat of summer and the cold of winter, so that there is probably some reservoir for its excess, though, in the present state of our knowledge, it cannot be pointed out.

The great line of distinction between organised and inorganised bodies is, that the latter increase by juxta position of particles externally; the former by an intussusception of the nourishment, and its application from within. Organised bodies include animals and vegetables, and it would not be improper to compare the functions of vegetables with those of animals of the lower classes, to show more closely the concurring and discordant appearances, but that it would lead us into too extensive discussions. Some observations have led naturalists to consider different supposed vegetables to be the nidi of animals, and these we must shortly notice.

The tremellæ, which have been usually considered as plants, have neither roots, leaves, nor flowers: they wholly consist of a gelatinous substance, and seem, in reality, the nostoch only. The latter, in stony ground, may be seen to assume in part the form of the tremella lichenoides, and in part to retain its own. In fact, the nostoch successively passes into the lichen gelatinosus, crispus, rupestris, and fascicularis, as well as the tremella verucosa; and these again change to other plants, the lichen crispus assuming the form of the lichen granulatus. From these observations, for which we are indebted to Carradori, whose memoir is analysed in the Annales de Chimie, the tremellæ must probably be banished from the vegetable kingdom. In addition, we may observe that Adanson has seen the threads of the nostoch contract and dilate; Fontana has shown that its filaments, like those of the ergot, were truly animals which die and revive by the action of water only; Corti and Scherer have seen the animals escape from the centre to the borders; and the nostoch, in a chemical analysis, yields ammonia. The last, indeed, is not a decisive argument, for many vegetables afford the same principle; but these have such decided marks of a vegetable nature that no error can arise.

It is with less success that late authors have attempted

to raise the confervæ to the rank of animals. It is contended that winged insects are seen to escape from them, and that when these no longer appear the green mantling on the water does not increase. This may be true; but the confervæ expire oxygen. The nature of mushrooms has also been rendered doubtful, because electricity, which hastens the germination of vegetable seeds, and kills the ova of animals, not only prevents the germination of mushrooms, but even destroys those beginning to expand. Mushrooms, however, from their structure, must belong to the vegetable kingdom.

If we thus partly limit the empire of Flora, the latest microscopical observations have greatly added to it. The spots, the rust, the mould, on various plants are true parasitic, organised vegetables, which have each peculiar distinct forms and appropriate habitations; but these belong to the pathology of the vegetable kingdom, to which we hasten.

The diseases of plants are chiefly external. There is nothing analogous to the nervous diseases of animals, but exhausted irritability from excess of stimuli, or its defect from too great succulence. *Wounds* are common, and cured like those of animals, by excluding the air. *Ulcers*, in different parts, and of all the various kinds found in animals, are also common. They chiefly arise from lacerated or neglected wounds. *Fractures* and *clefts* are also frequent, and easily understood. *Decurtation* is the death of the upper branches from debility, either in consequence of a barren soil or a severe winter. As soon as the extent of the tree's power is seen, the branches should be cut off close to the living part, and this should not be too long delayed; for numerous vigorous lateral shoots seem to be thrown out by no more exertion than would push the sap to a very short distance in the dead part. *Exostoses* sometimes occur in consequence of an excess of nourishment; but often of its deviation from the true direction, induced by some weakness of the bark. On the contrary, the bark is sometimes too firm, and binds the tree so close as to prevent the circulation. This disease is styled *hide bound*, and it is necessary to cut down to the wood, in a longitudinal direction, from the first divarication of the branches to the earth. The bark, on the contrary, sometimes *exfoliates*; and it is necessary not only to guard against the access of air but of insects.

The diseases of the leaves are numerous, chiefly from parasitic vegetables, or from insects; but the leaves occasionally fall off from a burning sun following a cold wet season, and sometimes fade from a sterile soil. In cases of insects some cause of debility seems to precede. An insect never places its nest on a vigorous leaf, or perhaps the copious exhalations of oxygen may destroy it. The *curl* which happens often to potatoes is not easily understood. It seems to arise from a defect in the seed, and its immediate cause to be an unequal action of the vessels in different parts of the leaf.

The *ergot* demands particular attention, as it is the cause of such dreadful ravages, producing mortification and palsy in whole families, and sometimes districts, when the inhabitants are obliged to feed on ergotised corn. It consists of a total, sometimes only a partial, change in the grain itself, which loses its form, is bent, often appearing at one extremity like a tail. It arises from too great humidity of the soil, which affords an opportunity for some small animals to burrow in the seed, and to destroy it. Thuillier considers the disease as owing to a mushroom, a species of clavaria; but whether it be an animal or a cryptogamous plant, its chemical nature is animal, since it affords ammonia. It has been lately supposed to consist only in an expansion of one extremity of the seed. The cause of *caries* is unknown: the corn is cleaned from it by washing. When the husks are attacked, and the whole ear appear dry and brown, it is called by the French *charbon*. The *rust* is chiefly on the stalks, and, as sir J. Banks has very properly shown, depends on a plant of the mushroom tribe.

Sterility in plants is often occasioned by excess of vigour in the branches and leaves: it is checked by every cause of weakness. In the human race we have equally remarked that the largest families are not those of the healthiest and strongest parents; and that in almost every case of extraordinary fertility, as triplets, the health of the husband was infirm.

Diseases of the whole plant are, *chlorosis*, or *etiolation*, when the leaves grow white, and the plant loses its taste and smell; *plethora*, or the excess of vigour, which occasions sterility; *jaundice*, in which the leaves grow yellow, often from too frequent affusions of water during a hot sunshine, from a barren soil, more frequently from insects at the root; *anasarca*, from very wet seasons, when the plants, though green and apparently vigorous, lose their taste, and are either barren or the seeds germinate in the pericardium; the *frost*, from excessive cold, from which, if not long continued and violent, so as to destroy the organisation, the plant sometimes recovers, or if cut off near the root the latter throws out new shoots. Succulent, plethoric, or anasarcous plants are soonest injured, and most certainly destroyed. If these are expected to bear cold, the water should be gradually withdrawn before the severe season commences. When late shoots come out, which will not apparently bear the cold of the winter, the leaves should be taken off to prevent absorption.

Plants are divided into ANNUALS, BIENNIALS, ALIMENTARY, AQUATIC, CRYPTOGAMIC; ECONOMICAL; ETIOLATED; FAT or SUCCULENT; CLIMBING; HYBRID; HYGROMETIC; LEGUMINOUS; WOODY; MEDICINAL; ODORIFEROUS; VARIEGATED; PARASITIC; TINCTORIAL; and POISONOUS. We may add a few remarks on each.

Annuals and *biennials* are sufficiently known: they are opposed to *vivacious* or *perennial* plants, which are those which continue for more than two years. The annuals of our hot-houses are often perennial in their native soils, where the heat is considerable; and, on the contrary, biennials often become perennial, though annuals never become biennial. The marks of this quality, in botanical authors, are derived from a fanciful analogy to the sun and planets. As the course of the sun is completed in one year, its symbol ☉ is applied to annuals. As Mars employs two years in its revolution, its symbol ♂ is the mark of biennials; while that of Jupiter ♃ designates perennial plants.

Alimentary plants, in which we include the *cerealia*, are those employed in every country for the food of man. Were we to confine it to those which contain nourishment, to be extracted by art, the catalogue would be immense; for the greatest number of vegetables is supposed to contain a starch. If the cassada had not, for instance, for time immemorial, been extracted in Africa from the species of jatropha, it might

have been accounted a poisonous plant; and those who tried only the leaves of the potatoe would have never thought of eating its root.

Aquatic plants include those of rivers and of the sea. The river plants are only used as manure; those of the sea as manure, and for the production of soda. Some cannot live out of water, as the nymphæa, the water lentil, &c.; others delight only in moist places, as the willow, the iris, various reeds, &c. The willow will not live in water. Some French agriculturists have examined with care the different marshy plants, to ascertain those of which cattle are fond. They will not touch the butomus umbellatus, the reeds, the colchicum, the various species of carex, and sium: they are not fond of the eupatorium; but eat greedily the spiræa ulmaria, the salicaria, the arundo vulgaris, epilobium, and thalictrum. It is recommended, therefore, to destroy the former and cultivate the latter. As their seeds are small, they should be mixed with powdered gypsum, to add to their weight, and to distribute them more regularly.

The *cryptogamic* plants are, the ferns, lichens, and mushrooms, which have been sufficiently considered.

The *œconomic* plants contain not only the alimentary, but those employed in any way for the service of mankind, except the practice of medicine. The Dictionary of Kerner, published in 1790, in German, contains a description, a history, and figure, of every plant, employed for this purpose. As it is scarcely our object, we shall not, as we intended, make any extracts from this work. The œconomic plants are generally called by the French *plantes usuelles*.

Etiolated plants are those whose leaves are whitened and elongated by disease, or excluding the light. This change is designedly produced to lessen the acrimony of some esculent plants, as the endive, celery, &c. The last experiments which we recollect professedly on the subject are those of Meese, in the Journal de Physique, 1778. It has been asserted in the same work, that a moist heat, independent of light, will produce the effect; but though, as we have seen, the green colour is often destroyed, the leaves do not become white, except the access of light is prevented.

The *fat* or *juicy* plants are collected by Jussieu in four orders or families, the portulaceæ, the ficoids, the succulentæ, and coctoides. They are soon distinguished by their thick and fleshy leaves, their moderate height, and their perpetual verdure, often by their spines. They are natives of a hot climate, and carry in their leaves a resource against continued drought. For this reason they are soon destroyed by cold. Each leaf contains a bud, and becomes, when it drops, a perfect plant. If torn off for this purpose, the extremity must be dried before it is planted.

Climbing plants are those which, by means of their bracteæ, raise and support themselves against any object: they are opposed to the *volubiles*, or creeping plants, by the latter extending themselves horizontally.

Hybrid plants are produced from the pollen of a different species. They are the mules of the vegetable creation, but, unlike mules, produce fertile seeds. In succeeding years, however, the seeds lose their fertility, and the new species is usually lost. See Koelruter in the Petersburgh Transactions for 1782 and 1786.

Hygrometric plants are objects of singular curiosity. The two most curious are the calendula pluvialis and the sonchus sibiricus. The flower of the calendula, in good weather, opens about six in the morning, and closes at four in the afternoon; but if rain is to come on during the day, *unless in storms*, it does not open. When the latter closes during the night, it will be fine weather the following day: if it continues open, rain may be expected. The carlina vulgaris, which grows in dry mountainous spots, has similar properties. Its flower, when open, remains dry with the stalk, leaves, and calyx, till the following year; but in moist cloudy weather the calyx closes, and resumes its horizontal position in a dry season. In a warm chamber the calyx never closes.

Leguminous plants are sufficiently known: the common pea is an example. They are all esculent to some animals; but few are employed in our diet.

Woody plants, as opposed to herbaceous, are those whose stalks have some firmness; while the stalks of the latter never attain the firmness of wood, however soft. They are all perennial, but the converse is not true; for many perennials are not ligneous.

Medicinal plants are those employed in the cure of diseases: but there are none exclusively such; for even the most insipid plant may be useful as a demulcent or a gentle laxative. See MINERALIA *in initio* and MATERIA MEDICA.

Odoriferous and *variegated* plants are sufficiently known. In the leaves it is produced by weakening the plant; in the flowers, by a peculiar conduct, which the horticulturist knows, but will seldom explain. The duration is, however, temporary: the beautiful variegations of the tulip, for instance, do not appear in early youth, and in the same ground soon vanish. In the fruit it is more than an accidental variety.

The *parasitic* plants sometimes root on the tree that sustains them, sometimes in the ground, and attach themselves to the tree. The cuscuta, the viscus quarcinus, the hypocystis, the greater number of lichens and mosses are of this class.

The *tinctorial* plants are the indigo, the carthamus, the reseda, the isatis, and some others. For the *poisonous* plants, see VENENUM.

See Du Hamel Physique des Arbres, Ludwig Institutiones Regni Vegetabilis; Linnæi Philosophia Botanica; Senebier Physiologie Vegetale; Mirbel Traité d'Anatomie et de Physiologie Vegetale; Hunter's Georgical Essays, six volumes; Linnæan Transactions, Passim; Knight in the Philosophical Transactions, 1803, 1804, 1805, 1806; Darwin's Botanic Garden and Phytologia; Bonnet sur l'Usage des Feuilles; Des Fontaines Memoirs de l'Institut; Senebier Memoires Physico-chymiques; Geoponica sive de re Rustica; Plenck Physiologia & Pathologia Vegetabilium; Ingenhouz, and Priestley.

Since this article was sent to the press, we have received Dr. Smith's elegant and scientific Introduction to Botany, including the Physiology of Vegetables, but too late to enable us to avail ourselves of his remarks.

PLA'NTA MIRABILIS DISTILLATO'RIA. See BANDURA.

PLA'NTA ZEYLA'NICA. See MENTHA PALUSTRIS.

PLANTA'GO, (from *planta*, from the shape of the leaves). PLANTAIN, *centinervia, polyneuron*, is a small perennial plant, common in fields, or by road-sides; the leaves lie on the ground, have naked unbranched stalks,

bearing on the top a spike of small, imperfect, four-leaved flowers, followed by little capsules, which opening horizontally shed numerous crooked seeds.

PLANTA'GO LATIFO'LIA, *septinervia, heptapleuron, arnoglossum.* BROAD-LEAVED COMMON GREATER PLANTAIN, WAY-BREAD, LAMB'S-TONGUE, *plantago major* Lin. Sp. Pl. 163, hath oval leaves, seven ribs, prominent on the lower side, running from end to end.

PLANTA'GO MI'NOR, *angustifolia, quinquenervia, bipinella, pentaneuron, pentapleurum.* RIB-WORT, the GREATER NARROW-LEAVED PLANTAIN. *Plantago lanceolata* Lin. Sp. Pl. 164, β. It hath oblong five-ribbed leaves, and short thick spikes.

The leaves of each are ranked among vulneraries, and are mildly astringent; but unnoticed in the present practice. The leaves are applied to fresh wounds and cutaneous sores; and they have been given in consumptions, and profluvia. In spitting of blood the roots have been recommended by Bergius; and from three to six drams have been given daily in the intermissions of vernal tertians. Two ounces of the expressed juice, or the same quantity of a strong infusion, may be given for a dose. In agues it should be doubled, and taken at the commencement of the fit. C. Aurelianus, according to Pliny, described the virtues of the plantago, in a separate treatise, with all the enthusiasm of a discoverer.

PLANTA'GO CORONOPUS, Lin. Sp. Pl. 166.

PLANTA'GO PSYLLIUM, Lin. Sp. Pl. 167.

PLANTA'RES, (from *planta, the sole of the foot*). See POPLITEUS.

PLANTA'RES VE'NÆ. The tibialis posterior, having descended to the sole of the foot, forms these veins, by dividing into several transverse arches, which communicate with one another and with the saphena, sending ramifications to the toes.

PLANTA'RIS ARTE'RIA EXTE'RNA, one of the divisions of the posterior tibial artery, passes on the concave side of the os calcis, obliquely under the sole of the foot, to the basis of the fifth metatarsal bone, and from thence it runs in a kind of arch toward the great toe, communicating there with the tibialis anterior, which perforates the interosseous muscles. The convex side of this arch supplies both sides of the last three toes, and the outside of the second toe, forming small communicating arches at the end, and sometimes at the middle of each toe, as in the hand. The concave side of the arch furnishes the neighbouring parts.

PLANTA'RIS ARTE'RIA INTE'RNA. A division of the posterior tibial artery, having reached beyond the middle of the sole of the foot, is divided into two, one of which goes to the great toe, communicating with the branch of the tibialis anterior; the other is distributed to the first phalanges of the other toes, communicating with the ramifications from the arch already mentioned.

PLANTA'RIS MU'SCULUS, the muscle whose tendon covers the sole of the foot, is also called *tibialis gracilis*. It rises thin and fleshy from the outer condyle of the os femoris, near its extremity, passes down between the gastrocnemius and the soleus, is united by a cellular membrane to the tendo Achillis, and inserted into the insside of the posterior part of the os calcis, below the tendo Achillis. Winslow thinks that it is attached to the capsular ligament, and that it serves to keep it from being hurt by the motions of the joint. Dr. Hunter suspects that it hath some action with which we are not acquainted, seeing it is always distinct; but it is occasionally wanting on both sides.

PLA'NTULA MARILA'NDICA, (a dim. of *planta*). See GENSING.

PLA'NUM, (from πλανος, *flat*). See METATARSUS.

PLA'NUM OS. See ETHMOIDES OS.

PLASTER OF PARIS; gypsum, was employed by Mr. Home in ulcers, to produce an artificial scab, but without success. It is the same as selenite, and occasionally an ingredient in MINERAL WATERS, q. v.

PLA'STICUS, PLASTIC, (from πλασσω, *to form*). An active power in nature, in the opinion of some philosophers endued with a faculty of forming; the refuge of those who wish to exclude the interposition of a Creator.

PLA'TA, (from πλατυς, *broad*). See SCAPULA.

PLA'TANUS, (from its *broad* leaves). The PLANE-TREE. *Platanus orientalis* Lin. Sp. Pl. 1417. The leaves are large and lancinated; the flower amentaceous, formed in a globular figure, containing numerous stamina. The fruit, which is produced at a distance from the flower, is spherical; the seeds numerous, long, and apiculated, intermixed with much down. The leaves are said to cool and repel. See Raii Historia.

PLATES. Since the art of engraving has been more carefully cultivated, or at least that branch of it which represents the objects of nature, the recluse student has had many resources which he could not otherwise obtain. The anatomist can now convey the rare appearances which he has only once seen, the morbid changes, which may not again recur, and give a general, though not always an adequate and satisfactory, representation of the different parts of the human body. The natural historian can convey the discriminating form of the animal which he describes, and the plant recommended either as medicinal or salutary, as subservient to the luxuries or the advantage of mankind; the mineralogist, though with less precision, the shape of the crystal, or the general appearance of the fossil or ore. This happy art is coeval with the invention of printing; for printing was first the impression of letters, conveyed by fixed wooden blocks, on which the characters were engraved; in fact the first printed pages were wooden plates. A specimen of a work of this kind was first published by a physician, Dr. Hartlieb, in small folio, 1448. Die Kunst Cyromantia-hatt, zu deutsch gemacht. The earliest medical work, however, which was published from moveable types, is said to have been the Ruralia Commoda of Petrus de Crescentia, printed by Schlusser, in 1471: but we observe an edition of Petrus de Apono published at Venice in the same year.

The first plates were apparently botanical, published in the Ortus Sanitatis. The editio princeps of this work, without date or place, seems, from evident marks, to have been published at Moguntium by Schoffer of Gernzheim, one of the inventors of the art of printing. The next work of this kind was the Herbarius, executed at Padua in 1485, with similar rude representations of plants.

The first representations of animals, not of common ones, but collected and described with scientific accuracy, appeared in a Dialogus Creaturarum, by Alexander Anglicus, at Gonda, in 1480; and it was followed in 1482 by Magenberger's "Book of Nature," published at

Ausberg, and by Meydenbach's Tractatus, de Animalibus, &c. This last work merits particular notice, as in it was the first representation of the human skeleton.

The first distinct anatomical plates are attributed to Hundt of Magdeburg, whose Anthropologia was published in 1501; but the diligence of professor Blumenback has discovered plates of the viscera in the Fasciculus Medicinæ of Ketham, which appeared at Venice in the preceding year. They were followed, seventeen years afterwards, by the plates of Hack, which, however, were only published at Strasburg in 1519. In this interval, however, Marcus Antonius de la Torre dissected bodies with care, and Leonardo da Vinci drew the forms with red chalk, laying in the bones, nerves, and vessels, with ink. These plates were never published, but are, at present, in the king's library, and Dr. Hunter speaks, with enthusiasm, of their elegance and their accuracy; though in this respect they are by no means uniform. Their era is not known, but Leonardo died about the close of the fifth century. Berengarius, about the middle of the following century, was himself an anatomist and artist; but the triumph of anatomy was the publication of the works of Vesalius, the drawings of which were executed by Titian.

Plates of mineral substances are not common. The first attempts are little more than mathematical diagrams of the general forms, or of the crystalisations; and the first attempt to give a proper display of hard bodies was, we believe, the Conchology of George Geve, a painter at Hamburg, in 1755; but this was soon eclipsed by the splendid Recueil des Coquillages, published by Regenfus under the patronage of the king of Denmark in 1758. We mention the latter, as besides the shape and relief of the shells, which are admirably delineated, we can almost distinguish their texture and hardness. Many other delineations of fossils may be noticed, but indifferently executed; and the first successful attempt was the delineation of the woodtin, in M. Klaproth's tract, on the Fossils of Cornwall. In Jacquin's Collectanea we find some beautiful and correct representations of fossils; but the chief work was Mr. Rashleigh's specimens of British minerals, selected from his cabinet of Menabilly, published in 1787. They are elegantly and accurately represented; but a Supplement was executed in a very inferior manner. In some late German works we have observed similar attempts, and in the Annales du Museum National are some coloured plates of peculiar beauty and accuracy, particularly of the urinary calculi. Mr. Sowerby's delineation of minerals also merits considerable commendation, though by no means so highly finished as the works alluded to.

The originals of the plates in this work, and the reasons for their selection, we shall notice in a separate article at the end. We shall now shortly point out the best plates in the different branches of medicine.

ANATOMY. In osteology we have the plates of Cheselden and Le Sue, which leave us scarcely any thing to wish; and in myology those of Cooper or Bidloe and Albinus. Of the brain, the plates of Vicq. d'Ayzr are without a rival, and of the arteries of the neck, with their relative situation to the muscles, the plates of Haller give ample information. We long wanted an adequate and correct representation of the contents of the thorax and abdomen in their relative situations; but the defect is supplied by the representations of Sandifort. The uterine system is fully illustrated by Hunter; the lymphatics by Mascagni; the nerves and arteries, in general, by C. Bell; the ligaments by Caldani; the eye by Zinn and Soemering; the ear by Du Verney and Saunders.

The changes produced by diseases are delineated in Dr. Baillie's elegant fasciculi, in the Thesaurus of Ruysch; and in the Pathologia of Haller, assisted by the numerous periodical works of the present era.

In medical botany we have the magnificent work of Plenck, and one of equal utility, though of less extent, by Dr. Woodville, assisted by various, well-executed, plates in the Linnæan Transactions, Annales du Museum National, and the illustrations De La Marck. The animals which afford medicinal substances are figured in Sonnini's edition of Buffon; the birds in Dr. Latham's System, or the Planches Illuminies of Buffon; the insects in the works of Olivier or La Treille, and the Biblia Naturæ of Swammerdam. Of the minerals used in medicine we have no adequate representation.

PLATINA. (See CHEMIA). It is employed in making the nicest chemical vessels, as it is with difficulty oxidated, and scarcely acted on by any menstruum. It is so ductile that it may be drawn to a very fine wire, which powerfully resists the action of heat and cold, either in elongating or contracting. It is with difficulty fused, though when purified its liquefaction is more easy. It is purified by adding to a solution of platina, in nitro-muriatic acid, potash sufficient to produce some precipitation. The remaining precipitation is effected by sulphat of potash, and the precipitate must be washed till the water no longer changes colour by adding prussiat of potash. It is then to be fused with about one and a half of its weight of soda. We have admitted its preparations with some hesitation among the *emetica nauseosa.*

PLATYOPHTHA'LMON, (from πλατυς, and οφθαλμος, *the eye*); an antimonial fucus used to enlarge in appearance the eye.

PLATY'SMA, (from πλατυς.) A flat and broad piece of cloth, of plaister, or of metal.

PLATY'SMA MYO'IDES, (from πλατυς, and μυς, *a muscle*), *quadratus genæ; detrahens quadratus; tetragonus; subcutaneus; depressor maxillæ inferioris; cutaneus musculus,* rises from the skin insensibly below the claviculæ, and is inserted into the basis of the lower jaw: it then runs up and joins the triangularis, and is inserted into the angle of the mouth and the skin of the cheek. It depresses the lower jaw.

PLE'CTANÆ, (from πλεκω, *to fold*). See CORNUA UTERI.

PLE'CTRUM, (from πληττω, *to strike*). See TEMPORUM OSSA, UVULA, and LINGUA.

PLETHO'RA, (from πληθος, *plenitude*). A plethora, strictly speaking, is an excess of blood; but we have already noticed the various distinctions of plethora. (See MORBI FLUIDORUM.) A sanguine plethora is a predisposing cause of fever, inflammation, apoplexy, or rupture of the blood-vessels, if accompanied with inflammatory diathesis; but in a phlegmatic habit it is the cause of debility and languor.

There are few states of the system in which irritability is so considerable and troublesome; and it is of consequence to ascertain the existence of plethora,

since the exhibition of tonics, which are apparently indicated, greatly increases the whole train of symptoms. In such cases, a rupture of a blood-vessel, if not in the head or lungs, is the most salutary event. A plethora is, in such cases, ascertained by the habits of life, the age, the sex, and temperament. It occurs chiefly in the luxurious female, whose pampered appetite prepares a superabundance of blood, whose distensile vessels yield with little resistance, and whose secretions, from inactivity, are slow and inconsiderable. The lax habits which, in weak resistance, approach the female, in similar situations equally suffer, and the phlegmatic temperaments are also overwhelmed by a load of fluids. It is the disease chiefly of youth, or from the period of 25 to 40.

The pulse, in such cases, gives but an imperfect idea of the cause. It is often apparently weak; but when pressed with firmness the current of blood is not checked. If, observes Mr. Bromfield, the artery be covered with four fingers, firmly pressed, and then the three upper fingers removed, we shall find the blood rush with some violence against the lowest which remains. In many instances, however, even this criterion fails, and we must judge from the external circumstances above enumerated.

To relieve it, when ascertained, is a task of no less difficulty. Bleeding, sometimes attended with a little temporary relief, is occasionally followed by fainting; and after a little time the former fulness, and the debility, with the irritability, are increased. Evacuations by stool, and a feebler diet, occasion faintnesss, and exercise is attended with intolerable fatigue. No other plans will, however, succeed, and each must be used in such a gradual, guarded manner, as to prevent uneasiness. At first a meal may be lessened, soon afterwards abridged. A feebler diet, feebler in its alimentary powers, must be slowly substituted; and the exercise, at first, in a carriage may be supplied by the tax-cart, and afterwards by the horse, while the walk in a garden may be extended to an adjoining field. After the vessels have been in part emptied in this way, tonics or the cold bath may be safely used. Even when attended with phlogistic diathesis, bleeding must be only employed when apparently indispensable, and the force of the arterial system lessened by cooling purgatives, refrigerants, low diet, and active exercise.

The serous plethora is the disease of the aged, the weak, or the cachectic. It terminates in anasarca, in hydrothorax, or apoplexy. In these cases the serous, excrementitious discharges should be increased, particularly by urine and stools; the expectoration, if not sufficient, kept up; and the strength supported by a nutritious diet and wine.

See Vater Dissertatio Causæ & Effectus Plethoræ; Crellius Sanguinis Jacturam frequentem, Plethoram sustentare; Ludwig de Plethoræ Differentiis; Fischer de Plethora multorum morborum causa.

PLEURA, (from πλευρα, *the side*), *hypopleurios*. A membrane with which the breast is lined, and which reflected covers the lungs and diaphragm, as the peritonæum covers the intestines, the doubling on each side forming the mediastinum, which is close near the sternum, and more distant below. In the duplicature above, the thymus is placed. The use of the pleura is to give the contained viscera a smooth surface, and to confine an halitus secreted by the extremities of the arteries: the mediastinum keeps the heart more fixed in the centre of the body, and prevents wounds of one side the thorax from affecting the other. The pleura is of a firm texture, with many blood-vessels and nerves interspersed; subject to inflammation and abscess. See PLEURITIS and ABSCESSUS.

PLEURITICA. A PAIN IN THE SIDE.

PLEURITIS, (from πλευρα). A PLEURISY or INFLAMMATION OF THE PLEURA.

Three kinds of pleurisies are described; the true or inflammatory, the false and the spasmodic or flatulent. In Dr. Cullen's system it is a species of pneumonia, and he defines it a pleuritic pneumonia, attended with a hard pulse; a pungent pain, for the most part, of the side, increased particularly in inspiration; a difficulty in lying down on the side affected; a very painful cough, dry in the beginning, afterwards moist, and often bloody. He distinguishes four varieties. 1. *Pleuritides idiopathicæ simplices*. 2. *Pleuritides complicatæ*. 3. *Pleuritides symptomaticæ*. 4. *Pleuritides falsæ*.

The true pleurisy is an inflammation of the pleura, with pain and fever, in its strictest sense on that side of the membrane which lines the ribs, though frequently communicated to the portion of the membrane contiguous, which covers the lungs.

The pulse is remarkably hard, vibrating, and strong; but the pleurisy is principally known to be present by the pain in the side, with a high fever, a difficulty of breathing, and a short cough. The pain is usually just above the short ribs, increased by inspiration, and less on expiration; the breathing is consequently difficult, and the inspirations are short. The cough is short, suppressed, and in true pleurisy dry; but a mucus is sometimes spit up from the lungs, at first thin, but gradually puriform and bloody. When we have reason to think that the inflammation has extended to the lungs, and the disease has become, in the language of pathologists, the pleuro-peripneumonia.

The existence, indeed, of a pleurisy without some degree of peripneumony has, however, been doubted by Bonetus, and many of the ablest practitioners. The descriptions of almost every author combine apparently the symptoms of each, and it is by no means an easy, perhaps a possible, task to separate them. We shall add, therefore, the distinctions which have, we think, occurred to us at the bed-side.

Pleurisy differs from peripneumony by the pulse being stronger and harder, the pain more acute, the inspirations shorter, and more apparently spasmodic. The face is seldom flushed; the head lies low without increasing the dyspnœa; the cough is short and quick, without any expectoration. We think also that pleurisy does not commonly leave the side to affect the biliary system, though we have suspected its translation to the pericardium. Because there is a bastard peripneumony, authors have supposed that there is a bastard pleurisy; but, in their descriptions, we see only the rheumatic affection of the muscles of the thorax.

The distinction between the pleurisy and the inflammation of the mediastinum or of the diaphragm, is sufficiently easy from the seat of the pain; and, in the latter case, from the painful constriction, around, on breathing. Rheumatism of the muscles undoubtedly assumes at times every genuine mark of pleurisy; but

the distinction is of little importance, as the remedies are the same. Rheumatism, however, often shifts its seat to the joints, and the fever is sometimes diminished by general remedies, without any relief of the topical pain. In almost every instance also, in rheumatism, the part is sore to the touch.

We find some traces in authors of a putrid pleurisy. We cannot indeed deny the existence of such a disease; but from its general nature we think it improbable. Putrid fevers often attack with topical pains; and if these should be in the side, those practitioners who are fond of multiplying diseases may readily suppose that they have discovered a new one. To this error we must probably attribute the observation, that bleeding is sometimes injurious in pleurisy.

Pleurisy terminates, like other inflammations, in effusion, suppuration, and gangrene. The first is the most common; the last is peculiarly rare. Suppuration is most commonly the effect of that inflammation which arises from external violence; and in every instance, if we carefully attend, a fluctuation may be felt between the ribs, and the matter evacuated by a puncture or even a caustic. If the abscess bursts internally, an empyema is the consequence; so that, if symptoms of suppuration come on, the part affected should be examined with care, to solicit by poultices, or by a caustic, the evacuation of the matter through the skin. Suppuration is known to have come on by the cessation of pain, with the usual symptoms of shivering, throbbing, &c.

The causes of pleurisy are those of internal inflammation in general, viz. cold when the body is heated, particularly when partially applied. External blows and injuries undoubtedly bring it on, but a disease from these can scarcely be considered as true pleurisy, except when attended with general fever; and numerous stimulating bodies accidentally swallowed are supposed to bring on inflammation of this membrane. These causes do not, however, vary the regulations necessary for the relief of the disease.

The bad symptoms enumerated by authors are those of debility, with a livid colour in the countenance, breathing shorter though with less pain; in short those which show that a gangrene has taken place. When the pain remits, and shivers come on, we know that a suppuration is advancing; but in this case we can only attend, as we have said, with care, and solicit the pus to the surface. When this is perceived, a blister, an issue, or a caustic, will contribute to assist the external discharge. The mode we have found most effectual is, to cut between the ribs, somewhat below the point, till we form an issue, nearly through the intercostal muscles, large enough to hold a horse-bean. This, covered with the blister ointment, excites a discharge in a day or two, and the matter soon passes through the wound, which, after some time, heals readily. If there be no scrofulous taint in the constitution we have never found any difficulty in completing the cure, though the case is sometimes tedious: country air, a milk diet, anodynes, and tonics, greatly contribute to the salutary event.

When we speak of the cure of pleurisy, we must be understood as meaning to treat of the pure disease, unconnected with inflammation of the lungs, an event which indeed seldom occurs; but as it sometimes happens, it is necessary to consider it separately. At the end we shall state those circumstances of the coincidence of the two diseases which must modify our conduct.

Bleeding, in pleurisy, is so obvious a remedy, that it has been common in every age; and the measure of the evacuation required is such that, when excessive bleeding is recommended, so great as in pleurisy is mentioned as the standard. The disease was apparently more common and more violent in former ages than at present; for even the *Botallistæ*, as they are called, the followers of Botallus, are not reprehended as employing bleeding in too great a degree. The medical world were for more than eight hundred years divided in the dispute, whether the blood should be drawn from the arm of the side affected or the opposite one; and the authority, not of a college but of an emperor (Charles IX.) was called on to decide it. This singular determination, which was to quiet the minds of physicians, was prevented by an unfortunate accident; for the emperor died of a pleurisy, in consequence of being *bled on the wrong side*, and his successor was too much engaged in his political views to assume the office of a medical dictator. The curiosity of a subject, now almost forgotten, has led us to look into it, and our enquiries have not only been a source of some amusement but of advantage to ourselves. We shall add a short abstract of the whole.

The ancient authors, down to the era of Actuarius, where we limited the term, seem to have employed bleeding as the only remedy, even without adding the assistance of purgatives; and the blood was, in almost every instance, directed to be drawn from the arm of the side affected. The Arabians, on the contrary, seduced apparently by the Galenic doctrines of revulsion, directed the blood to be taken from the opposite side, sometimes from the vena saphæna; and they applied, for similar reasons, the cupping glasses to the legs. Yet when the violence of the disease was quieted, they certainly admitted of bleeding from the side affected. Subsequent to the revival of learning in Europe, the recommendations of practitioners have varied, but, in general, they have followed Hippocrates.

We think we perceive one circumstance which rendered the Arabian practice to be less effectual. They bled frequently, and in small quantities; for it is expressly observed, that much blood must not be taken from the opposite side, lest there should be none left to supply its place, and, of course, no revulsion could follow. The reason for bleeding in the vena saphæna, in cases where suppressed menstruation or hæmorrhoidal discharge was supposed to be the cause, originated in the idea that this evacuation would prevent the morbid matter from rising upwards. Mercurialis and Cæsalpinus have endeavoured to reconcile the opposite opinions of these different sects, but it is unnecessary to enlarge on their reasons, which are futile and unsatisfactory; nor could better arguments be drawn respecting the latter's ignorance of the circulation of the blood than from this part of his works. It may be worth remarking, that, in these authors, è directo et κατ ἰξιν, mean *on the same side*.

A circumstance suggested by Vesalius during this controversy merits some notice. In every pleurisy, whether on the right or left side, he contended that blood should be taken from the right basilic vein.

Since the arteries on both sides of the ribs, except the third superior, pour their blood into the azygos, and this vein inclines to the right, it is more readily, he thinks, emptied by opening a vein in the right arm; but when the upper ribs are affected, the blood, he observes, should be taken from the left, because these vessels are connected with the left intercostal. It is singular how much this idea caught the fancy of many cotemporary and succeeding physicians, especially when the valves of the intercostal were discovered. Ematus, Salceus, Fallopius, and many others, modified, opposed, or confirmed the opinion of Vesalius, which we now know to have little real foundation.

In the course of this enquiry we have found much reason to conclude that many of the reputed pleurisies were really rheumatic affections, since the pain was felt at the origin and insertion of the muscles of the thorax; an error, however, of little consequence. We have found also several traces of a putrid pleurisy, though not described with sufficient accuracy to enable us to judge whether it was really inflammation of the pleura with a putrid fever, a severe typhus with flying pains, or a putrid peripneumony. Wierus seems to describe the last, since it attended a malignant catarrh; Gesner the second kind, since it was relieved by a gentle diaphoresis. The obscure account of Cardon seems rather to refer to mediastina or carditis. But it is time to return more directly to the subject.

We now know that *bleeding* is chiefly useful by its general depletion, and its diminishing the tone of the arterial system. In violent cases of pleurisy it is therefore useful to take off a large quantity of blood from a large orifice, and, in general, to bleed in an horizontal posture, that fainting may not interrupt the discharge. Less than eighteen or twenty ounces in a robust young man should not be taken at the first operation; and if the pain or the hardness of the pulse be not lessened, nearly as much may be drawn within the next eighteen hours. It frequently happens that it must be again repeated. Incredible are the quantities sometimes taken, with only a slight relief for a very few hours; and these very large evacuations are in strong inflammatory habits essentially necessary. Topical bleedings, with leeches or cupping-glasses, are also necessary, if the pulse grows soft without any considerable diminution of the pain; but while the pulse continues hard and strong, the general bleeding must not be remitted.

Blisters are also indispensable remedies; but they should not be employed early, nor until it is found that topical bleeding will be no longer necessary. They may be placed on the part where the leeches have bit with safety; but on the wounds with the scarificator they have been applied more cautiously, lest the absorption of the cantharides should produce inflammation of the bladder. After a short time, however, a little swelling comes on in the lips of the wounds, and then they may be employed with little disadvantage. Such, however, is the violence and the rapidity of the complaint, that there is often little room for hesitation or delay.

Purgatives are spoken of by authors in terms so vague that it is not easy to ascertain their real advantage. We have not seen them produce any striking good effect; and we should suspect that they were not remedies well adapted to this disease. To avoid irritation from the intestinal canal is always necessary.

Diaphoretics have not been employed, we suspect, with sufficient attention; and from the analogy of this inflammation to rheumatism, as well as the little danger to be apprehended from checking expectoration, the powder of Dovar, with probably camphor and nitre, may be useful.

If the *seneka* root is highly useful in this disease, as has been alleged, the advantages must arise from its united powers of an emetic, a purgative, and a diaphoretic: but emetics alone are not essentially useful; and as the seneka has gradually lost its credit, it is probably by no means so highly advantageous as has been supposed.

In this simple view of the cure of pleurisy it is evident that we do not include any degree of inflammation of the lungs themselves, or even of their investing membrane. In peripneumony, though bleeding is useful and often necessary, we can neither evacuate so largely nor so repeatedly as in pleurisy, for the truly salutary discharge is by expectoration; and if the strength is too far reduced, the sputum is prevented. We may repeat that the fulness and redness of the face often distinguishes peripneumony. If this be observed; if the patient cannot breathe but in nearly an upright posture; if the cough is constant and harsh, with a slight frothy, glairy, or bloody expectoration; we may conclude that the membrane of the lungs, or the substance of the organ itself, is affected; and while we lessen the general inflammation by bleeding, we must cautiously diminish also that of the bronchial glands, and endeavour to bring on a salutary expectoration.

The bastard pleurisy is the disease, we suspect, often confounded with true pleurisy. It consists of a rheumatic inflammation of the intercostal muscles, often of the other muscles of the thorax or abdomen. The disease is distinguished by external soreness, and is relieved by bleeding and blistering. In this complaint the seneka is of no service.

See PERIPNEUMONIA; Sydenham's Works; Hoffmann's Med. Rat. Syst.; Fordyce's Elem. part ii.; Cullen's First Lines, vol. i. p. 311; Triller de Pleuritide.

PLEURI'TIS HEPA'TICA. A variety of pleurisy, complicated with an inflammation of the liver. See HEPATITIS and PERIPNEUMONIA.

PLEURI'TIS SPU'RIA. See RHEUMATISMUS.

PLEU'RITIS SPLE'NICA. See SPLENIS INFLAMMATIO.

PLEURO'DYNE, (from πλευρα, and οδυνη, *pain*). Pains in the pleura. See RHEUMATISMUS.

PLEURO'DYNE FU'GAX. See CRAMPUS.

PLEURO'DYNE RHEUMATICA. See RHEUMATISMUS.

PLEUROPNEUMO'NIA, (from πλευρον, and πνευμονια, *an inflammation of the lungs*). A pleurisy combined with peripneumony.

PLEURORTHOPNŒ'A, (from πλευρον, ορθος, *upright*, and πνεω, *to breathe*). A pleurisy in which the patient cannot breathe without keeping his neck erect. Blanchard.

PLEUROSTHO'TONOS, (from πλευρον, *the side*, and τεινω, *to stretch*). See TETANUS.

PLE'XUS, (from *plecto, to weave together*), in ana-

tomy, a net work, or a reticulated complication of vessels or nerves. See GANGLION.

PLE'XUS CARDIA'CUS, or PULMONA'RIS, is formed of the ramifications of both trunks of the eighth pair, and their mutual communications with the filaments of the intercostal or great sympathetic nerve. It is situated above the lungs, on the fore-side of the bronchiæ, and distributes nerves to the pericardium, &c. See NERVI.

PLE'XUS CHOROI'DES, *plexus reticularis*, or *retiformis*. When the fornix is cut off, and removed, we see a vascular web, called the *plexus choroides*, with several eminences which it covers. The two first are called *corpora striata*, and the other *thalami nervorum opticorum*. The first small eminences are united; the anterior are called *nates*, and the posterior *testes*. Le Dran explains the plexus choroides to be a folding of the carotid artery in the brain. See CEREBRUM.

PLE'XUS PAMPIMIFO'RMIS. See SPERMATICA CHORDA.

PLI'CA POLO'NICA, (from *plico, to knit together*). PLAITED HAIR. *Gehena helotis, kolto, rhopalosis*, the *trichoma* of Cullen, in the class *cachexiæ*, and order *impetigines*; a contagious disease, in which the hairs are thicker than usual, and so entangled that it is impossible to extricate them. This disorder is endemic only in Poland and Lithuania, and consists of several blood-vessels apparently running from the head into some of the hairs, which are greatly enlarged, elongated, and closely convoluted.

When the disease impends, porrigo, phthiriasis, profuse discharges of sweat from the head, often hæmicrania, violent pains in the neck, back, shoulders, loins, and the extremities, sometimes even resembling gout, are felt. In some instances, swellings, ulcers, and exostoses, not unlike syphylitic or scrofulous appearances, precede: the sight is often dim, and the nails fall off. In other cases, palpitations of the heart, delirium, mania, fevers of different kinds and types, with tingling in the ears, and even deafness, are the precursors of plica. All these symptoms disappear in a single night, and the plica comes on. In females, the predisposition to the disease sometimes appears by a large flow of the menses, and a shooting pain under the sternum. When it does not attack at once, a few locks, on the hinder part of the head, appear matted, and inclining to the thickened state. The hairs on other parts of the body are said also to be occasionally affected.

The disease is attributed to salt or bituminous water; to air confined by forests, and occasionally keen by the blasts from the Carpathian mountains; to dirtiness, or neglect of combing; to viscid or more acrid food. In no other country, however, do similar causes induce the disease. From the history given it is evidently a critical discharge, which no other can apparently supply; and if checked, the complaint will probably return. It is said, and appearances confirm the probability of the event, that fatal hæmorrhages have been the consequence of cutting off the hair; though other authors contend that this may be done with safety.

The disease is said to be contagious, by wearing the clothes, or using the bed linen of those affected: no stranger suffers from it, unless by the most immediate contact of one labouring under the disease, even though he has lived long in Poland. The French army, lately in that country, is said to have experienced it; and from them some information may at a future period be drawn, which we shall take an opportunity to avail ourselves of.

The cure consists in discharging the miasma by the safest outlets. As the bulbs of the hair are the organs which nature points out for its evacuation, the discharge from thence should be assisted. Warm fomentations to the head are consequently commended; and the decoctions of lycopodium, in water or beer, are said to be peculiarly efficacious. Erndtell, by a curious error, mistakes the branca *ursina* for the *lycopodium*. The warmer diaphoretics, with camphor, assisted by blisters to the back of the neck, are said to be useful; but active purgatives, emetics, and sudorifics, have been found to exasperate the disease. Though cutting off the hair is injurious, yet the spontaneous separation of the matted locks is attended with no danger. (Sennertus; Acta Naturæ Curiosorum, iii. 102. Acta Vratislaviensia, xiv. 103). Sulphur has also been strongly recommended.

See Erndetelii Warsovia Illustrata, p. 153, &c.; Coxe's Travels; Primitiæ Physio Medicæ ab iis que in Polonia and extra eam Medicinam faciunt collectæ i. 168 and 188; Philosophical Transactions, No. 256, 417, 483; Commercium Norimbergense, 1733. Tabul. iv. Fig. 4; Miscellanea Naturæ Curiosorum, Dec. i. An. 6 and 7, p. 197; Hoffmann. Epist. ad Bontokoe de Plica Polonica Vicat Memoirs sur la Plique Polonaise Lausanne, 1775.

PLICA'RIA, (from *plico, to entangle*; because its leaves are entangled together into one mass). See LYCOPODIUM.

PLICA'TIO. A violent shock and bending of a long bone without fracture.

PLI'NTHIUS LA'QUEUS, (from πλινθιος). See CIRCUS QUADRUPLEX.

PLUMBA'GO, (from *plumbum, lead*). *Plumbago; fer carbure* Haüy, iv. 98. BLACK LEAD. It is used for pencils, and not a medicinal substance. See CHEMIA.

Plumbago, in the vegetable kingdom, is lead-wort, or French dittander, because its leaves are covered with lead-coloured spots. *Lepidium dentillaria dictum*; *plumbago Europæa* Lin. Sp. Pl. 215, is a plant whose foot is fibrous, pungent, and perennial; the leaves alternate and entire; the calyx hairy; the flower monopetalous, placed on spikes. It resembles the parietaria, and may be a proper substitute for it.

PLU'MBUM, (from *palumba*, because its colour resembles that of a dove). LEAD. *Saturnus, aabam, abartamen, accib, allabor, alomba, alracas, capricornus, molybdos*. Greek writers often use the same name for lead and tin; and Latin translators interpret κασσιτερος by each term.

Lead is of a bluish white colour, but easily loses its lustre, gradually contracting a dark tinge, and at last a whiter hue. When rubbed it has a peculiar smell, though without taste, and tinges the fingers or paper of a blue colour. Its specific gravity is 11.35, and its hardness $5\frac{1}{2}$; but neither are increased by hammering, like other metals. It is very malleable, though but slightly ductile, and not very tenacious. It melts in a heat of about 590°, and at a higher degree the metal boils and evaporates. Its crystals, when slowly cooled,

seem to be polyhedra, with 32 sides, formed by six quadrangular prisms. Water does not dissolve lead, but facilitates its oxidation by the air, and the oxide itself is not soluble. It combines with oxygen in different degrees, and the successive oxidations are of a grey, white or yellow, red or brown colour. Lead melted in an open vessel soon affords the grey oxide, and if this be scraped off as soon as formed the whole of the metal may be converted into it; but its true colour is only obtained by a gentle heat with a slight agitation. If this oxide is exposed for a long time to a greater heat it becomes yellow, and is then styled *massicot*. It is singular, that the white lead, obtained by corroding plates of lead by the vapour of vinegar, or precipitating nitrat of lead by potash, contains the same proportion of oxygen as the massicot, viz. 0.07. The yellow oxide, ground to a fine powder, exposed to heat and *to flame*, with constant agitation, is styled *minium*, or *red lead*, and contains 0.09 of oxygen. Nitric acid dissolves 185 parts of this oxide, leaving 15 of a *deep brown powder*, or, when properly prepared, of a brilliant flea colour, containing 0.21 of oxygen. When heated it becomes yellow and vitrifies, emitting oxygen gas; inflames sulphur when triturated with it, and is reduced by melting on burning coals. All the oxides of lead vitrify easily, and, *in that state*, combine with all metals except gold, platina, and silver, so that it is employed in separating these from the baser kinds. The separation takes place in a cup made of the earth of bones, called a *cupell*, through which the vitrified lead sinks, and is recovered again in brilliant reddish scales, called LITHARGE, q. v. Lead combines neither with carbone, hydrogen, or azote; but readily with sulphur and phosphorus, and most of the metals, particularly gold, platina, silver, mercury, copper and tin. It also admits of an union with oils, see NUTRITUM and EMPLASTRUM.

The acids unite in general with lead, but the salts have not been carefully examined. They are, in general, insoluble in water, without an excess of acid; but the solutions of those which are soluble are transparent. All have a sweetish and somewhat astringent taste; and the lead is precipitated by sulphurated hydrogen and the hydrosulphuret of potash, in a black, but by the gallic acid in a white, powder. A plate of zinc, in a solution of lead, is covered with the precipitate in its metallic state. All its oxides do not combine with acids: the white, however, unites with every acid; the brown apparently with the greater number, but its combinations have not been sufficiently considered.

The union of lead with the mineral acids is not easy nor rapid; and the salts are not used in medicine. The phosphat, the fluat, the arseniat, the molybdat, and chromat of lead are equally strangers in the medical world. The carbonat of lead is formed by the union of the carbonic acid with its oxide; most readily by precipitating the calx from the nitrat of lead by carbonated alkalis. It occurs, native, in large quantities, and it is the state in which the lead appears, when a white powder is formed in leaden cisterns which contain water, at the surface where it is contiguous to the metal: it contains about 15 of acid and 85 of oxide, and is wholly insoluble in water.

The acetous acid does not attack lead in close vessels, and only oxidates it when in contact with the acid and the air; but the oxide is immediately dissolved as it is formed. This is the sugar of lead, the extract of saturn, and Gowlard's extract, as at present prepared. It is usually in the form of small needle-like crystals, which are four-sided prisms, terminated by dihedral summits, sparingly soluble in water, unless with an excess of acid; decomposed by heat, the sulphuric, phosphoric, muriatic, fluoric, oxalic, malic, and tartarous acids, which form a salt nearly insoluble in water. The *malat* of lead is, however, soluble in the acetous, and weak nitric acids. The *lactat* of lead is soluble in water; and the *sebat* soluble in water and the acetous acid. Neumann asserts, that the acetite of lead is suceptible of fermentation, and that in consequence of it a spirit is produced.

The oxides of lead are employed in coarse earthen ware, as glazing, from their power of sinking into the body of the ware, consequently being less subject to scale. We know of no experiments made on this oxide. We once kept vinegar on a dish of this kind for twenty-four hours, in summer, without being able to distinguish by the nicest tests any saturnine impregnation. Sand is often mixed with the calx of lead, which probably preserves the metal from the action of the acid.

Lead, taken in any quantity internally, is highly deleterious to every animal: externally it is sedative, discutient, perhaps astringent. It destroys irritability, probably sensibility, and is on this account highly useful in external inflammations, in bruises, and those irritable sores which are highly painful and distressing. Internally the preparations of lead lessen the irritability of the arterial system, relieve internal hæmorrhages and spasms. Its effects, however, on the intestinal canal prevent its free and unlimited use; for by destroying irritability it produces what is termed the dry colic, or the colic of Poitou, terminated by nervous spasms, convulsions, and death. From the period when sir George Baker discovered lead in the Devonshire cyder every benevolent heart caught the alarm, and so numerous were the ways by which they supposed lead might be taken, that we could scarcely eat or drink from apprehension. It would fill several pages to detail all the terrors of authors; but we shall add a specimen of their observations, with some remarks.

The diseases in the bowels, followed by palsy, which attack smelters, and the various manufacturers in works where preparations of lead are employed, plumbers, painters, and printers, are known to arise from lead; and wines, or cyder, when acid and rendered mellow by the saccharine quality of the metal, may undoubtedly be injurious. It is said that the leaden dishes in which apples are pressed in making cyder communicate to the liquor a saturnine impregnation, and the consequence cannot be denied; but it is comparatively rare. If the carbonate of lead was soluble in water, or a weak spirit, we could easily imagine that the oxide formed in the dish of a pound might be carried into the vessel, and dissolved by the carbonic acid formed during fermentation: it remains, however, to be proved whether supercarbonated lead may not be soluble in cyder. Yet this is very improbable, for cyder colics are rare even in Devonshire, almost exclusively confined to those who drink the harsh cyder made from unripe fruit; and we *know* that such cyder will produce the Devonshire colic

when no lead is employed in the pounds. If a salt of lead is formed in the dishes, it must be a carbonate or a malat of lead. The carbonate is wholly insoluble in water, and the malat insoluble except in the acetous acid. Such salts meeting with the acid of a sour apple may undoubtedly be dissolved in cyder; and if such colics arise from lead they are produced in this way, but the various coincidencies which must take place to render the cause efficacious, will show that the effect must be rare, and it is truly so. It is asserted also by many authors of credit, that saturnine applications to wounds have produced the most violent colics, and we cannot deny it, but must add, that by some singular fatality surgeons of the most extensive experience in a large hospital, and no inconsiderable circle of private practice, have never met with a single case of this kind. To the effects of lead on the bowels these benevolent and timid practitioners have added cardialgia, vomiting, dyspepsia, pains in the limbs resembling rheumatism, hæmoptysis, terminated by a suppuration of the lungs, a metastasis of morbid matter from the hands to the breasts in females, palpitation, anxiety, fainting, convulsions, epilepsy, gangrene, atrophy, and death. It is singular that they have not added one effect which we have often seen, viz. bilious accumulations in consequence of costiveness. In reality, colic pains, with such accumulations, obstinate costiveness and palsy of the hands, the latter preceded often by pains in the arms, and nervous debility, are the only symptoms of this poison.

Undoubtedly the vapours of lead from the smelting-houses are injurious, not only to vegetable but animal life, within the reach of its noxious effluvia; but it requires a strong faith to believe that birds of almost every kind have died from drinking water out of a dish glazed with litharge. Dogs may undoubtedly lick up the oxide of lead from dishes of that metal where water has long stood, but they will scarcely lick it from clothes; nor will doves suffer from eating particles of lead, chicken from drinking milk from a leaden vessel, or birds from picking seal-wax. In the human body it is equally absurd to speak of the danger of leaden pumps, leaden cisterns, the tinning by which copper vessels are covered, which contains a portion of lead or of pewter. The oxide produced, if such vessels contain water, we know to be insoluble, and in no instance are they, we believe, employed to hold vinegar, except the tinned copper vessels which contain lead only in the solder, and so intimately combined with bismuth as not to be affected by the acid. Milk suffered to become sour in leaden vessels is, we suspect, a rare occurrence; and butter in such vessels rather grows rancid than acid. Sour milk is the acetous acid, and the solubility of a lactate in water does not apply to it: we have seen, also, that even the acetous acid, when the access of air is prevented, will not dissolve lead.

The distillation of spirits through leaden tubes, and even lining the chamber which receives the oil of vitriol when sulphur is burnt, or the lead which the ores of the white vitriol may contain, we know, from the more correct chemistry of modern times, can produce no effect on the human body, as lead will not combine with either. The metal itself has been swallowed with impunity, nor can it meet with a menstruum in the stomach, which without the access of atmospheric air can dissolve it. We once heard a medical gentleman assert, that the coagulated fat which swam on the gravy of roasted mutton, on a pewter dish, contained lead, and should be taken off; and Dr. Hardy, from misunderstanding a passage of Pliny, has gravely observed that boiling cabbage in a *tinned* vessel would dissolve the *lead* in it. Such are the absurdities detailed when all the terrors are alive.

It is undoubtedly necessary to guard against the poison of lead with more anxious care, as its noxious quality is not betrayed by the taste like that of copper; but the properties of its salts, and the relation of the metal to the different acids, which we have anxiously pointed out, will show the folly of supposing that it can be introduced into the system in the greater number of ways described. The mode of discovering it, pointed out by ancient authors, is equally ridiculous, viz. a whiteness and sweetness in the water. The oxide is indeed insoluble; and if suspended may render water turbid, but its specific gravity will soon precipitate it. Sweetness it cannot impart, unless combined with the acetous acid, which either in wells or in the atmosphere it cannot meet with. The water which arises from the springs in the neighbourhood of Edinburgh, after rains, used to be white and sweetish, without the slightest suspicion of lead. The Bristol waters are soft, approaching to sweetness, without any such impregnation. The best tests of lead are, however, the hepar sulphuris; the hepar antimonii; or the hepar sulphuris arsenicale, dissolved either in water or spirit. They should be used soon after their preparation, or a portion of the sulphur is deposited; and the darker fluids, as wine, should be diluted previous to the experiment. If the liquor to be tried contain chalk, or tartar, the precipitate will afford an uncertain conclusion; and the colouring matter of wines, if such has been used, will often give the appearances supposed to arise from lead only. The *liquor probatorius fortior* of Hahneman is the most certain test, and we shall add the process for preparing it.

Two ounces of acid of tartar are to be dissolved in sixteen ounces of warm water, adding two drams of calcareous liver of sulphur, very dry, and finely powdered. These must be shaken together in a bottle for ten minutes; and after half an hour the clear fluid decanted into another bottle, which contains about half an ounce of the acid of tartar. The whole must be shaken together, and, after standing one night, decanted into small bottles, to be very carefully stopped.

The means of relieving diseases which arise from the unsuspected introduction of lead properly belongs to the head of poisons; but since they sometimes happen from using it as a remedy, it will probably be more convenient to speak of it in this place.

In what manner the lead is dissolved which is handled only we cannot say. Its absorption is assisted by heat, and it is not injurious unless from constant employment, and then only in particular constitutions. Numerous are the printers, glaziers, and painters, who have never suffered from the saturnine colic, and there are in reality few who ever experience it. The state of the metal, when it colours the hands, is not known. It seems to be an imperfect oxidation, with which we are not acquainted, similar perhaps to that state of mercury when it assumes the appearance of a black powder.

Is it an union of the metal with the electric fluid? The means of preventing it are simple and obvious. When glaziers lead is flatted in a mill it comes out warm, and this part of his business should be always performed in gloves: indeed these should be constantly worn in every part of his work which will admit of them. The printer cannot employ gloves; but if he feels any inconvenience, it will be a sufficient preservative to wash his hands with soap and water whenever he leaves his work for his meals, and perhaps to smear them slightly with oil when he begins. The painter should have water always at hand, and wash off immediately every atom of paint which accidentally falls on it. Each will find fat meat, particularly fat bacon, in a morning useful; and occasionally, if costive, a dose of castor oil, or two ounces of olive oil, may be taken. By these simple means we have preserved the health of many who have been constantly employed in either business, and experienced repeated attacks of a colic.

When symptoms of a saturnine colic, the first effect of lead, come on, oils, mucilages, diluents, and warm water impregnated with hepatic gas, are recommended; while stools are to be procured by cathartics, particularly castor oil. Without meaning to impeach the propriety of these directions, which are sanctioned by the first names in medicine, we would only contrast the empyrical practice of the Devonshire farmer, which we have known to be successful, viz. equal parts of brandy and oil of turpentine. If indeed the irritability of an organ be destroyed, an active stimulus is apparently the best means of restoring it; and if restored, milder purgatives will more certainly succeed. We have never found the oleum ricini sufficiently powerful without the aid of large doses of calomel; though the most active purgatives which have been recommended are the oil, magnesia, the bitter purging salt, and soda phosphorata (see COLICA). We forgot to mention, when speaking of the colica Pictonum (the *colic of the Picts*, as Dr. Wallis wisely translated it, who added that the Picts were subject to it), that the abdomen is usually retracted; and we lately found this symptom an important one, in distinguishing the lead colic of a glazier from a common bilious one, during an highly bilious constitution.

Lead is now almost banished from the practice of medicine as an internal remedy, and the courage of Dr. Reynolds has been spoken of with warm commendation when he ventured to order a single grain. We know, from experience, that it is by no means the hazardous remedy which it is generally supposed; and have given five grains two or three times a day without any disadvantage, interposing only a dose of the oleum ricini every two or three days. It was formerly given in headachs in a much larger dose, and then certainly brought on the dry colic. We strongly suspect, however, that our apprehensions have precluded us from an active remedy, though we would not recommend its use, except under the immediate inspection of an experienced, attentive practitioner.

Lead in its metallic form is rarely used, except sometimes in probes to keep wounds or perforations from closing. The ancients, however, recommended laminæ of lead to be applied to the loins in nocturnal pollutions, to discuss scrofulous glands, and schirri, threatening cancer, as well as to give a support to weak joints, and to compress wounded arteries. Malouin (Chimie Medicinale, vol. ii.) and Fernelius mention the practice of some quacks who have given small scales of lead to cure leucorrhœa, hæmorrhages, syphilis, and even gout. Van Helmont recommended small bullets in ileus, a practice which Naudeau imitated with success. We shall, as in our former articles on metals, first speak of the more usual preparations, and then shortly notice the forgotten formulæ of ancient pharmaceutists.

CERU'SSA, or WHITE LEAD; *dulcedo saturni, aboit, affidra, arsiora, blanca, effides, psymmithion, psilothrum*, is, as we have said, the first degree of oxidation, and usually prepared by exposing plates to the fumes of wine or vinegar, assisted by the heat of a dunghill. It is used as a cosmetic, but destroys the colour and the smoothness of the skin, injures the teeth and the constitution. It is adulterated with chalk and lime, so that the flaky masses called *flake lead* should be chosen. The weight will discover the adulteration, or the muriatic acid dissolve what chalk it may contain. If this test be not satisfactory, the lead itself may be reduced by calcining four parts of cerusse with two of fixed alkali and one of charcoal dust, and its proportion will show the purity of the suspected oxide. This preparation was used in the school of the Asclepiadæ at Rhodes, and recommended, by Dioscorides, externally to destroy slight excrescences, to heal wounds, ulcers, and excoriations, and to relieve pruratus. It has been also employed in erysipelas, in discharges from behind the ears, and to check the fetid perspiration of the feet; but in each case the most fatal effects are said to have followed.

Pulvis è cerussa compositus, collyrium siccum, pulvis cerussæ, is prepared by adding to five ounces of cerussa one ounce and a half of sarcocolla, and half an ounce of tragacanth. (Ph. Lond. 1788.) An improvement of the white troches of Rhazes, and used in inflammations of the eyes.

Vinegar of litharge is made by digesting four ounces of litharge, in a pint of the strongest vinegar, in a sand-heat for three days, shaking the mixture occasionally. It is not essentially different from a solution of cerussa acetata, though seldom pure, as the litharge generally contains a portion of copper. When this vinegar of lead is diluted with a large proportion of water, it relieves external inflammations from burns, bruises, &c.; itching and other uneasines in cancerous ulcers; and, before Goulard recommended it, was used for bathing inflammations of schirrous tumours to prevent their becoming cancerous.

The acetum lythargyri was also used as a secret remedy to stop bleedings, and cure schirrous tumours. It is said even to have cured cancers, and to have prevented impending gangrenes.

MI'NIUM; RED LEAD; *acastum; alumboti*. The state of the lead in this form has been already explained. Its preparation is a distinct business, and its makers melt large quantities of lead at once upon the bottom of a reverberatory furnace built for the purpose, so that the flame acts upon a large surface of the metal, which is continually changed by raking it backward and forward until the fluidity of the lead is destroyed; the calx is afterwards only occasionally turned. Red lead

is often adulterated with red oker, which is discovered by melting it as directed for discovering adulterations in white lead, omitting the alkali.

Saccharum saturni; cerussa acetata; sal, dulcor, mel et magisterium saturni. Take of ceruse, a pound; distilled vinegar, one gallon and a half; boil the ceruse with the vinegar until the latter is saturated; then filter through paper; and after proper evaporation set it aside to crystalise. (Pharm. Lond. 1788.) Repeat the evaporation and crystalisation until no more crystals are formed. The ceruse should be finely powdered before the vinegar is added; and during the boiling it should be frequently stirred with a wooden spatula. The strong acid which remains after distilling vinegar is the most useful. If the heat is considerable, the acid will be dissipated before it combines with the lead. It will be sufficient that the vinegar be hot. When the solution is exhaled for crystalisation, a small quantity of rectified spirit of wine may be added.

In all the intentions of the aqua lithargyri acetati, the sugar of lead may be used; and of all the preparations of lead for external use, cerussa acetata is perhaps superior to any, for we are much more certain of the strength of this preparation than of any other. The best mode of applying it is prescribed by Mr. Bell, in his Treatise on Ulcers, edit. 3. p. 43.

Whether this salt be employed in solution, with eight parts of water, as usually directed; or with oil of turpentine, which becomes red, styled by Crollius *balsamum plumbi;* with olive oil, oil of camomile and water, or other liniments, it is useful in every complaint for which the preparations of lead have been recommended. The various inflammations, even the erysipelatous ones, have been, it is said, relieved by this remedy, externally applied. What comes near to this external application is its use in inflammations of the throat; and in aphthæ, applied by means of a camel hair pencil; warmly recommended by Raulin and others, though not supported by more judicious practitioners. In gonorrhœa and leucorrhœa it is used as an injection when dissolved in water, sometimes with camphor; and after a little time with vitriolated zinc. Girtanner employs it, adding to each ounce of the solution thirty drops of the spiritus nitri dulcis, in which from three to eight grains of opium have been previously combined. In OPHTHALMIA, q. v. its use is well known.

In swelled testicles it is a very advantageous application; and in scorbutic ulcers, combined with opium and the white of an egg. It is highly commended in cancers; in foul ulcers; in hæmorrhages; in hysterical attacks, applied on wet rags to the abdomen; in diarrhœas, added to clysters; and in excess of lust, applied to the pubes.

As an internal medicine it has been warmly commended, and as eagerly decried; nor need we stay to enumerate the authorities on either side, since the general opinion has decided on its danger. It has been generally used in hæmorrhages, and all increased evacuations; in hectics; in gonorrhœas; in night sweats; in intermittents; in internal inflammations; in furor uterinus; mania; melancholia; hypochondriasis; headach; dropsies; diseases of the spleen; and more lately in America in chorea hysteria; epilepsies, &c. Various have been its combinations for these different complaints, and various its doses, from a quarter of a grain to half a dram. To detail them minutely would be useless, since we cannot recommend the imitation.

Extractum saturni, aqua lithargyri acetati, is prepared by gently boiling equal parts of litharge and vinegar for an hour and a quarter. If boiled longer after its separation from the mass, it is styled an *extract.* The London college call it *aqua lithargyri acetati,* and order two pounds four ounces of litharge to be mixed with one gallon of distilled vinegar, boiled to six pints, constantly stirring, then to be set aside; and after the fæces have subsided to be strained. Pharm. Lond. 1788.

Of this a cataplasm is made by adding ʒi of the water to one pint of rain water, and a sufficient quantity of bread crumbs to form a poultice. It is applied in local inflammation; commended in cancerous and scrofulous cases; for improving the state of unhealthy sores; and in milk tumours of the breast. Of this acetated litharge the *cremor lithargyi acetati* is formed, by adding one dram of the water of acetated litharge to one ounce of cream; of service in external ophthalmia, applied upon linen rags. It is powerfully sedative, and useful in burns or scalds from the great degree of cold attending its application.

Cerussæ injectio composita. ℞. Pulv. Ceruss. comp. ℈i. zinci vitriolati gr. vi. aq. rosæ ℥iv. m.; an useful injection in the inflammatory stages of gonorrhœa.

Cerussæ linimentum cum sapone. ℞. Solutionis saponis ℥ij. aquæ lithargyri acetati ʒi. m.; a good application for diseased joints, and for bruises with deep-seated inflammation.

Aqua saturni, is called by Goulard the *vegeto-mineral water.* He makes it by dropping into a quart of pure water an hundred drops of the extract of saturn, adding four tea-spoonfuls of brandy. This is his specific in external inflammations, particularly of the eye, for washing ulcers, cancers, scrofulous tumours, contusions, phlegmons, erysipelas, piles, chilblains, tetters, gangrenes, &c. A solution of the cerussa acetata will probably have the same effect.

Ceratum saponis was introduced into practice by Mr. Pott, and is made by boiling gently together a pound of litharge finely levigated; a gallon of vinegar; and eight ounces of soap, till all the moisture is evaporated. To this must be added a pound of yellow wax, and a pint of olive oil, previously mixed by melting, and the whole must be assiduously stirred from the beginning. It is a convenient and useful dressing for fractures and ulcers; and is nearly the same as Marshall's cerate, though we shall approach nearer to it in another preparation.

From the proofs of the fondness of the ancients for the preparations of lead already given, it will be expected that the ancient formulæ, particularly the external ones, will be numerous. We were indeed surprised at the extent of our list, but shall abridge our account so far as will be consistent with a sufficiently exact and comprehensive view of the subject; and for the sake of perspicuity shall divide those, not already noticed, into oxides, salts, solutions, plasters, and ointments.

OXIDES. The *magisterium plumbi* vel *saturni* is the white calx, precipitated from the saccharum by spirit of wine, more frequently by potash. When vitriolic acid is employed it forms a vitriolated lead; when the

muriatic, a muriated lead, then styled *lac plumbi*. Each is recommended in phthisis, in stomach complaints; even in iliac passion and schirrus of the liver: but at present both are neglected.

Precipitatum saturni is only the lead precipitated from the extract by dilution. It is used as a cosmetic, particularly in the little eruptions on the eyelids.

Plumbum ustum is prepared by adding a sixth part of sulphur to the lead, and calcining them together. It contains consequently some portion of the vitriolic acid; is of a grey colour, and was used in the age of Dioscorides. The *plumbi cineres* which have often the same appellation, and are used in a saturnine plaster, are prepared by merely roasting lead, without any addition. The *scoriæ argenti* contain chiefly lead, and are used with the same intention as the other calces of this metal.

SALTS. *Extractum saturni* is only the vegeto-mineral water, deprived of all its fluid. The *spiritus saturni*, or, as sometimes called, *oleum saturni*, is the vinegar expelled from acetated lead by the strongest force of fire. It first comes over in a thinner, afterwards in an oily, form; at first yellow, and next of a darker colour. It seems to possess only the virtues of a very strong vinegar. It was formerly recommended in lepra, scabies, lues, and melancholia; but has apparently no peculiar virtue. Crollius gave three drops of the oil, mixed with wine, in colic.

Nitrum saturninum is prepared by dissolving three parts of nitre with two of acetated lead, and crystalising the solution. It seems to be an astringent; is recommended in hæmorrhages, and by Schroeder in asthma. There is apparently little reason to suspect any decomposition, and the salts seem to crystalise together. If a double elective attraction takes place, the result will be nitrat of lead and acetated postash. If the preparation is so highly astringent as its admirers represent, this may be the case.

SOLUTIONS. Acetated lead in a fluid form occurs under different titles. The *acetum saturni*, in old pharmaceutical authors, has sometimes a small proportion of nitrous acid added; and, combined with a little of the camphorated spirit, has been recommended as a clyster in diarrhœa. The *acetum cerussæ*, and *acetum minii*, sometimes called *tinctura minii*, are similar preparations. The latter is ordered by Salchow in a dose of four drops, four times a day, in a case of gonorrhœa, while the vegeto-mineral water was constantly applied to the testicle, which at the same time was swollen.

The *extractum saturni* of Janin is made by evaporating the acetum lythargyri to the consistence of a paste. Two parts of this extract are then diluted with sixteen parts of warm water, and the whole kept in well-stopped phials. It is supposed to be superior to Goulard's extract in inflammations of the eyes; and when used, four drops of the extract, with three of camphorated spirit of wine, are added to an ounce of water.

Goulard's extract is also an inspissated vinegar of lead, again reduced to a fluid form by the affusion of water. It is only used in this state, except when the author seems to have applied it of a thicker consistence, approaching that of a plaster, to an inflamed tumour of the breast. The extract is employed in all cases where the acetated cerussa has been recommended; and when joined with one-third of oil of turpentine, one half of axunge (of a hare), and one forty-eighth of petroleum, has been applied with success to scrofulous swellings. Added to the extracts of hemlock, henbane, and opium, it is said to have relieved swelled testicles. Bell has recommended it in prolapsus of the iris, as well as in scrofulous, spongy, and torpid ulcers. An anonymous German author speaks of it in terms of commendation, when joined with soap, and applied to cancers; and with aromatics to tumours of the arm. In fomentations, with warm astringent decoctions, it is said to relieve incontinence of urine from a debility of the sphincters, phymosis, paraphymosis, ulcers of the penis, and bubos.

The vegeto-mineral water of Goulard is only the diluted extract, with a double quantity of spirit of wine, that is, double the quantity of the extract. It is recommended in almost every disease already mentioned, and many others, particularly in erysipelas from an external cause; burns of every kind; the bites of insects; gun-shot wounds; prolapsus of the rectum; incarcerated hernia; venereal complaints; sinous ulcers; ozæna; fistula lacrymalis; and tumours either glandular or of the joints. Other authors confirm, in part, the various virtues of this fluid; and Salchow adds, that pains in the teeth are relieved by rinsing the mouth with a diluted solution of it, and even gouty pains alleviated. Goulard recommends from twelve to fifteen drops, diluted with a measure of water, in heat of urine, an involuntary discharge of semen, gonorrhœa benigna, and even dysentery.

The *lac virginis* is the same as the lac plumbi, formerly mentioned, viz. the acetum plumbi, from which the lead is precipitated by means of alum, or common salt. The *psoricum Galeni*, whose use is known from its title, is a solution of lead with double its weight of chalchitis, a vitriolated iron, or an oxide of iron, in vinegar. The *oleum saturni* is made by dissolving the saccharum saturni again in vinegar, crystalising it, and suffering the crystals to deliquesce in the air. The *tinctura antiphysica* was not long ago in an Edinburgh dispensatory, but deservedly neglected. It is an useful astringent, but owes its virtue to the salt of iron, for the lead is almost completely precipitated.

PLASTERS. These are uncommonly numerous, for preparations of lead have been added to plasters of almost every kind, since the time of Dioscorides. A list of the titles only would be unsatisfactory, and to describe the formulæ would be tedious, for near eighty different plasters have been enumerated. We shall omit them also for another reason. In the form of a plaster the lead is so intimately involved with the wax and oil, that it scarcely exerts its peculiar powers; and by far the greater number owe their utility to the other ingredients.

The OINTMENTS, including the CERATS, exceed forty, but we shall only enumerate a few of the most important. The *unguentum è cerussa acetata*, the *nutritum*, and the *ceratum saponis*, have been already noticed.

The *unguentum ad ambusta* of Juncken contains cerussa, camphor, powder of olibanum, and oil of roses, with the white of an egg; but that of Jurine is more neat and effectual. A dram of litharge is dissolved in an ounce of olive oil, to which is added an ounce of wax, and a scruple of opium. In lax, spongy ulcers, the proportion of litharge is increased; and in case of violent pains that of opium is larger. The *unguentum apostolorum* of the Wirtemburg pharmacopœia contains turpentines, with a numerous host of resins and gum-

resins of a tendency opposite to that of lead. Barbette's *unguentum ad cancrum ulceratum* is rather an astringent preparation than a saturnine. The union of the lapis calaminaris with lead is not uncommon; and the *unguentum è lapide caliminari* of the Swedish, the *desiccativum rubrum* of the new dispensatory, *unguentum de tutia* of Juncken, *unguentum fuscum* of Wurtzius, and *griseum* of Juncken; are of this kind. The *unguentum hæmorroidale noricum*, as well as that of *Wedelius*, each contain camphor added to the calces of lead; and in the former is also a proportion of opium. The *unguentum e minio camphoratum* of the Wirtemburg dispensatory is a similar formula, but containing a larger proportion of lead in different forms; very nearly resembling *Marshall's cerate*. The *unguentum mundificans* of Stahl is made by amalgamating lead with quicksilver in equal parts, to which is added the terra tripolitana, and the unguentum album camphoratum. The *unguentum ad opthalmiam siccam* of Senertus contains litharge, camphor, and aloes: it is applied on the eyelids, chiefly in ophthalmia tarsi. Numerous are the *unguenta ad scabiem* which contain lead. In that of the Wirtemburg dispensatory we find also styrax, oil of laurel, and mercurius precipitatus albus; in that of Schroeder, turpentine, common salt, and sulphur; in Juncken's turpentine, styrax, common salt, and juice of lemons.

The *cerats*, as the name implies, are of a greater consistence than the ointments, and for the reasons before assigned probably less useful. The *ceratum è minio*, however, of the Wirtemburgh pharmacopœia, contains camphor; and is said to be highly useful in burns, in inflammations, and in the troublesome suppurations which sometimes arise from blisters. The *ceratum saturninum* of Goulard contains one part of his extract, four parts of yellow wax, and four parts of expressed oil. If a portion of the zincum ustum be added it is said to be more efficacious, and the most fetid ulcers to have been cured by it; taking internally small doses of muriated mercury, or drinking freely of an infusion of malt. Cerated linen spread with a plaster composed of extract of lead, camphor, and wax, are said to be useful in rheumatic and gouty pains; as well as in tumours of the head, from external violence, buboes, and chilblains.

From the very extensive list of saturnine applications employed from the time of Galen to the present moment a fair inference may be drawn, that the external application of lead is not injurious to the constitution in general. Dr. Percival, Stoll, and some others, contend, that it has been occasionally so; and Tode, with a long list of authors on the opposite side, with the consent of the experience of more than 2000 years, declare their innocence. When we add the reflections already suggested, that, even applied to the stomach and bowels, it is less deleterious than has been generally supposed, perhaps imaginary terrors respecting its application will cease.

We may now enlarge a little more fully on its action. All the metals, we have said, are tonics, though we have reluctantly excepted lead. Yet when we consider the various tonics which we employ, we shall find room for suspecting them to contain a narcotic quality. The Portland powder, which was long continued, showed a strong narcotic power; and all bitters, if not occasionally remitted, seem to impair the tone they were intended to restore. May not then tonics act chiefly by repressing irritability; for though irritability originates in weakness, its continuance leads to its exhaustion? If lead then checks irritability, it may be considered as possessing, in one view, a tonic power; and of course not to differ from the other metals. If then, as we have said, iron is a tonic possessing an inflammatory stimulus, lead on the other hand may be such, combining also a power purely sedative. The discussion we must, however, resume, vide TONICA.

Can then its tonic power be obtained without its sedative? or can its sedative effects be procured without endangering the destruction of irritability in the intestinal canal? These are questions which we dare not answer fully, lest we should lead to dangerous, unwarrantable experiments. In the course, however, of this enquiry we have been led, from occasional facts recorded or incidentally mentioned, to think that the combination of mercury, perhaps of iron, may counteract its sedative power; and, from our own experience, we know the interposition of oily medicines will probably preserve the intestinal canal from injury. The stimulus of many spices are confined to the alimentary canal only; and these interposed may perhaps prevent injury from lead. Such reflections may lead to a cautious trial; for a medicine so active, and which, with proper management, might prove so salutary, should not be neglected from imaginary apprehensions, or resigned till it clearly appears that no corrector can be discovered.

See Neumann's Chemistry; Cullen's and Lewis's Materia Medica; Goulard's Treatise on the Effects and various Preparations of Lead; Aitken's Observations on the external Use of Preparations of Lead; Bell on Ulcers, edit. 3. p. 36; London Medical Transactions, vol. i. p. 257.

PLU'MBUM NI'GRUM. BLACK LEAD; *fabrilis nigrica*; *ochra nigra*; *wadt.* It hath none of the properties of common lead, except that of colouring in drawing lines. It is not now used in medicine, though formerly reckoned drying and repellent. Strictly speaking in modern minerological language it is phosphorated lead; but PLUMBAGO, q. v. is really meant.

PLU'MBUM CANDIDUM. See STANNUM.

PLU'MBUM CINEREUM. See BISMUTHUM.

PLU'MBUM RUBRUM. See ADROP and PLUMBUM.

PLUMME'RI PI'LULÆ. PLUMMER'S PILLS. Levigate calomel, and the precipitated sulphur of antimony, of each two drams, together; add three drams of the gum, and one dram of the resin of guaiacum; mix them well, and make them into a mass, with the balsam capivi.

These pills, Dr. Plummer, in the Edinburgh Medical Essays, recommends in spots, pimples, and flushing in the face, virulent gonorrhœa, sciatica, rheumatism, lues venerea, ulcers with pains and swellings in the feet, scrofulous disorders, &c. The combination is undoubtedly an useful one; but too long continued triture renders the calomel less active. The ingredients should be rubbed slightly together; and we have sometimes directed the calomel to be beat in after the mass was made. Indeed their uses are the same as those of the ÆTHIOPICÆ PILULÆ; q. v.

PLU'MULA. A LITTLE FEATHER; (a dim. of *pluma, a feather*). See CORCULUM.

PNE'UMA, (from πνέω, *to breathe*). SPIRIT, AIR,

VAPOUR, or the BREATH. (See ANHELATIO.) It is also the appellation of a water called *scythicus latex*.

PNEUMATICA. When the existence of an air, peculiarly pure, adapted to preserve life and flame for a much longer period than the atmospheric, was discovered, it was at once supposed that the universal medicine so long sought was found; and the sanguine expectations of physicians were still farther raised, when it was shown that it combined with the blood in respiration, giving it a more brilliant hue. Oxygen gas was consequently soon employed in various cases, particularly in hectics; but it was generally injurious, and appeared to increase the florid complexion, and the feverish heats, with all their distressing consequences. In fact it was soon found that this portion of the atmosphere, though necessary to support life, required to be lowered in its powers to prevent its too great stimulus; and we have at last discovered that the azote, the supposed injurious part of our atmosphere, contributes to some important functions, already hinted at, viz. the animalisation of the nourishment taken in.

Yet the prospect was too fascinating to be relinquished, and the rapid discovery of various other gases kept expectation alive, and fed with delusive hopes the anxious expectations of the sufferers, and their sympathising friends. We fear that the injudicious eagerness of some practitioners has contributed to render the disappointment still more painful, and the interested selfishness of others has prevented the discovery of the truth, by withholding the different facts necessary for its developement. From the present state of our knowledge little can be expected in medicine from the employment of factitious airs. We shall, however, shortly notice what experience has fairly shown, and point out those cases where expectations may still be fairly entertained.

The *oxygen gas* is highly stimulant, and when frequently breathed increases the irritability of the arterial system, often its tone. In still larger quantities it exhausts irritability, and acts like all stimuli in excess. Yet perhaps it has not been sufficiently tried in combination with air of a lower quality, particularly with carbonic acid gas, or in cases where the irritability of the system is too much diminished, as in chlorosis, scurvy, the cutaneous diseases of old age, in scrofula, &c. In some of these diseases the oxygenated salts appear to be useful medicines; and somewhat may be expected from breathing oxygenous gas, since dry elevated situations are often adapted to such complaints. Oxygen gas should be diluted with perhaps twenty times its quantity of common air, even in cases of diminished irritability, and with twice as much in others.

Carbonic acid gas has not been found efficacious in complaints for which pneumatic medicine has been employed, we mean in phthisis; nor has the air in the neighbourhood of lime-kilns appeared particularly salutary, where this gas is copiously mixed with the air of the atmosphere. In other forms it has been found useful. From fermenting poultices is has acted apparently as a powerful antiseptic; thrown on foul ulcers, and occasionally on cancers, it seems to correct the fœtor and amend the appearance of the discharge; and similar effects have followed from washing them with water impregnated with this gas. Internally, in the form of yeast, it is said to correct putrid acrimony in the bowels. The effects of the super-carbonated mineral waters in strengthening the stomach, and correcting symptoms of dyspepsia, have been frequently noticed.

The *hydrocarbonate* is prepared by decomposing water by means of hot charcoal. Its immediate effects are to produce vertigo, and it should be diluted, previous to its exhibition, by about thirty times its quantity of common air. It renders a strong pulse more weak; but if the pulse be previously weak from disease, it will after some time render it slower and firmer, should its effects be salutary. It is said to be useful in hectics; but has not, we suspect, been tried in other complaints. It appears to be in general sedative, and occasionally narcotic; nor are its effects in hectics very different from those of digitalis. We are sorry to be obliged to add, that we have never found it peculiarly advantageous.

Hydrogenous gas. The inflammable air of former authors, has had no fair trial as a medicine. Air of a lower temperature, and near marshes, where this peculiar gas appears to reside, is found useful sometimes in hectics, occasionally in asthmas. It has not probably been used in medicine, because it could not be breathed with safety, unless combined with oxygen; and in that state would be subject to explode. We do not recollect this union having been mentioned but by one author, who, speaking of the want of medical enterprise, observed, that if by the electrical spark such explosions were produced within the body, he knew "not what would be the consequence." In this opinion we cordially acquiesce.

Azotic gas. The mephitic air has been considered as so inimical to life, that we believe it has not been tried; but this gas, with a small proportion of oxygen, forms the *nitrous oxide*, which is said to act as a most pleasing stimulant, whose effects arise almost to intoxication without any subsequent languor. This air has not, however, been the subject of any experiments as a medicinal substance, so far as our information extends.

On the whole, perhaps, physicians were too much elated by the first discovery and the prospects it held out, and too soon disappointed by want of success. Much still remains in this department of medicine for a cautious trial. Yet we fear expectation may be again frustrated; for hitherto we have gained little by pneumatic medicine. It may be useful to add that Mr. Watt has contrived convenient portable apparatuses for these purposes, and has added suitable directions for using the different gases. See AER.

See Cavallo on Factitious Air; Dr. Beddoes' Works; and Dr. Thornton's Communications on Pneumatic Medicine, in the Medical and Physical Journal, passim.

PNEUMATOCE'LE, (from πνευμα, *wind*, and κηλη, *a tumour*); *hernia flatulenta* and *ventosa*; *pneumatosis*. A FLATULENT HERNIA, or WINDY RUPTURE, contains wind only in the herniary sac; but it is very rare. In some putrid fevers, in the small-pox, and gangrenes, some parts of the skin frequently crackle like parchment under the finger; and in a very corrupted state of the fluids pneumatocele may be formed. Mr. Bell observes that the term is sometimes confined to a distension of the scrotum by a collection of air. This hath been described by ancient writers as frequent; but all the tumours they describe as containing air were watery or true hernias. That species of hernia to which young children are liable is commonly termed a wind-

rupture, as well as the collections of water in the scrotum of new-born infants. In wounds of the lungs, air is sometimes extravasated into the surrounding cellular substance, passing into the scrotum, and over the whole body; and in highly putrid diseases air may be separated from the blood, so as to distend the cellular substance of the scrotum, as well as of other parts; but a real pneumatocele has never, probably, existed as a mere local affection of the scrotum. In the case of air diffused into the cellular substance, in consequence of a wound of the lungs, small punctures with the point of a lancet are found to be sufficient for evacuating it. But whenever the disease is induced by such a degree of putrescency as will separate air from the blood, a plentiful use of antiseptics and corroborants is indicated; but the disease will scarcely yield to them.

Mr. Pott positively asserts that there is no tumour of this kind, and in this situation, in a living animal: it is indeed particularly described by many writers, both ancient and modern; but the complaint is either a true intestinal hernia, or a species of hydrocele, frequently a tumour produced by a small quantity of fluid remaining in the lower part of the tunica vaginalis, after its communication above with the cavity of the belly is closed; and a true, but a small, intestinal hernia.

Some late writers mistake the encysted hydrocele of the tunica communis, which connects the spermatic vessels, for the wind-rupture; though it differs from the wind-rupture in its situation: but if the encysted hydrocele of the tunica communis is accompanied with an hydrocele of the tunica vaginalis, or with a true hernia, the case is with difficulty ascertained.

See Bell's System of Surgery, vol. i. p. 496; Parey's Works, vii. 16, 17; Pott's Chirurgical Works, quarto edit.; Cullen's First Lines, vol. iv.; Morgagni de Sedibus, &c. xliii. 35.

PNEUMATO'SIS, (from πνευματοω, *to inflate*), is considered as a genus of disease including complaints which arise from air in any cavity. It contains the *pneumatosis spontanea*, which arises without any evident cause, but usually from the separation of air in consequence of putrefaction; the *p. traumatica*, from a wound in the lungs, which suffers the air to escape into every part of the cellular substance; *p. venenata*, from poisons (see VENENUM); and *p. hysterica*, when the air is confined in the stomach and intestines. See EMPHYSEMA, PNEUMATOCELE, and GASTRODYNIA.

PNEUMATO'MPHALOS, (from πνευμα, and ομφαλος, *the navel*). See HERNIA UMBILICALIS.

PNEUMO'NIA, (from πνευμων, *the lungs*). An inflammation of the lungs, or its containing membranes. Dr. Cullen places this disease among the *phlegmasiæ*; defining it a febrile affection, attended with pain in some part of the breast, difficulty of breathing, and cough. The species are,

PNEUMO'NIA PERIPNEUMONIA. See PERIPNEUMONIA.

PNEUMO'NIA PLEURITIS. See PLEURITIS.

PNEUMO'NICA, (from the same). A sense of weight, or a load on the chest.

PODA'GRA, (from πους, *a foot*, and αγρα, *pain*). See ARTHRITIS.

PO'DEX, (*à pedendo*, from breaking wind). The FUNDAMENT. See ANUS and PRURIGO PODICIS.

PODOPHY'LLUM PELTA'TUM, (from πους, *a foot*, and φυλλον, *a leaf*, from its shape). See ANAPODOPHYLLUM.

PODOTHE'CA, (from πους, and τιθημι, *pono*). See CHIROTHECA.

POEGE'REBA. See CORTEX POGEREBÆ.

PO'HUN WATERS. See SPÆ AQUÆ.

POINCIA'NA, FLOWER-FENCE, *poinciana bijuga* Lin. Sp. Pl. 544; *frutex pavoninus; crista pavonis; acacia orbis American*, &c. grows in the East and West Indies: its seed-pods, infused with galls, afford the best black ink; but no part of the plant is medicinal. See Raii Historia.

POLE'NTA, (from *pollen, flower*). See ALPHITON.

PO'LGAHA. See PALMA COCCIFERA.

PO'LIUM, (πολιος, *white*, from its white capillaments). *Teucrium* Lin. The two following have been noted in medicine.

PO'LIUM MONTA'NUM LUTE'UM, SMALL UPRIGHT POLEY-MOUNTAIN; *teucrium polium* Lin. Sp. Pl. 792 α, is a small plant, with square stalks, oblong woolly leaves set in pairs, and labiated flowers.

PO'LIUM CRE'TICUM, *rosmarinum stœchadis facie; teucrium frutescens; t. creticum* Lin. Sp. Pl. 788; TREE-GERMANDER; POLEY OF CANDIA. The leaves are set on short pedicles, not indented; the flowers stand in loose clusters, each on separate foot-stalks.

The leaves and tops of each have a moderately strong aromatic smell, and disagreeable bitter taste. Distilled with water, they yield a small quantity of yellow essential oil; and the extract is very bitter. The leaves and tops are said to be corroborant, aperient, and antispasmodic. See Lewis's Materia Medica.

PO'LLEX, THUMB; *quod vi polleat*, because in power and strength it is superior to the other fingers. See DIGITUS.

PO'LLEX PE'DIS. The GREAT TOE.

POLLINI'CIO. See CONDIO.

POLYADE'LPHIA, (from πολυς, *many*, and αδελφος, *brother*). The name of the eighteenth class in the Linnæan system; comprehending those plants which bear hermaphrodite flowers, with three or more sets of united stamens.

POLYA'NDRIA, (from πολυς, and ανηρ, *a husband*). The name of the thirteenth class of the Linnæan system, comprehending those plants which bear hermaphrodite flowers, with many stamens, from twenty to a thousand, growing single on the receptacle. The number of the stamens distinguishes this from the first eleven classes; their situation on the receptacle separates it from the twelfth class, *icosandria*; and their simplicity avoids all confusion with the sixteenth and eighteenth classes, *monadelphia* and *polyadelphia*.

POLYCHRE'STUS, (from πολυς, *much*, and χρηστος, *useful*). An epithet of several medicines, assigned to them for their extensive utility.

POLYCHRE'STUM, (from πολυς, and χρηστος, *useful*). See GUAIACUM.

POLYCHRE'STUM SAL. SALT of many VIRTUES. See NITRUM.

POLYDI'PSIA, (from πολυς, and διψα, *thirst*). See SITIS.

POLYGA'LA, (πολυς, and γαλα, *milk*, from the quantity of its milky juice), *ambarvalis flos; amarella; polygala lutea* Lin. Sp. Pl. 990, COMMON BLUE MILKWORT, is a small perennial plant, with the leaves al-

ternate, uncut, and those on the upper parts of the stalk larger than those on the lower: the flowers are irregular, tubulous, tripetalous, labiated, set in loose spikes on the tops, the cup composed of five leaves, the two larger of which continue after the flower hath fallen, and embrace, like wings, a flat bicellular seed-vessel. The stalks of this common sort are procumbent; the lower leaves are roundish, the upper oblong, narrow, or pointed; the flowers are blue, purplish, or red; sometimes white, with a kind of fringed appendix on the lower lip; the roots are slender and hard. It grows wild in dry pastures, and flowers in July. The roots are similar in taste to the seneka, and said to have in a less degree the same effect in pleurisy.

POLYGA'LA SE'NEGA, and MARILA'NDICA. See SENEGA.

POLYGA'LA I'NDICA MI'NOR. See COLINIL.

POLYGA'LA VE'RA, *polygala major massiliotica; colutea caule genistæ fungoso; polygala vulgaris* Lin. Sp. Pl. 986 α. MILK-VETCH, used in infusion for increasing the milk.

POLYGA'LA AMARA, Lin. Sp. Pl. 987, is a narcotic bitter, and, like many other of this class, has been employed in phthisis pulmonalis, but with the usual success.

POLYGA'MIA, (from πολυς, and γαμος, *nuptiæ*). The twenty-third class in the Linnæan system, comprehending those plants which bear hermaphrodite flowers, together with male or female flowers, or both. This term, applied to a single flower, regards the intercommunication of its flosculi, as in the first, second, third, and fourth orders of the class *syngenesia*.

POLYGA'MIA FRUSTRA'NEA, (from *frusta, to no purpose*). The third order in the class *syngenesia*, comprehending such of the compound flowers as have perfect florets in the disk, producing seed, but imperfect ones in the ray, which are barren.

POLYGA'MIA SUPER'FLUA. The second order in the class *syngenesia*, in which the florets of the disk are hermaphrodite, and fertile; those of the ray, though female only, fertile.

POLYGONA'TUM, (πολυς, and γονυ, *a joint*; from its numerous knots or joints). *Sigillum Solomonis; convallaria polygonatum*, Lin. Sp. Pl. 451, is a plant with unbranched stalks, oval narrow leaves, ribbed like those of plantain, generally all on one side; on the other side hang oblong monopetalous white flowers, two or more together, on long pedicles, followed each by a black berry; the root, the part used, is white, thick, fleshy, with several joints, and some flat circular depressions, supposed to resemble the stamp of a seal. It is perennial, grows in woods, and flowers in May. The roots are said to be astringent, incrassant, and corroborant; if bruised and applied as a poultice, it dissipates the black colour from contusions. See Raii Hist.

POLY'GONUM, (from the same). KNOT-GRASS; *calligonnm, centinodia, carcinethron, corrigiola; polygonum aviculare* Lin. Sp. Pl. 519. The root is creeping and fibrous; the stalk and branches full of joints; the stalks recline towards the earth, are smooth, finely channelled, slender, and branched, full of knots or joints, from which grow long, oval, sharp-pointed leaves. The root is cooling, astringent, and hath been used against internal hæmorrhages; externally against inflammations. See Raii Historia.

POLY'GONUM BISTORTA. See BISTORTA.

POLY'GONUM PERSICARIA. See PERSICARIA.

POLY'GONUM MINUS. See HERNIARIA.

POLYGY'NIA, (from πολυς, *many*, and γυνη, *a woman*). A class of plants, in whose fructification there are many pistils, the female organs of generation.

POLYMERI'SMA, (from πολυς, and μερος, *a member*). Supernumerary limbs or parts.

POLYMO'RPHOS, (from πολυς, and μορφη, *a shape*). MULTIFORM. See SPHENOIDES OS.

POLYNEU'RON, (from πολυς, and νευρον, *a string*). See PLANTAGO.

POLYO'STEON, (from πολυς, and οστεον, *a bone*). the METATARSUS, which consists of many bones.

POLYPE'TALUS, (from πολυς, and πεταλον, *a flower leaf*). MANY-LEAVED. See PETALA.

POLYPHA'RMACOS, (πολυς, and φαρμακον, *a medicine*; from its various uses). See POLYCHRESTOS.

POLYPHY'LLUS, (from πολυς, and φυλλον, *a leaf*). Having many leaves.

POLY'PODES, (from πολυς, and πους, *a foot*). See ASELLI.

POLYPO'DIUM, (from the same; on account of its numerous ramifications resembling a polypus). POLYPODY. *Polypodium vulgare* Lin. Sp. Pl. 1544, α, is a fern with long leaves issuing from the root, divided on both sides, down to the rib, into a number of oblong segments, broadest at the base; it hath no stalk or manifest flower; the seeds are a fine dust, lying on the backs of the leaves in roundish specks, disposed in rows parallel to the rib; the roots are long and slender, of a reddish brown colour on the outside, greenish within, full of small tubercles, supposed to resemble the feet of an insect. It is an ever-green, grows in the clefts of old walls, rocks, and decayed trees. That produced on the oak is usually preferred, though not superior to the other sorts. It yields its virtue both to water and spirit; but the spirituous tincture is the sweetest, though the spirituous extract is only astringent. The leaves have a weak ungrateful smell, a nauseous sweet taste, a roughness, and a slight acrimony. Its virtues are those of the fern; but it has been lately given in mania, though with little success, and is frequently used in the catarrhs of old people, as like the fern it unites a slight astringency with its demulcent qualities. The ancients supposed it to be a purgative, and peculiarly fitted to discharge pituita. They therefore depended on it in cases of melancholia.

POLYPO'DIUM TE'NERUM MI'NUS, *filix querna repens, polypodium dryopteris* Lin. Sp. Pl. 1555, OAK-FERN; grows in marshy places. If the root is bruised and applied to the skin, while sweating, it is said to take off the hair.

POLYPO'DIUM FI'LIX FŒMI'NEA. See FILIX FŒMINEA.

POLYPO'DIUM ANGUSTIFO'LIUM, *lonchitis aspera, filix foliis polypodii; polypodium lonchitis* Lin. Sp. Pl. 1548. ROUGH SPLEENWORT, grows in rough uncultivated places. The root is aperient and diuretic.

POLYPO'DIUM FI'LIX MAS. See FILIX MAS.

PO'LYPUS, (from πολυς, and πους, *foot*); *multipes*, MANY-FEET. Under this title, animals the most dissimilar are arranged; but at present we confine ourselves to the first class of the moluscæ, the coriaceous. (See MOLUSCA.) Their characters are, a projecting head, a

fleshy body, covered with a coriaceous sac, or case, breathing by branchiæ, sexes separate, generally inhabitants of the sea, but sometimes found in rivers. The name conveys an erroneous idea, for the animal swims, and what have been styled feet are rather tentacula or arms; and indeed very powerful ones, if, as we are told by Pliny, Ælian, and Aldrovandus, they can draw down and sink the tallest vessels. They are carnivorous, and falsely said to devour, from want of food, their own arms. Polypi are, however, chiefly remarkable as the connecting link between the animal and vegetable kingdoms, since, like plants, they are propagated by cuttings; and, as the cause of the greatest revolutions of the globe, we allude to the formation of new islands and continents, by some species of these minute animals which inhabit and produce corals.

It is not generally known that polypi were luxuries at Greece and Rome, considered also as highly nutritious and aphrodisiac. Machon's Epigram on Philoxenes is quoted by Athenæus. The poet is supposed to be dying of an indigestion, from eating almost a whole polypus, and having bequeathed his poetry, &c. concludes,

Ut omnia mea abiens hinc auferam
Date mihi quicquid relictum est polypi.

In the French imitation the fish is the sturgeon, and in the English, the jowl (of salmon). The jest was too good to be lost.

The Romans were particular in fattening it, and nice in their management. It discharged spontaneously sea-water, so that no salt must be added; the flavour was contaminated by a knife, so that it must be cut with a reed. Polypi, it is said, are still salted in Dalmatia and Illyria, from whence they are brought to Venice, and the Greek priests dry them for their fast days. The ancients thought them carminative, as well as that they increased the secretion of semen. Ætius recommended them to those who were weak in the palestra. Diphilus and Paulus Ægineta observed, that they were highly nutritious and provocative. Galen gives a similar account. It is said also that the polypus was an ancient hieroglyphic. With its arms closed it represented caution and prudence; when extended, openness and dissipation.

When applied to the human body, the term implies coagulations and concretions of blood. The true polypus is only such a concretion of blood as consists of a whitish, fibrous, and pretty compact substance, formed from the gluten and fibrin, and differs widely from grumous or coagulated blood, which is called the *bastard-polypus.* In Dr. Cullen's Nosology it is a synonym of *sarcoma.*

Polypi are seated in the sinuses of the brain, the ventricles of the heart, the jugular veins, the veins of the uterus, and in any large artery or vein, usually formed in the dying moments, though sometimes during life, from a sudden stagnation of the blood, in consequence of terror or surprise. Those which are the subjects of operation are seated in the nose, uterus, and vagina, and are instances of sarcoma.

Other causes are said to be large draughts of cold water suddenly drank after being heated with exercise, a too free use of acids and of spirituous liquors, long-continued grief, apoplexy, epilepsy, hysteric fits, or spasmodic asthma.

The signs of a polypus in the heart or larger vessels are, palpitation of the heart, often excited by a slight cause, as commotions of the mind, flatulent aliment, or costiveness; an unequal intermitting pulse, often accompanied with fainting, difficulty of breathing, or a fixed pain about the heart.

The palpitation of the heart, and the anxiety which so often attend, are caused by mental emotions, flatulent diet, costiveness, &c. which, by disturbing the equable circulation of the blood, hurries it towards the heart, and this muscle, from the obstructing body, cannot properly contract. The inequality and intermission of the pulse are owing to the same cause; for when a regularly contracting muscle is impeded in its action, spasmodic exertions are the usual consequence. Polypi happen more frequently in the right auricle and ventricle than in the left, and oftener in the veins than in the arteries; on account of the weaker contractile force and slower circulation. If from any temporary stoppage of the blood a very small part of the gluten concretes, it soon forms a nucleus for additional coagulation.

Polypi, by intercepting the circulation, are often the causes of sudden death; for a more violent and continued intermission is not soon followed by action, even in a healthy organ; but where such morbid obstruction exists, it is not surprising if the heart contracts no more. They also hasten some other diseases to a fatal termination, as peripneumonies, pleurisies, asthmas, catarrhs, consumptions, &c.

As it is impossible to dissolve them, we should be anxious to prevent their increase, and to avoid all violent mental emotions; every cause of increased circulation; to keep the bowels loose, and avoid by the lightest diet the stimulus of indigestion.

PO'LYPUS NA'RIUM, UTERI, &c. *noli me tangere.* The sarcoma, often added, with little accuracy, as a synonym, is generally hard, not hanging by slender roots, but fixed on a large immoveable basis.

The polypus of the nose is an excrescence whose branches spread among the laminæ of the os ethmoides, and the whole cavity of one or both nostrils. (See BUCCACRATON.) They spread on the laminæ spongiosæ, nearly as the hydatids on the surface of the liver, and proceed from any part of the nostrils, or those sinuses of the cranium lined with the same membrane.

Polypi occur in many organs besides the nose, as in the uterus, the throat, and the rectum. They differ from the former as they are not merely masses of concreted gluten, but seem to possess independent life, though sometimes supposed to be the enlarged glands of the Schneiderian membrane. This opinion is, however, counteracted by their appearance in other parts, where there are no mucous glands, as in the uterus. No cause can be assigned for the disease. It sometimes appears constitutional, and occasionally hereditary; and is not the consequence of scrofula or lues. The pain is inconsiderable, except when the parts are distended by their increasing size. Hard polypi sometimes suppurate, and form malignant ulcers, which discharge a fetid sanies, but seem not to become truly cancerous. Those tending to such ulcers are usually of a livid hue, and are frequently painful.

Different polypi, and the same at different times, ap-

pear of different sizes and consistencies: their elongation is sometimes very rapid; at others they are stationary for some years. The soft polypi in the nose contract from the constant access of air, but the hard ones are not affected. Each kind is plentifully supplied with blood-vessels. The increase may be sometimes prevented by astringent applications, as a solution of alum, or a decoction of oak bark; by alcohol and vinegar. Mercury generally aggravates the complaint, and caustics are of little service, though they sometimes appear to lessen the softer polypi, and destroy small remaining portions.

When a polypus appears soft, and of a pale colour, without pain, it is in the most proper state to extract, and the operation best succeeds, as it has rarely more than one attachment, which is very small. This must be brought away with the polypus, and is easily effected if the forceps can reach or approach near to it. If hard, and apparently schirrous, it has generally a broad basis, and cannot be extracted. The attachment of the former kind is usually in the anterior parts of the nose; but of the latter in the posterior and higher regions. That kind which is involved with the foramina of the ethmoid bone cannot be extracted. Wherever the polypus appears it must be extracted anteriorly, for few can bear the introduction of the forceps up behind the uvula.

Mr. Sharp directs the following method of performing the operation: "Introduce a pair of forceps, with a slit at their extremities, for the better hold, an inch and a half up the nostril, to secure the polypus as near the roots as may be; then twist them a little from one side to the other, and continue this action while you pull gradually downwards; if it breaks, repeat the extraction as long as any remains, unless it is attended with a violent hæmorrhage, which is an accident that sometimes happens, and rarely fails, if the polypus is become schirrous: this hæmorrhage is soon abated by the contraction of the vessels, or the application of lint dipped in some styptic." It may be known that the polypus is removed, 1st, by the sight; 2dly, by the voice; and, 3dly, by the freedom of respiration through the nose. In introducing the forceps, it is difficult to avoid the ossa spongiosa; but for this purpose, the beak of the forceps must be kept as near as possible to the os palati. When the operator draws away the polypus, he may generally bring it away whole, if he draws and moves it very gently. If any part remain, the lunar caustic will destroy it. The ligature, when it can be applied, is often more successful than the forceps.

See Poterius, Rulandus, Wedelius, Celsus, Ægineta, Albucasis, Sennertus, Glendorp, Malpighius, Hoffmann, Levret, Le Dran, Sharp, and Heister. On the use of caustics, Loefler Beytrage zur Wundarzneykunst, who recommends butter of antimony, and the same work on the extirpation of polypi. For the use of the ligature, Hasselberg Commentatio Chirurgica. See also Bell's Surgery, vol. iv. p. 90; London Medical Transactions, vol. i. p. 407; London Medical Journal, vol. vi p. 252; Pott's Works, 4to.; White's Surgery, p. 253.

POLYSA'RCIA, (from πολυς, and σαρξ, *flesh*). *Obesitas; corpulentia; steatites* Vogel. Dr. Cullen places this disease among the *intumescentiæ;* and defines it, a troublesome pinguedinous enlargement of the body.

The cellular membrane of the body is supposed to be distinguished from the adipose by some peculiar structure, which adapts it for retaining the particles of oil secreted from the blood; but no such difference has been demonstrated, unless perhaps in the size of the cells. It appears, however, from the disease before us, that the fat may be collected in every part of the cellular substance, and that the great distinction arises from the greater or less motion to which the parts are subject. Thus the fat, in stall-fed oxen, will be accumulated even in the interstices of the muscles in large quantities, while, in the hare, where the loins are considerably exercised, it is rarely found even around the kidneys, or in any other part. Fat is often accumulated in the omentum; but in the fœtus the cells of this membrane contain only a gelatinous fluid, and fat is freely deposited under the skin. The latter certainly depends on the inconsiderable motion of the fœtus; the former is not easily explained. (See ADEPS.) The cause which occasions the accumulation of this oily matter has not been ascertained. The disease is, however, often constitutional.

Fat people are in general dull and inactive, subject to pains in the head and difficulty of breathing, apoplexies and palsies; sleep long and heavily, but are proverbially cheerful and good humoured. As it contains an acid, it has been supposed that the disease is owing to an excess of oxygen; but it more commonly occurs in low close situations to those who use little exercise, to butchers, cooks, brewers, and those who drink beer imperfectly fermented.

Its best remedy is exercise, but fat people are usually inactive. If, however, a firm resolution can induce the fat person to abridge his meals and his sleep, and use steady, constant exercise, he may soon lessen his bulk. This, however, should be done with moderation, or he will otherwise injure his constitution. Cyder-drinkers are seldom fat, so that he should adopt that beverage.

The fat person should not only abridge the quantity of his food but lower its quality. Dr. Cheyne, by a milk and vegetable diet, reduced his bulk considerably; and a miller is said, in one of the medical collections, to have produced the same effect by similar means. Soap, the acetum scillæ, and common vinegar, have been recommended for the same purpose; but they are seldom effectual till they have destroyed, in a great degree, the digestive powers. Fernelius recommends diuretics; Zacutus Lusitanus, leeches and scarifications; Borellus, chewing tobacco. Other authors recommend coffee, purgatives, and blisters; but the only advantageous plan is that already explained.

See Cœlius Aurelianus, Chron. lib. v. c. 11; Cullen's First Lines, vol. i.

POLYTRI'CHUM, (from πολυς, and θριξ, *hair*). MAIDEN HAIR; so called from its resemblance to hair. See ADIANTHUM.

POLYU'RICA, ISCHURIA, (from πολυς, and ουρον, *urine*). See ISCHURIA.

PO'MA AURA'NTIA. The ORANGE. See AURANTIA HISPANICA.

PO'MA SINE'NSIA. CHINA ORANGE. See AURANTIA SINENSIA.

POMA'CEUM, (from *pomum, an apple*). CYDER, *cidra*, is the juice pressed from apples, and fermented. The more austere cyders are the strongest, and keep longest. Cyder is an useful drink in scorbutic and melancholic habits; nor does it intoxicate so soon as wine, since it contains a large proportion of mucilage. It passes off freely in perspiration, and is often slightly laxative. Moderately used, cyder is more salutary than wine; and whey prepared with it is a much more agreeable drink for patients in fevers than that made with wine.

POMA'MBRA, (from *pomum, an apple*, and *ambra, amber*). APPLES OF AMBER are composed of odoriferous powders, to which oils are added, and these powders are made into balls, with wax, mucilage of gum-arabic, &c. E. g. take of mace and cinnamon, of each two drams; musk, civet, and gum-arabic, of each one dram; gum-tragacanth, two drams. Mix and make into balls. They are used only as perfumes.

POMA'TICÆ. See COCHLEÆ.

POMA'TUM, (from *pomum*). It was formerly made with lard, suet, and a species of *apples* called pomewaters; but at present it is only lard beat up into a light curd, with the addition of a little rose-water, or essence of lemons.

PO'MPHOLYX, (πομφολυξ, from πομφος, *a bladder*). A bubble excited in a viscid fluid by air, and from thence the name of a cuticular disease in the fourth order of Dr. Willan's system, styled the water-blebs, resembling the urticaria. The name also of the matter found adhering to the covers of crucibles, in the form of a light downy, whitish powder, which sublimes from the lapis calaminaris in making brass, sometimes called *nihil album, white tutty*, or *calamitis*.

PO'MUM, (from πομα, *drink*, because a pleasant drink is made of apples). See MALUM. An APPLE; an appellation of *staphyloma*; and in botany any fleshy vessel containing many seeds: all such plants are termed pomiferous. ANAPODOPHYLLUM is called *pomum maiale*, and MOMORDICA, *pomum mirabile Hierosolymitanum*. See also BACCA.

PO'MUM ADA'MI. A name for the lemon *fructu aurantii*; also for the protuberance in the fore part of the neck formed by the thyroid cartilage. (See ASPERA ARTERIA). This protuberance is thought to receive its name from a whimsical supposition, that part of the forbidden apple, which Adam eat, stuck in the throat.

PO'NDERA, (from *pendo, to weigh*). A WEIGHT. The varieties of weights and measures have greatly embarrassed the student, and retarded the progress of science; and, while we condemn French innovations, we should be at least certain that no Augæan stable required the active exertions of a reformer. We wanted, however, a *fixed* more than an *accurate* standard; and was the general idea of a given weight the same, what it really was would be of little importance. In our situation, however, we must look both to our predecessors and the present generation, and as we have strenuously urged the perusal of the Greek authors, we must endeavour to explain their language.

The grains among the Greeks was the twentieth part of a scruple, as in our present system, and the drams and ounces had the same relations as at this time. The *siliqua*, κερατιον, was one half of an *obolus*, and one quarter of a scruple. The *aureus* of the Arabians, and the *denarius* of the Romans, were equal to about a dram and one-seventh, nearly nine grains. Seven denarii, therefore, make an ounce. The *sextula* is equal to four scruples, the *duella* double of the sextula, equal to eight, and the *siliculus* equal to two drams. The *oxybathon* of Galen was equal to an ounce. The *sescuncia* an ounce and half, or the eighth part of a pound, was equal in weight to the *faba Alexandrina*; the *sextans*, one-sixth of a pound to two ounces; the *quadrans* and *triens*, the fourth and third part of a pound respectively. The *semis* is well known to be half; the *septunx* equal to seven ounces; *bes* or *bessis*, bis triens, eight ounces; *dodrans, dextans*, and *deunx*, nine, ten, and eleven ounces respectively. The *as*, vel *assis*, is the pound.

The *pound* weight among the ancients had three different values. The *zygostatic*, or *civil weight*, like our avoirdupois, was equal to sixteen ounces, called the μνα, or *mina medica*; 2. the *Athenian, Egyptian*, or *Alexandrian* pound, according to Galen, was equal to a hundred drams, twelve ounces and a half; 3. the *medical pound*, as at this time, consisted of twelve ounces.

The old French weights and measures differed from ours; but in their eagerness to make science all their own, the philosophers of that nation reformed their old system. It must be admitted that they have laboured their new division with no common care, and have employed the most scientific accuracy in determining the principle on which they rest. This is the quadrant, or quarter, of the earth's circumference, or the distance from the equator to the pole, determined by the length of a pendulum vibrating seconds; and their mean measure the METRE, the ten-millionth part of this quadrant, is estimated at 3 feet 11.3 lines, nearly, 39.37 English inches. The subdivisions and the increments of the metre are in a decimal computation.

Metre	=	39.37	Decametre	=	393.7
Decimetre	=	3.93	Hecatometre	=	3937.0
Centimetre	=	0.39	Chiliometre	=	39370.2
Millemetre	=	0.03	Myriometre	=	393702.2

The toise is equal to 76.734 inches English, and 576 French grains to 472.5 English.

In Long Measure the

		Yards	Feet	Inches
Decametre	=	10	2	9.7
Hecatometre	=	109	1	1
Chyliometre, 4 furlongs	=	213	1	10.2
Myriometre, 6 miles 1 furlong	=	156	0	6

Eight chiliometres are nearly equal to five miles.

Measures of capacity we have already mentioned. We may add, however, that the litre is nearly equal to $2\frac{1}{8}$ wine pints; fourteen decilitres nearly equal to three wine pints; a chilolitre, one tun, 2.75 wine gallons.

The weights are determined by the increments and decrements of the gramme, which we find differently estimated. Its true English value is 15.44 grains English, and the progress is as follows:

Gramme	= 15.44	Decagramme	= 154.44
Decigramme	= 1.54	Hecatogramme	= 1544.4
Centigramme	= 0.15	Chiliagramme	= 15444.02
Milligramme	= 0.015	Myriogramme	= 154440.23

A decagramme is 6 pennyweights 10.44 grains, troy; ℨiss. 4.44 grains apothecaries weight, or 5.65 drams, avoirdupois.

A hecatogramme is 3 ounces 8½ drams, *avoirdupoise.*
A chiliogramme 2 pounds 3 ounces 5 drams, *av.*
A myriogramme 22 pounds 1.15 ounces, *av.*
100 myriogrammes 1 tun, minus 33 pounds nearly.

We shall add an easy approximation of the French weights to the English, applicable to medicine, from Swediaur's Pharmacopœia.

Centigramme	=	⅕ grain.
Decigramme	=	2 grs.
Gramme	=	20 grs.
1½ Decagramme	=	½ ounce.
3 Decagrammes	=	1 ounce.
Hectogramme	=	3 ounces.
4 Hectogrammes	=	1 pound, *troy.*
5 Hectogrammes	=	1 pound, *av.*
Killogramme	=	2 pounds, *av.*
Myriagramme	=	20 pounds, *av.*

See Journal de Physique, vol. xlviii. p. 460, and vol. xlix. p. 98 and 161.

To return, however, to our own weights, the medical or troy pound is less than the avoirdupoise, but the ounce and the dram are greater. The troy pound contains 5760 grains, the avoirdupoise 7000 grains. The troy ounce contains 480 grains, the avoirdupoise only 437½ grains. The troy dram contains 60, the avoirdupoise rather more than 27.

The pound and the pint are called *libra* by the Latins; but there is not any known liquor of which a pint in measure answers to a pound in weight. A pint of rectified spirit of wine exceeds a pound weight by half an ounce.

PONS VARO'LII, (from its similarity to *pons, a bridge*); *Corpus annulare, processus annularis.* Varolius, an Italian anatomist, gave this name to an arch in the cerebellum, which he first discovered. See MEDULLA OBLONGATA.

PO'NTICA VI'NA. ACID, FECULENT, and TARTAROUS WINES.

PO'NTICUM MEL. A poisonous honey.

PO'PLES, (*quòd post plicetur,* bent backwards in supplication). The HAM, *ignye, ignys*; the hinder part of the articulation of the knee, or joint of the knee.

POPLITE'A ARTE'RIA, (from *poples*). The arteria cruralis, in passing the ham, is called *poplitea*, and is then covered only by the integuments. It ends by dividing into the tibialis anterior and posterior. Surprising as it may appear, it is a fact, that though the artery in the middle of the thigh may be tied with impunity, and the blood be distributed as usual to the leg and foot, yet the popliteal artery in the ham never can. An aneurism in this artery seldom lasts long enough to cause a caries in the adjacent bones. When it happens, a cure may be effected by taking up the femoral artery. (See ANEURISM). The artery in this part, when dilated, will increase, press on the lymphatics, and induce œdema and mortification of the limb, if the femoral artery is not taken up, or the limb amputated in proper time.

POPLITE'A VE'NA. The crural vein takes this name just above the ham, and at the lower part of the musculus popliteus it divides into the tibialis anterior, tibialis posterior, and peronæa. See CRURALIS VENA.

POPLI'TEUS, (from *poples*). The name of the sciatic nerve when it reaches the ham: it divides into two branches, which spread over the whole leg, called *plantares.*

POPLITE'US MU'SCULUS, (from *poples, the ham*), *subpopliteus*, from the place of its situation. This muscle rises tendinous from the external condyle of the femur, within the capsular ligament; passes tendinous under the ham inwards; plays upon the head of the tibia, and is inserted into its superior and inner part, serving to turn the toes inwards.

POPULA'GO, (from *populus*, from its leaves resembling those of the poplar). See CALENDULA PALUSTRIS.

POPULA'RIS, (from *populus, the people*). See ENDEMIUS; EPIDEMIUS.

PO'PULUS, (from the multitude of its shoots). The POPLAR, *ægeiros.*

PO'PULUS ALBA, Lin. Sp. Pl. 1463. WHITE POPLAR, *albara; farfarus*, grows in moist places; and a decoction of its bark is given to relieve strangury and sciatica.

PO'PULUS NI'GRA, Lin. Sp Pl. 1464. The BLACK POPLAR, is a tall tree, with dark green, rhomboidal, acuminated leaves, producing imperfect flowers in catkins. The female flowers are followed by membranous pods, containing a number of seeds winged with down. It is indigenous in watery places, and of quick growth. The young buds of the leaves are made into an ointment; and they abound with a yellow unctuous odorous juice, which they readily impart to rectified spirit of wine. The tincture yields a fragrant resin, resembling storax. See Raii Historia.

PO'PULUS TRE'MULA, Lin. Sp. Pl. 1464. The ASP, or ASPIN-TREE, grows in woods and marshy places; resembling the *p. nigra.*

PO'RCUS, (*quasi spurcus, filthy*). HOG; when wild, *aper*; in Greek, ὓς, and χοιρος; in Latin, *sus* and *scrofa.* Pork is not easy of digestion, and considered by Sanctorius and others to have the strongest tendency to retard perspiration; consequently it has been considered as unwholesome. The Jews, who were generally affected with lepra, were perhaps on this account forbidden to eat it.

As this animal is generally extremely fat, it is considered as highly nutritious to such constitutions as can digest it easily; nor is it, as has been supposed, indigestible when in its younger state. When salted in the form of ham or bacon it is less easily assimilated; but its stimulus renders it in small quantities sometimes acceptable to weak stomachs.

The name *porcus*, and *porcellus*, is given to some fish, particularly the dolphin, because they are said to root up the earth, like swine, with their snouts. *Porcus* also, from the Greek word χοιρος, is a name for the *pudendum muliebre.*

PO'RI, (from πειρω, *to pass through*). The pores of

the skin are described by Lewenhoeck as so small, that one grain of sand will cover one hundred and twenty-five thousand: but this was apparently an optical deception; for no future observer has discovered them. The extremities of the exhalents undoubtedly open under the cuticle; but their orifices are not visible.

PORRI'GO, (*à porrigendo*). See PITYRIASIS and FURFUROSI.

PO'RRUM, (from *πραω, to burn*, because of its hot taste). COMMON LEEK, is similar to garlick, but weaker. It is carminative and diuretic. The juice of leeks has sometimes succeeded in dropsy, when other medicines have failed.

PO'RRUS. See SARCOMA.

PO'RTÆ VE'NA, vel PORTARUM VE'NA, (from *porta, door*, or *entrance*). The splenic, mesenteric, and mesocolic veins, uniting at the root of the mesentery, form the vena portæ, *janitrix*, or *ramalis vena.* It may be considered as two veins joined at their trunks, one of which is ramified in the liver, the other in the viscera of the belly: the former may be called *hepatica superior*, or *minor*; the latter *ventralis inferior*, or *major.* The trunk of the vena portæ hepatica is called its *sinus*, from which five principal branches are divided and spread through the whole substance of the liver, ending apparently in thick, villous folliculi. In these the bile is secreted, and collected by as many vessels of another kind, whose apertures are called *pori biliarii*, which again unite in one common trunk, *ductus hepaticus.* The vena portæ ventralis is situated under the lower or concave side of the liver, between the middle and right extremity of that sinus; from thence it runs down from right to left under the trunk of the hepatic artery, bending behind the beginning of the duodenum, and under the head of the pancreas; its length exceeds three inches. At the head of the pancreas it divides into the meseraica major and minor, and the splenica. See Winslow's Anatomy.

PORTAI'GUILLE. See ACUTENACULUM.

PO'RTIO DU'RA, MOLLIS. See NERVI, and NERVUS AUDITORIUS.

PORTLAND POWDER. A medicine celebrated for the cure of gout, and at one time highly fashionable from the relief which a duke of Portland was supposed to have derived from it. This powder was composed of equal parts of germander, ground pine, gentian, and centaury, and a dram of these powders, well mixed, was to be taken in a glass of wine and water, broth, or tea, every morning fasting, and nothing was to be taken for an hour and half afterwards. This course must be continued for three months; three-fourths of a dram taken for three months longer; then half a dram for six months. After the first year half a dram may be taken every other day only for one year longer. It is recommended also in rheumatism, if not habitual. This is an old remedy, traced by Dr. Clephane from Galen down to almost our own times; but he remarks, that the ancients were cautious in employing it, pointing out the danger of its inducing dropsy, pleurisy, and peripneumony, from its constant use, and from its great danger in particular, if the gout has become habitual. Modern experience has confirmed these cautions, and the medicine is now neglected. See Clephane in the Medical Observations and Inquiries, vol. i. Vide ARTHRITIS.

PORTORA'RIUM, (the door or entrance into the intestines). The DUODENUM or the PYLORUS.

PORTULA'CA, (from *porto, to bring*, and *lac, milk*, because it is supposed to increase its secretion), *andrachne*; *allium Gallicum*, *portulaca oleracea* Lin. Sp. Pl. 638. PURPLE OR GARDEN PURSLANE, a culinary plant; but the seeds and leaves are supposed to be cooling, antiscorbutic, and moderately astringent.

PORTULACA MARITIMA. See HALIMUS.

PO'RUS BILIA'RIUS, (from *πορος, a passage*). The beginning bile duct. See JECUR, and PORTÆ VENA.

PO'RUS O'PTICUS. The point of the retina where the optic nerve enters, which is insensible.

PO'RUS RETICULA'TUS. See ESCHARA.

PO'SCA. Vinegar and water mixed.

POSOLOGIA. (See DOSIS.) The doses of medicines are chiefly learnt from experience; but some guide is necessary for the young practitioner, and for this reason we shall subjoin a posological table, rather as a general guide than one to be implicitly trusted in every case. The minuter regulations of the dose may be more readily understood from the remarks in the particular article, or under the disease for which it is prescribed. For many reasons, though we shall give the highest and the lowest doses, the latter will be rather beneath than above the standard.

Doses distinguish, we have said, medicines from poisons; and, on the other hand, aliment from remedies. Minute attention is, however, requisite in many cases, since it is not improbable that the specific action of remedies depends on their doses. Our experience with mineral waters shows that some medicines, in a small and minutely divided quantity, are more effectual than in larger doses, and in a more concentrated state. We cannot imitate in any other way the tonic effects of iron, or the laxative powers of neutral salts in proportions so small; and it is highly probable that if we ever find the exhibition of factitious airs highly beneficial, it will be in much smaller quantities than have been hitherto exhibited. Injudicious, particularly young, eager, practitioners having once learnt that a remedy has a peculiar power, think that power will be necessarily augmented with the dose; and if they are capable of distinguishing, a faculty not quite so general as may be reasonably supposed, they soon perceive their error. Camphor, for instance, in a dose of five or six grains is a mild sedative, and often a diaphoretic, in fevers; in a dose of twenty grains it frequently produces nausea, increases the heat, and proves highly injurious. Opium in too large doses prevents instead of promoting sleep, and acts rather as a stimulus on the bowels than a narcotic. The laudanum purgans of an old pharmacopœia owes its laxative virtue rather to the dose than the addition which it receives, calculated chiefly to prevent its being rejected by vomiting. In fact, every medicine beyond its proper dose is usually the source of considerable inconvenience, promoting generally increased or irregular action.

TABULA POSOLOGICA.

SIMPLICIA.	Dos minim.	maxima.
Absynthium	gr. x.	ʒss.
Abrotanum	℈i.	ʒi.
Acetum	ʒij.	℥ss.
Acidum vitriolicum	gtt. xv.	xxv.
Aconiti extractum	gr. ss.	gr. ij.
Acetosæ succus	℥ss.	℥ij.
Acorus radix	gr. v.	gr. xv.
Ærugo	gr. $\frac{1}{8}$	gr. ss.
Aloe succotrina	gr. iij.	gr. xv.
Altheæ radix	ʒss.	℥ss.
Allium	gr. xv.	ʒss.
Alumen	gr. v.	℈i.
Ammoniacum	gr. x.	℈i.
Anethi semen	℈i.	ʒi.
Anisi semen	℈i.	ʒi.
Angusturæ cortex	℈ss.	ʒi.
Antimonium præparatum	gr. x.	ʒss.
Arabicum gummi	ʒi.	ʒij.
Aristolochia tenuis	℈i.	ʒi.
Arnica	℈i.	℈ij.
Arsenicum	gr. $\frac{1}{20}$	$\frac{1}{5}$
Arum	gr. x.	ʒss.
Artemisia	ʒi.	ʒij.
Asarum	gr. ij.	gr. v.
Asafœtida	gr. x.	ʒss.
Aurantiorum cortex	℈i.	℈ij.
——— folia	ʒss.	ʒi.
——— succus	℥ss.	℥ij.
Bardanæ radix	℈i.	ʒi.
Balsamum canadense	gtt. xx.	xl.
——— copaibæ	xv.	xxx.
——— gileadense	xv.	xl.
——— Peruvianum	v.	xx.
——— tolutanum	xx.	l.
Benzoin gum	gr. x.	xx.
Bistortæ radix	gr. xv.	ʒi.
Borax	gr. x.	ʒss.
Cajeput oleum	gtt. iij.	xii.
Camphora	gr. v.	℈i.
Canella	gr. vi.	xii.
Cancrorum chelæ vel oculi	℈i.	ʒi.
Cantharides	gr. ss.	iij.
Cardamines flores	℈i.	ʒi.
Cardamomi minoris semen	gr. vi.	℈i.
Carduus benedictus	gr. xv.	ʒi.
Carui semen	℈i.	ʒi.
Caryophylli aromatici	gr. iij.	ʒss.
Cascarilla	gr. x.	xxx.
Casia fistularis	℥ss.	℥ij.
——— lignea	℈i.	ʒi.
Castoreum	gr. v.	℈i.
Centaurii minoris summitates	℈i.	ʒi.
Cepa	℈i.	ʒi.
Cera alba	℈i.	ʒss.
Cerussa acetata	gr. i.	vi.
Chælidonium	℈i.	ʒss.
Chamædrys	℈i.	ʒi.
Chamæpitys	℈i.	ʒi.
Chamemæli flores	gr. x.	ʒss.
Chinæ radix (decoct.)	℥iij.	℥vi.
Cicutæ folia arida & semen	gr. i.	v.
——— succus inspissatus	gr. v.	xv.
Cinaræ succus	ʒss.	℥i.
Cinnabar nativum	gr. x.	℈i.
Cinnamomi cortex	gr. v.	℈i.
Citri cortex	℈i.	ʒss.
Coccinellæ	gr. xv.	℥ss.
Colchicum	gr. i.	gr. v.
Colocynthis	gr. iv.	℈ss.
Columbæ radix	gr. x.	℈ij.
Contrayervæ radix	℈i.	ʒi.
Coriandri semina	℈i.	ʒi.
Cornu cervi	gr. xv.	ʒss.
Cortex Peruvianus	℈i.	ʒi.
Cotula fœtida	gr. v.	gr. xv.
Cremor tartari	℈i.	℈ij.
Creta	℈i.	ʒi.
Crocus	gr. v.	gr. xxv.
Cubebæ	gr. v.	gr. xv.
Cumini semen	gr. x.	ʒss.
Cuprum ammoniacale	gr. ss.	gr. iiij.
——— vitriolatum	gr. i.	gr. v.
Curcuma	℈i.	ʒi.
Cuscuta	gr. x.	℈ij.
Cydoniorum semina	ʒss.	ʒi.
Daucus creticus & sylvestris	℈i.	ʒss.
Dictamnus albus & creticus	℈i.	ʒi.
Digitalis folia arida	gr. i.	gr. v.
Dolichos setæ	gr. v.	gr. x.
Ebuli cortex & semina	℈i.	℈ij.
Elaterium	gr. ss.	gr. iij.
Enula campestris	gr. xv.	℈ij.
Eruca	gr. xv.	ʒss.
Eryngium	℈i.	ʒi.
Erysimi semen & radix	℈i.	ʒi.
Eupatorium (succus recens.)	℥iss.	℥iij.
Eupatorii extractum	℈i.	ʒss.
Ferrum	gr. x.	gr. xxv.
Filix mas. radix	℈i.	ʒi.
Fœniculi dulcis semina	℈i.	℈ij.
Fuligo ligni	℈ss.	℈i.
Fumaria	ʒss.	ʒi.
Galanga	gr. x.	ʒss
Galbanum	gr. x.	℈i.
Gallæ	gr. x.	℈i.
Gutta gamba	gr. ij.	gr. vi.
Genista (in decocto)	℥i.	℥iij.
Genistæ semen	gr. i.	gr. iij.
Gentianæ radix	gr. xv.	ʒss.

	Dos minim.	maxima.
Geoffrœæ radix	gr. v.	gr. xv.
Ginseng	gr. xv.	ʒss.
Glycerrhizæ radix	ʒss.	ʒii.
Granati cortex	℈i.	ʒss.
Gratiola	gr. x.	℈i.
Guaiacum gummi	gr. x.	ʒss.
Hæmatites	gr. x.	ʒss.
Hedera terrestris (in infuso)	℥ij.	℥iv.
Helleborus albus	gr. vi.	gr. xv.
Helleborus niger	gr. v.	x.
Hordeum (in decocto)	℥iij.	℥vi.
Hyoscyami folia arida & semen	gr. i.	gr. iij.
Hypericum. flores	gr. v.	gr. x.
Jalapæ radix	gr. xv.	℈ij.
Ipecacuanha	gr. x.	ʒss.
Iris florida. succus	ʒss.	℥ss.
Juniperi baccæ	gr. x.	℈ij.
Juglans. cortex	ʒi.	ʒij.
Kino. gummi	gr. x.	℈i.
Labdanum. gummi	gr. xv.	ʒss.
Lapathum acutum & aquaticum. succus	℥ij.	℥iv.
Lavendulæ flores	℈i.	ʒi.
Laureola fœmina (mezereon) in decocto	℥ij.	℥iv.
Laurus vulgaris. oleum	gtt. i.	iij.
Lichen islandicus (in decocto)	℥iij.	℥vi.
Lignum campechense. Extractum	gr. x.	ʒss.
Lilium album	℈i.	ʒi.
Limoniorum succus	ʒij.	℥ss.
——— cortex	gr. x.	gr. xxv.
Lini semen (in infuso)	℥iij.	℥vi.
Linum catharticum folia	℈i.	ʒi.
Lobeliæ radix (in decoct.) libra una quotidie		
Macis	gr. x.	ʒss.
Magnesia	gr. x.	℥ss.
Majorana (in infuso)	℥iij.	℥vi.
Malva (in decocto)	ad libitum.	
Manna	℥ss.	℥ij.
Mastich	gr. x.	ʒss.
Matricaria	℈i.	ʒij.
Mechoacanna	℈i.	℈ij.
Mel	ʒij.	℥ss.
Melissa (in infuso)	ad libitum.	
Mentha viridis & piperita	———	———
Mezereon; vide Laureola		
Millefolium	℈i.	℈ij.
Millepedæ	ʒi.	ʒij.
Moschus	gr. v.	℈i.
Myrrha	gr. x.	ʒss.
Nasturtium. succus	℥i.	℥ij.
Nicotiana (in infuso)	ʒss.	ʒij.
Nitrum	gr. v.	℈i.
Nux moschata	gr. v.	gr. xv.
Nymphæa alba. in decocto	ad libitum.	
Oleum olivarum	℥i.	℥ij.

	Dos minim.	maxima.
Oleum ricini	ʒiij.	℥i.
——— terebinthinæ	gtt. x.	gtt. xxv.
Olibanum	gr. x.	℈i.
Opium	gr. i.	gr. iij.
Opoponax	gr. xv.	ʒss.
Origanum in infuso	ad libitum.	
Ostrearum testæ	gr. x.	ʒss.
Pareira brava	℈i.	ʒi.
Petroleum	gtt. x.	gtt. xxx.
Pimpinella saxifraga	℈i.	ʒij.
Pimenta	gr. v	gr. xv.
Piper indicum	gr. v.	gr. xv.
—— nigrum & album	gr. vi.	℈i.
Pistaceæ nuces		
Pix liquida in infuso	℥iv.	℥vi.
Pulsatillæ extractum	gr. v.	℈i.
Quercus cortex	℈i.	ʒi.
Radix Indica Lopeziana	ʒss.	ʒij.
Raphani rusticani radix	℈i.	℈ij.
Rhabarbarum	gr. xv.	ʒi.
Rhaponticum	ʒss.	ʒi.
Rhamni radix	ʒi.	ʒiij.
Rhododendron	gr. v.	gr. x.
Ricini semen	gr. ij.	gr. iij.
Rosa rubra. petala	℈i.	ʒiij.
Rosmarini flores	gr. x.	℈ij.
Rubia tinctorum	℈i.	℈ij.
Rutæ folia	℈ss.	ʒi.
Sabinæ folia	gr. xv.	℈ij.
Sagapenum	gr. x.	℈i.
Sal ammoniacum crudum	℈i.	ʒss.
— cornu cervi	gr. v.	gr. xv.
— marinus	℈ij.	ʒij.
Salix. cortex	ʒss.	ʒij.
Salvia in infuso	ad libitum.	
Sambuci baccarum succus	ʒij	℥ss.
Sanguis draconis	gr. x.	℈ij.
Sapo	℈i.	℥ss.
Santalum rubrum	coloris ergo	
——— album & citrinum	ad libitum.	
Santonici summitates	ʒss.	ʒii.
Sarsæ radix	℈i.	ʒi.
Saxifragæ lignum (in decoct.)	℥iij.	℥vi.
Scammonium	gr. v.	gr. xv.
Scilla recens	gr. v.	ʒss.
—— exciccata	gr. i.	gr. v.
Scordium	ʒss.	ʒi.
Senæ folia	℈i.	ʒi.
Seneka. radix	℈i.	ʒi.
Serpentariæ radix	℈ss.	ʒss.
Serpyllum in decocto	ad libitum.	
Simaruba. cortex	gr. x.	ʒss.
Sinapi. semen	ʒi.	℥ss.
Sium. succus	℥ij. quotidie.	
Solanum dulcamara, in decocto	℥iss.	℥ij.
Spermaceti	℈i.	℈ij.
Stannum	gr. x.	℈ij.
Stæchas		
Stramonium	gr. i.	iij.
Styrax	℈ss.	ʒss.

	Dos minim.	*maxima.*
Succinum	℈i.	ʒi.
Sulphur	℈i.	℈ij.
Tamarindus	℥ss.	℥ii.
Tanacetum	℈ij.	ʒiss.
Taraxaci succus	℥i.	℥iij.
Terebinthina chia	℈i.	ʒi.
Terra japonica	℈i.	ʒss.
Thus	℈ss.	ʒss.
Thymus in infuso	ad libitum.	
Tormentillæ radix	℈i.	ʒss.
Trichomanes in infuso	ad libitum.	
Trifolium palustre, in decocto	℥ij.	℥iv.
Tussilaginis folia, in decocto	ad libitum.	
Valeriana sylvestris	℈i.	ʒi.
Vitriolum album gr. i. pro emetico	gr. v.—x.	
—— cœruleum. See Cuprum vitriolatum.		
—— viride	gr. v,	gr. x.
Ulmi cortex interior in decoct. quotidie. libra una.		
Uva ursi	ʒi.	ʒss.
Winteranus cortex	gr. x.	℈i.
Zedoaria	gr. x.	ʒi.
Zincum ustum	gr. i.	gr. v.
Zinziber	gr. v.	gr. xv.

PRÆPARATA.

	Dos minim.	*maxima.*
Acetum scillæ	gtt. xx.	gtt. xxx.
—— colchicum	gtt. xx.	xxx.
Æther vitriolicus vel nitrosus	gtt. xx.	xl.
Aqua calcis	libra una quotidie.	
Aqua ammoniæ	gtt. xxv.	lx.
—— puræ	gtt. viii.	xvi.
—— acetatæ	ʒij.	ʒvi.
Aquæ simplices	℥i.	℥iij.
—— spirituosæ	ʒi.	ʒiij.
Coagulum aluminosum libra una quotidie.		
Confectio aromatica	ʒss.	ʒij.
Confectio opiata	gr. v.	gr. xxv.
Conservæ	℈i.	ʒi.
Conserva ari	℈i.	℈ij.
—— scillæ	gr. xv.	ʒss.
Decoctum commune pro clystere	℥iv.	℔iss.
—— pectorale	ad libitum.	
Decoctum cinconæ	℥iss.	℥iij.
—— cornu cervi	℔i.	℔ij. quotidie.
—— hellebori albi	ʒi.	ʒij.
—— sarsaparillæ	℔iss. quotidie.	
—— compositum	℔i. quotidie.	
—— ulmi	℔i. quotidie.	
Electarium casiæ	ʒi.	℥i.
—— senæ olim lenitivum	ʒij.	ʒvi.
—— e scammonio	℈i.	ʒij.
Elixir aloes	gtt. xx.	lxxx.
—— vitriolicum acidum	gtt. x.	xl.
Essentia limonum	gtt. i.	gtt. v.
Extractum aconiti	gr. i.	v.
—— cacuminis genistæ	gr. x.	xxv.
Extractum cicutæ	gr. v.	xv.
—— cinconæ	℈i.	℈ij.
—— corticis elentheriæ	℈i.	ʒss.
—— colocynthidis compositum	gr. iij.	xv.
—— gentianæ	℈i.	ʒss.
—— glycerhizæ	ad libitum.	
—— hellebori nigri	gr. v.	℈i.
—— hæmatoxyli	gr. xv.	ʒss.
—— hyoscyami	gr. i.	vi.
—— jalapii	gr. v.	xv.
—— papaveris albi	gr. v.	xv.
—— rutæ	gr. x.	℈i.
—— sabinæ	gr. x.	℈i.
Infusum gentianæ compositum	℥i.	℥ij.
—— senæ	℥ij.	℥iij.
—— senæ tartarizatum	℥iss.	℥iiss.
—— rosæ	℥iss.	℥iij.
Julepum è camphora	℥iss.	℥ij.
—— creta	℥iss.	℥iij.
Lac ammoniacum	ʒi.	ʒiij.
Mel acetatum	ad libitum.	
Mel rosæ	ad libitum.	
—— scillæ	ʒss.	ʒi.
Mercurius dulcis sublimatus	gr. i.	x.
—— muriatus	gr. ¼	gr. ij.
—— vitriolatus	gr. ij.	gr. x.
Oleum amygdalæ	℥i.	℥ij.
—— lini	℥i.	℥ij.
—— jecoris aselli	℥i.	℥ii.
—— ricini	ʒiij.	℥ij.
—— anisi	gtt. v.	gtt. xx.
—— carui	gtt. iij.	gtt. vi.
—— cinnamomi	gtt. i.	gtt. iij.
—— juniperi	gtt. x.	gtt. xxv.
—— lavendulæ	gtt. ij.	gtt. vi.
—— menthæ piperitidis	gtt. v.	gtt. xv.
—— origani	gtt. v.	gtt. x.
—— pulegii	gtt. vi.	gtt. xii.
—— roris marini	gtt. iij.	gtt. viii.
—— sassafræ	gtt. vi.	gtt. xii.
—— terebinthinæ	gtt. x.	gtt. xxx.
Oxymel colchici	℈ii.	ʒi.
—— scillitici	ʒi.	ʒij.
Pillulæ aromaticæ	gr. xv.	ʒss.
—— aloes compositæ	gr. vii.	℈i.
—— aloes cum myrrha	gr. xv.	gr. xxv.
—— galbani compositæ	℈ss.	℈i.
—— hydrargyri	gr. v.	gr. xv.
—— opii	gr. iv.	x.
—— scillæ	gr. x.	℈i.
Pulvis aloes cum canella	gr. v.	gr. x.
—— guaiaco	gr. viii.	xv.
—— ferro	gr. x.	℈i.
—— aromaticus	gr. x.	gr. xxv.
—— asari compositus	gr. v.	viii.
—— cretæ compositus	gr. x.	xxv.
—— cum opio	gr. v.	gr. xv.
—— chelarum cancri c.	gr. x.	℈i.

	Dos minim.	maxima.
Pulvis contrayervæ c.	gr. x.	ʒss.
—— ipecacuanhæ c.	gr. x.	ʒss.
—— myrrhæ c.	℈i.	ʒi.
—— opiatus	gr. x.	℈i.
—— scammonii c.	gr. v.	xii.
———— cum aloe	gr. v.	℈i.
———— calomel	gr. v.	xv.
—— senæ c.	ʒss.	ʒi.
—— tragacanthæ c.	gr. xv.	ʒss.
Sal catharticus glauberi	ʒiij.	℥iss.
———— amarus	ʒiij.	℥iss.
— cornu cervi	gr. v.	xv.
— diureticus	℈i.	℈ij.
— martis	gr. v.	gr. xv.
— succini	gr. viii.	ʒss.
— tartari (kali vel soda)	gr. vi.	℈i.
Spiritus ammoniæ compositus	gtt. x.	xxx.
———— succinatus	gtt. viii.	xxv.
———— fœtidus	gtt. xx.	xl.
—— anisi c.	ʒss.	℥ij.
—— carui c.	——	——
—— cinnamomi	——	——
—— juniperi	——	——
—— lavendulæ	gtt. xx.	lx.
———— c.	gtt. xv.	xl.
—— menthæ piperitidis	℥ss.	℥ij.
———— sativæ	——	——
—— nuclei fructus myristicæ	ʒij.	ʒvi.
—— pimento	ʒij.	℥ss.
—— pulegii	ʒiij.	ʒvi.
—— raphani c.	ʒiij.	ʒvi.
—— rorismarini	gtt. xxx.	ʒij.
Stannum, pulvis	gr. xv.	℈ij.
Succus graminis	℥i.	℥iij.
Succi scorbutici	℥i.	℥iij.
Sulphur auratum antimonii	gr. un	gr. iij.
Syrupus papaveris albi	ʒi.	℥ij.
———— erratici	℥ij.	℥iij.
—— rosarum solutivus	ʒij.	℥ij.
—— scilliticus	ʒi.	℥i.
—— spinæ cervinæ	ʒiij.	℥iss.
—— tolutanus	ʒiij.	℥ij.
Tartarum emeticum	gr. ¼.	gr. v.

	Dos minim.	maxima.
Tinctura aloes	℥i.	℥iss.
———— c.	ʒij.	ʒvi.
—— assæ fœtidæ	ʒi.	ʒiij.
—— aurantii corticis	ʒij.	ʒvi.
—— balsami peruviani	gtt. xx.	xxxv.
—— balsami tolutani	ʒij.	℥ss.
—— cantharidis	gtt. xv.	xxx.
—— cardamomi	ʒij.	℥ss.
———— composita	ʒi.	ʒiij.
—— cascarillæ	ʒij.	℥ss.
—— castorei	ʒij.	℥ss.
—— catechu	ʒij.	℥ss.
—— chinconæ	ʒij.	℥ss.
———— ammoniata	ʒi.	ʒiij.
———— composita	ʒiij.	ʒvi.
—— cinnamomi	ʒiij.	ʒvi.
———— composita	ʒij.	℥ss.
—— columbæ	ʒiij.	ʒvi.
—— ferri ammoniacalis	gtt. xv.	xxx.
———— muriati	gtt. xx.	xl.
—— galbani	ʒij.	℥ss.
—— gentianæ c.	ʒij.	℥ss.
—— guaiaci	ʒiij.	ʒvi.
—— hellebori nigri	ʒi.	ʒiij.
—— jalapii	ʒij.	℥ss.
—— myrrhæ	ʒij.	℥ss.
—— opii	gtt. xx.	xl.
———— camphorata	ʒiij.	ʒvi.
—— rhabarbari	ʒiij.	ʒvi.
———— c.	℥ss.	℥ij.
—— sabinæ c.	gtt. x.	gtt. xxx.
—— scillæ	gtt. xx.	xl.
—— senæ	ʒvi.	℥iss.
—— serpentariæ	ʒi.	ʒiij.
—— valerianæ	ʒij.	℥ss.
———— ammoniata	ʒss.	ʒiij.
—— zinziberis	ʒi.	ʒij.
Vinum aloes	ʒvi.	℥ij.
—— antimonii	gtt. xx.	xl.
—— antimonii tartarizat.	gtt. xv.	xl.
—— ferri	ʒi.	℥ss.
—— ipecacuanhæ	℥i.	℥iiss.
—— rhabarbari	℥ss.	℥ij.

In this estimate of the doses of medicines, we cannot expect to meet the sentiments of every practitioner, nor perhaps always to be minutely and accurately correct. As we have already remarked, this table is intended rather as hints to conduct the practitioner in his own observations than as a guide to be blindly followed; for many are the varieties which will result from age and sex; from temperament and idiosyncracy. They are, indeed, so numerous that we engaged in the task with hesitation and reluctance; nor are we certain that we may not have done more injury by assisting empiricism than service to the younger practitioner.

In the table of preparations we have followed the London pharmacopœia almost exclusively; not that we confine to it exclusive excellence, for both the Dublin and Edinburgh pharmacopœias merit peculiar attention. We soon found, however, that to include these would not only extend the catalogue beyond its proper limits, but by names similar, yet different, by formulæ varying often rather in appearance than in their nature, we should require endless explanations to guard against confusion. We gave up the attempt the more readily, as in Dr. Duncan's very valuable dispensatory they may be readily compared. In the tables annexed to that work we find a comparative view of the doses of the more important medicines, according to each dispensatory, with which we shall conclude the present article.

Tables, showing the proportion of antimony, opium, and quicksilver, contained in some compound medicines.

Tartrite of antimony.—Wine of tartrite of antimony contains two grains of tartrite of antimony, or tartar-emetic, in the ounce. Ed.

Opium.—Opiate confection contains one grain of opium in thirty-six grains. Lond.

Opiate or thebaic electuary contains in each dram about a grain and a half of opium. Edin.

Electuary of catechu, or japonic confection, contains

in each ounce about two grains and a half of opium; for one grain of opium is contained in one hundred and ninety-three grains. Ed.

Compound powder of chalk with opium contains one grain of opium in about forty-three grains. Lond.

Compound powder of ipecacuan contains one grain of opium in ten grains. Lond.

Powder of ipecacuan and opium contains six grains of opium in each drachm, or one grain in ten. Ed.

Opiate powder contains one grain of opium in ten. Lond.

Pills of opium contain one grain of opium in five. Lond.

Opiate or thebaic pills contain six grains of opium in each drachm, or five grains contains half a grain of opium. Ed.

Tincture of opium or liquid laudanum is made with two scruples of opium in each ounce of the liquid, or with five grains in each drachm. But a dram of the tincture appears, by evaporation, to contain about three grains and a half of opium. Ed.

Ammoniated tincture of opium, or paregoric elixir, is made with about eight grains in each ounce of the liquid, or with about one grain in the drachm. Ed.

Tincture of soap and opium, formerly called opiate liniment, anodyne balsam, is made with one scruple of opium in each ounce of the liquid. Ed.

Troches of liquorice with opium, contain about one grain of opium in each drachm. Ed.

Quicksilver.—Quicksilver pills contain five grains of quicksilver in each drachm. Each pill contains one grain of quicksilver. Ed.

Quicksilver pills contain four grains of quicksilver in twelve grains. Lond.

Quicksilver ointment contains twelve grains of quicksilver in each drachm; made with double quicksilver, each drachm contains twenty-four grains. Ed.

Stronger quicksilver ointment contains one drachm of quicksilver in two drachms. Lond.

Weaker quicksilver ointment contains one drachm of quicksilver in six drachms.

Quicksilver plaster contains about sixteen grains of quicksilver in each drachm. Ed.

Plaster of litharge with quicksilver contains about one ounce of quicksilver in five ounces. Lond.

Plaster of ammoniac with quicksilver contains about one ounce of quicksilver in five ounces. Lond.

Powder of scammony with calomel contains one grain of calomel in four grains. Lond.

Ointment of nitrated quicksilver contains twelve grains of nitrated quicksilver in one drachm. Lond.

Stronger ointment of nitrate of quicksilver contains in each drachm four grains of quicksilver, and eight of nitrous acid. Ed.

Milder ointment of nitrate of quicksilver contains in each scruple half a grain of quicksilver, and one grain of nitrous acid. Ed.

Ointment of white calx of quicksilver contains in each drachm about four grains and a half of the calx. Lond.

OR,

One grain of tartrite of antimony is contained in

Wine of tartrite of antimony.	Ed.	grs. 240
Wine of antimoniated tartar.	Dub.	120
Wine of tartarised antimony.	Lond.	120
Wine of antimony.	Lond.	uncertain.

One grain of precipitated sulphuret of antimony is contained in

Compound pills of antimony.	Dub.	grs. 2.7

One grain of opium is contained in

Opiate confection.	Lond.	grs. 36
Opiate electuary.	Ed.	43
Electuary of catechu.	Ed.	193
Compound electuary of catechu.	Dub.	199
Troches of liquorice with opium.	Ed.	75
Compound troches of liquorice.	Dub.	60
Pills of opium.	Lond.	5
Opiate pills.	Ed.	10
Opiate powder.	Lond.	10
Compound powder of chalk with opium.	Lond.	43
Compound powder of ipecacuan.	Lond. Dub.	10
Powder of ipecacuan and opium.	Ed.	10
Tincture of opium.	Ed. Lond. Dub.	12
Camphorated tincture of opium.	Lond.	244
Ditto ditto	Dub.	196
Ammoniated tincture of opium.	Ed.	68
Tincture of soap and opium.	Ed.	31.5

One grain of quicksilver is contained in

Quicksilver pills.	Lond.	grs. 3
Ditto	Dub.	2.5
Ditto	Ed.	4
Stronger quicksilver ointment.	Lond. Dub.	2
Weaker quicksilver ointment.	Lond. Dub.	6
Quicksilver ointment.	Ed.	5
Quicksilver plaster.	Ed.	5.5
Litharge plaster with quicksilver.	Lond.	5
Ammoniac plaster with quicksilver.	Lond.	5

One grain of calomel is contained in

Powder of scammony with calomel.	Lond.	grs. 4
Compound antimonial pills.	Dub.	2.7

One grain of the grey oxide of quicksilver is contained in

Ointment of the grey oxide of quicksilver.	Ed.	grs. 4

One grain of the red oxide of quicksilver is contained in

Ointment of red oxide of quicksilver.	Ed.	grs. 9

One grain of submuriate of quicksilver and ammonia is contained in

Ointment of white calx of quicksilver.	Lond.	grs. 13

One grain of nitrate of mercury is contained in

Stronger ointment of nitrate of mercury.	Ed.	grs. 5
Ointment of nitrated quicksilver.	Lond. Dub.	5
Milder ointment of nitrate of quicksilver.	Ed.	13

In many instances these proportions are only to be considered as approximations to the truth, as they are calculated from the quantities of the ingredients taken to form the preparation, not from the quantities which exist in it after it is formed. The nitrate of mercury, for example, in the different ointments into which it enters, is estimated as equal to the whole quantity of mercury and nitrous acid employed to form it, although from the very nature of the preparation it cannot be so much. In the solutions of opium, the opium is estimated as equal to the whole quantity employed, although not above two-thirds of it be dissolved. Lastly, no allowance is made for the loss by evaporation; and hence, notwithstanding the difference by calculation, the Edinburgh troches of liquorice with opium contain probably as much opium as those of Dublin; for the former, being made with syrup, will lose more in drying than the latter, which are made with the extract of liquorice.

POSSE'TUM. Posset. Milk curdled with wine, treacle, or cyder, by foreigners reckoned peculiar to the English. The serum of a posset, called *posset-drink*, differs from the whey of milk by the addition of the fluid employed to curdle it.

POSTBRACHIA'LE, (from *post, after*, and *brachium, the arm*). See Metacarpus.

POSTE'RIOR ANNULARIS; an external interosseous muscle of the hand which draws the ring finger inwards.

Poste'rior Indicus; a similar muscle, which extends the fore-finger and draws it outward.

Poste'rior medii, extends the middle finger and draws it outward.

Poste'rior mu'sculus au'ris.. See Abductor auris.

POSTHE, (*quasi* πρoσθε, from προτιθημι, *to place before*). See Præputium.

POSTPOSITIO, (from *post*, and *pono, to place*). When the paroxysm of a fever comes on later than is expected, the paroxysm is said to be postponed; when it begins sooner, to be anticipated.

POTA'SSA. We have in the articles Alkali and Chemia, q. v. given every information apparently necessary on this subject; yet, as in some cases the kali is required to be peculiarly pure, we mean chiefly when employed as a reagent in detecting poisonous impregnations, it may be perhaps useful to describe shortly the methods of preparing it without any remaining impurity. Two have been employed; and we shall first mention that of Bouillon la Grange, from the Annales de Chymie.

To water, heated nearly to boiling, some highly caustic lime must be added, which will bring on ebullition; and when slaked an equal quantity of potash of commerce. The water must be in such a quantity as will bring the whole to a thick liquid. In boxes, whose bottom is covered with well-washed river sand, and then with a stratum of finer sand, on a cloth sprinkled with wood ashes, this mixture must be cautiously poured, and covered very gently with water, which, passing through the cloth and sand, is conveyed into vessels by a hole in the bottom of the box. The fluid in the vessels must be guarded from atmospheric air, and water added till its saline taste begins to grow weak. The superfluous fluid must be carried off by a quick ebullition, and any impurity will then separate. To obtain it perfectly pure it must be evaporated to dryness, and dissolved in alcohol, which takes up the pure potash only, leaving whatever salt contains any carbonic acid.

Lowitz advises the lixivium of potash, freed from the carbonic acid in the usual manner, to be evaporated to a thin pellicle. After cooling, the foreign salt is to be separated, and the evaporation continued in an iron pot, during which the carbonate of potash rises in a pellicle, which must be constantly separated. When no more pellicles are formed, and it ceases to boil, it must be taken from the fire and suffered to cool, continually stirring it till cold. It must then be dissolved in double the quantity of cold water, the solution filtered, and evaporated in a glass retort till it begins to deposit regular crystals. After the formation of a sufficient quantity of these, the brown fluid must be decanted, and the drained crystals redissolved in the same quantity of water. The decanted fluid become clear by subsiding, must be again decanted, and crystalised. These operations are repeated till the crystals afford, with the least quantity of water, solutions perfectly limpid.

We know that alkalis are, in general, the product of fire; but in many cases they exist formally in the plant, though often united with an acid in the form of a neutral. Recent discoveries however, which we shall soon notice (see Sal and Soda), have lately opened an ample field for speculation. See Clavellati cineres.

POTENTI'LLA RE'PTANS, (*à potentia*, from its efficacy). See Quinquefolium.

POTE'RIUM, a cup, (from the shape of its flower). *Sanguisorba.* See Pimpinella.

POTIO, (from *poto, to drink*). A potion: a liquid form of medicine, to be taken at once, a term usually confined to laxatives.

POUPA'RTII LIGAME'NTUM. See Fallopii ligamentum.

PRÆCIPITA'NTIA, (from *præcipito, to cast down*). Medicines which moderate the motion and heat of the blood, by *precipitating*, as was supposed, its acid.

PRÆCIPITA'TIO. Precipitation; the separation of substances dissolved in a fluid by the addition of a third body, by the abstraction of caloric, or of the quantity of the menstruum. The first is, however, strictly speaking, true chemical precipitation, and it takes place when the added substance combines with the menstruum, rendering it no longer able to hold the first in solution; or where the third body unites with that in solution forming a substance no longer soluble. The substance separated is called the *precipitate* if it sink, *cream* if it swim. Some caution is necessary in these experiments, for in some cases the precipitate is again soluble; but this depends on chemical affinities and the minuter doctrines of chemistry. See Chemia.

When the matter to be precipitated falls to the bottom of the vessel, the fluid is poured off, or filtered, and what remains behind is to be dried like levigated powders.

PRÆCO'CIA, (from their early ripening). See Armeniaca mala.

PRÆCO'RDIA, (*præ*, and *cor, the heart*), a general appellation of the bowels, generally of the contents of the chest. Fernelius, lib. iv. de Febribus, comprehends under this term the region above the stomach, the diaphragm, the liver and biliary ducts, the pancreas, the stomach, particularly its upper orifice. This name has been also given to the metatarsus.

PRÆPARA'NTIA MEDICAME'NTA are medicines supposed to prepare the morbid humours for separation, and their consequent discharge.

Præpara'ntia va'sa are the vessels of the spermatic cord, in which it was supposed that the seed was prepared. See Spermatica chorda.

PRÆPARA'TA VE'NA. See Frontalis vena.

PRÆPU'TIUM, (from *præputo, to lop off before*). The prepuce or foreskin, *epigogion, posthe.* When this is wanting the person is called *leipodermos*, when lost, *lipodermos*. See Penis.

PRÆSA'GIA, (from *præ, before*, and *sagio, to perceive*). Presages. Fred. Hoffmann observes, that three things are requisite to a right presage, viz. 1st, that from due observation we be able to trace and investigate the origin and causes of disorders in order to

oppose them in the beginning by proper remedies, or give salutary directions. 2dly, That we accurately know the various natures of diseases, and their differences in differient constitutions, that we may be better able to give medicines which shall remove them. 3d. That we be able to form a right judgment of the operation of medicines, and the event of disorders. See PROGNOSTICA.

PRÆSENTA'TIO, (from *præsento, to offer*). In midwifery it is the manner in which a child offers itself in its passage into the world; and the different presentations are denominated according to that part of the child which is perceived at the mouth of the womb, when a woman begins to be in labour.

In preternatural presentations the membranes protrude, for the most part, in a lengthened form; and when the pain declines no part of the child can be perceived, but the membranes only, as in the beginning of labour; after some time, from the quantity of water, the membranes have a round form; but they have not the usual effect of dilating the os tincæ. If the head presents, it is distinguished by bringing the finger round so as to take in a large portion of it: we then feel an uniform hard substance, and often discover a suture. When a shoulder or a hip presents, they have not that uniform hard feel which is observed when the head offers. If the back presents, the vertebræ are felt; if the belly, the funis umbilicalis discovers it. The breast presenting is known by feeling the ribs; the breech by the private parts, and the discharge of the meconium at each pain; the hand, or foot, by the absence or presence of the heel. See PARTURITIO.

PRA'NDIUM, (from *prandeo, to dine*). *Ariston.* DINNER.

PRA'SIUM A'LBUM, (from πρασια, *a square border*). See MARRUBIUM ALBUM.

PREGNANCY. When from the previous connection the fœtus is animated (see GENERATIO), it soon escapes into the uterus, if the Fallopian tubes are not obstructed. Its minuteness at that period prevents us from determining with precision the time of its passage; but as it is probably conveyed to the tube at the moment of animation, since an extraordinary action is required to raise the fimbriæ, it probably is not long delayed in its progress. Every part of the uterus is apparently adapted for its attachment, since wherever the placenta is fixed, we there find its maternal part; the cotyledons of ruminant animals. The early appearances are those only of a slight inflammation, the constant concomitant of increased action, or of evolution, with usually a small proportion of mucus; and for sometime it is only a small body, covered apparently with a light down. See FŒTUS.

The mother for a time feels no alteration, and indeed so slight are often the early symptoms, that a woman sometimes does not know that she has conceived till she feels the motion of the child. More frequently, however, symptoms of general irritability and peculiar sensibility come on early. The fancies are singular, the appetite capricious, the features sharp, the complexion pale, but clear; till about six weeks after impregnation, a sickness of the stomach comes on, chiefly in the morning, and most commonly on rising from bed. After the stomach has been freely discharged, some women are frequently easy and cheerful through the whole day; but many suffer from constant sickness for four months; some during the whole period. We have known women who have never been able to eat or drink without the bason near, in which it was constantly returned, seemingly unaltered in appearance and quantity, and have yet borne healthy children. In most instances, however, the sickness is confined to the first four or five months, though the capricious appetite frequently continues during the whole time.

In the early period, the abdomen is said to be somewhat flatter than usual: it is at least not fuller; but between the fourth and fifth month the uterus rises above the pubes, like a round ball, occasionally on the right or left of the symphysis, and gradually extends, till at the ninth month it reaches the scrobiculus cordis, protruding in its progress the navel.

At a very early period, often within the first two or three weeks, the breasts grow fuller, and pricking pains are felt in them; the areola round the nipple extends, and is brown, often verging to a blackish hue, which continues to enlarge till the moment of delivery. About the fifth or sixth month, sometimes earlier, a little whitish serum can be pressed from them, which at last approaches more nearly the appearance of milk. The catamenia, as is well known, are very commonly suppressed during pregnancy; but in some women they flow with their usual regularity through the whole period of gestation. In delicate females, who use little exercise, it is not uncommon to have one discharge regular in time, but not in quantity or duration, after impregnation; and this slight appearance will recur at irregular intervals during the whole time. If not attended with pain, or flowing copiously, we have never found it dangerous, or threatening abortion.

The most unequivocal symptom occurs nearly between the fourth and fifth month, styled the *quickening*, when the motion of the child is first perceived. This sometimes induces a little faintness, which soon passes away; but the commencement is occasionally so slight as to be unobserved. It first resembles a flatulency; and flatus has sometimes deceived even the most experienced matrons; but it soon becomes more distinct, with a somewhat more rapid motion, resembling the fluttering of a bird; and at last it affords so strong a resistance as to raise the clothes, and be obvious to the eye at some distance. The period of quickening is pretty accurately about the twentieth week, and will generally correct any erroneous reckoning from the disappearance of the menses.

These symptoms arise from the peculiar state of the uterus, with which the stomach, the mammæ, and the appetite sympathise. The final cause of the vomiting it is not easy to assign. We have considered it, in another place, as useful to guard against plethora in the earlier months; and it is certain, that the children of those women who have been scarcely free from vomiting, have not been extenuated, or apparently deprived of their proper nourishment.

To determine whether impregnation has taken place requires often very minute attention; and the most experienced practitioners are occasionally deceived. If a young married woman wishes for children, she will catch at every probable appearance, and magnify every accidental symptom. It is necessary to watch the changes already detailed, and to pursue them in their

progress. We have mentioned the principal circumstances in different articles, particularly under ASCITES; and *suspected pregnancy*, in the article MEDICINA FORENSIS. After three or four months the situation may be more clearly ascertained by the TOUCH; and in the sixth or seventh month pretty certainly determined. We shall shortly describe the successive changes in the cervix uteri and os tincæ during pregnancy, to enable the younger practitioner to determine the question by this means; and we shall copy the very comprehensive and judicious description of Dr. Hamilton, in his "Outlines of Midwifery."

"For the first three months the os tincæ feels smooth and even, and its orifice is nearly as small as in the unimpregnated state. When any difference can be perceived, it consists in the increased length of the projecting tubercle of the uterus, and the shortening of the vagina, from the descent of the fundus uteri through the pelvis. This change in the position of the uterus, by which the projecting tubercle appears to be lengthened, and the vagina proportionally shortened, chiefly happens from the third to the fifth month. From this period the cervix begins to stretch, and be distended, first in the upper part; and then the os tincæ begins also to suffer considerable changes in its figure and appearance. The tubercle shortens, and the orifice expands; but during the whole term of gestation the mouth of the uterus is strongly sealed up with a ropy mucus, which lines it and the cervix, and begins to be discharged on the approach of labour. In the last weeks, when the cervix uteri is completely distended, the uterine orifice begins to form an elliptical tube instead of a fissure; and sometimes, especially when the parietes of the abdomen are relaxed by repeated pregnancies, disappears entirely, and is without the reach of the finger in touching. Hence the os uteri is not placed in the direction of the axis of the womb, as has been generally supposed."

To this we can only add, that about the fifth or sixth months, the weight of the uterus is sensible on raising it by pressure on the os tincæ or cervix, and that in the later months the distended cervix is so thin that the head of the child, when it presents, can be often felt through it.

The DISEASES OF EARLY PREGNANCY are numerous and troublesome, arising chiefly from the excess of irritability just mentioned, and the plethora, which usually occurs in the early months. We must consider them in an inverted order.

Plethora. The diseases arising from plethora are chiefly *flushing of the face, fulness, pain of the loins, load in the head, vertigo*, and *drowsiness*. The women whose stomachs are most irritable suffer less from these complaints; but, when they come on, they require particular attention. It has been usual to direct small bleedings, and such pregnant women bear with ease, and even advantage. Yet the habit is soon established, and they become necessary in future pregnancies, when the plethora is less common. We have endeavoured, therefore, to avoid them, and we think we have succeeded by cool, free air, by gentle laxatives, and a moderately cooling diet; above all, by perfect rest and tranquillity both of mind and body. The swelling and pains of the breasts arise in part from this cause. They should not be confined by ligatures and lacing; nor must it be forgotten, that, in the present apparently free and easy costume of the ancient Grecians, they suffer as much by pressure from the sides and below as they formerly did by the iron stays. Every thing must now project forward, but it is not on this account a more easy dress when the breasts are swollen.

The greater number of diseases arises, however, from *irritability*; and among these we may reckon the distressing *stomach complaints*. The morning sickness is one of the most painful feelings attendant on this state; and it is one of these which medicine most commonly fails in relieving. A cup of camomile or peppermint tea, taken on first waking, and suffering the patient to lie still for an hour, will sometimes alleviate the distressing sickness; but should it recur during the day, these means will scarcely succeed any farther. Slight emetics will occasionally relieve, but as often fail. Magnesia and columbo root, sometimes with the kali purum, sometimes with the ammonia pura, occasionally with the aromatic tincture, or a slight proportion of the tinctura opii, will be for a time useful; but the sickness will not wholly yield till the uterus begins to rise above the pelvis and freely expand. Dr. Vaughan, in the London Medical Journal, employed nourishing clysters, with anodyne liniments, to the pit of the stomach. We have already observed that the intention of nature in exciting vomiting seems to be the prevention of plethora, which is often far more dangerous than the increased action of the stomach. If this be true, it will prevent the introduction of nutriment: and the apparent anxiety of nature in every instance to preserve life, particularly in the reproduction of the species, would lead us to be cautious of interfering in an object where her own plans are usually so beneficial. We may alleviate troublesome symptoms, but should not strongly interfere. It is peculiarly rare, we believe it has scarcely ever happened without the suspicion of some fixed organic complaint, that a woman has sunk or miscarred from inanition.

Cardialgia and *diarrhœa* are troublesome symptoms, but not dangerous. They are generally relieved by magnesia, the compound powder of chalk, with occasionally a few drops of the aqua ammoniæ puræ, sometimes with the tincture of opium. They arise from irregularity in the digestive process, in consequence of the increased irritability of the stomach, and disappear usually about the fourth month. They are increased by acescents rather than by acids, for vinegar can be often taken with less inconvenience than pastry.

Faintings and *hysteric affections* are the consequences of peculiar irritability of the system. Low spirits are among the early symptoms, and almost every pregnant woman thinks her state a fatal one; but while such is her language, her conduct contradicts it, and indeed, in the intervals of sickness and pain, the spirits of a pregnant woman are often free and cheerful. Despondency is only in her words. The common hysteric remedies, keeping the bowels free, above all a little variety of scene, and the cheerful conversation of a sensible woman, who has already passed the same ordeal repeatedly with success, will lessen every unpleasant symptom of this kind.

The DISEASES OF ADVANCED PREGNANCY are often more serious. They arise from the pressure or the change of position of the gravid uterus; and though often only inconvenient, are sometimes dangerous.

The diseases which arise from pressure are various,

swellings of the veins of the leg, œdema of the lower extremities, &c. costiveness, piles, and dyspnœa. These are relieved by the common remedies; but while the cause remains cannot be cured. In weak habits the œdema sometimes arises to general dropsy, which continues after parturition.

More serious diseases from the pressure of the uterus are various spasmodic complaints, rising from slight cramps in the legs to violent *epileptic paroxysms*. The immediate causes are irritation from the pressure on the sacro sciatic nerves, communicated to the brain when the convulsions are more general. Sometimes they seem to arise from the motion of the fœtus, and are more common in a first pregnancy than at any future one. The slight spasms are alleviated by opium; but the epileptic fits are highly dangerous, and in a large proportion of cases are fatal. We have already mentioned this disease, vide CONVULSIONS; but must now more fully enlarge on it.

Puerperal convulsions are sometimes relieved by copious bleedings; but the event often leads us to regret the loss of that strength which the patient is thus deprived of. They seldom occur with any violence till about the seventh month; but, in general, attack near the full period. It is first necessary to empty the rectum by an active clyster, which will also, in many cases, bring on labour. The next step is to give a large dose of opium, and inject also no inconsiderable one into the rectum. Forty drops of the tincture of opium may be given, and repeated every hour, or oftener if the fits are violent; and at least two drams should be given in a clyster. If the fits produce any tendency to labour, the relaxation occasioned by the opium will produce some yielding in the os tincæ; and when it is open, though very slightly, labour may be expedited by introducing the finger, and enlarging it, till we can rupture the membranes. In general, during a pain, the convulsions remit, which is a strong argument in favour of expediting the labour. If the os tincæ does not yield, some practitioners have attempted its dilatation by force; a practice by no means to be recommended, though we have not seen it followed, as has been predicted, by inflammation of the uterus. In general it is safer to give large doses of opium till the relaxation which it occasions, joined with the debility naturally produced by the repetition of the paroxysms, brings on labour. We must be cautious, however, not to carry our expectations of labour coming on too far, as the woman may die undelivered, a circumstance peculiarly dreaded by females; and in emergencies the forcible dilatation of the os tincæ, however dangerous, is the safer alternative. By this plan more than half of those entrusted to our care have recovered, while the usual calculations of the successful cases offers a considerably less proportion. Before the seventh month, however, we must trust to the opiates and the operations of nature.

Other plans have been recommended. Dr. Denman advises dashing cold water in the face; Dr. Hamilton the digitalis; and other practitioners large doses of camphor given by the mouth and by clysters. The former we have found useless; the digitalis we have not had an opportunity of trying; and we should apprehend that there was not sufficient time for its operation, unless the dose was hurried on with a rapidity that would be dangerous. The camphor, recommended in the Memoires de Medicine, we have tried; but in each case it brought on an alarming stupor, which has prevented us from repeating it, though given in a far less dose than was recommended.

Sometimes the convulsions follow delivery, and generally arise from fright or from terror. This is hardly a part of the present subject, but it is so closely connected that we could not avoid mentioning it, and it will not detain us, since the usual remedies just mentioned will relieve the complaint, if it admit of relief.

In general these convulsions are not so frequently fatal as those which precede labour, though always dangerous.

Ischuria and *frequent micturition* are complaints which depend partly on pressure, and in part on irritation. Either is an inconvenience which may be alleviated by a slight opiate; but frequent inclination to make water produces considerable irritation, if not gratified; and the pregnant woman should avoid crowded rooms, long journeys, and every situation where this desire cannot be quickly indulged. Should the bladder be greatly distended, the urine will be permanently retained, and the worst consequences follow, particularly the retroversion of the uterus, which, but for this connection, should have been noticed more early.

Retroversion of the uterus usually occurs about the latter end of the third month, when the womb, if prevented by distension of the urinary bladder, or violent fatigue, from rising above the pelvis, falls backward between the vagina and rectum, pulling the os tincæ backward and upward. Obstinate costiveness has been accused of producing this change in the situation of the womb, but will more probably prevent it, for the posterior part of the pelvis must be spacious and empty to admit of the uterus falling backwards. In this case a tumour is felt in the perinæum, bearing down like a child's head, with forcing pains, tenesmus, a retention of the stools and urine. The finger passed into the vagina is soon stopped without reaching the os tincæ; and in the rectum a round hard tumour may be felt. In this situation the uterus enlarges, and increases all the symptoms. The forcing pains are violent; the retention of the urine and fæces obstinate; the load and oppression are communicated to the brain; and coma, or delirium, with fever, come on, often accompanied by convulsions.

The reduction of the tumour affords the only prospect of relief. We must endeavour then, for this purpose, to evacuate the bladder and rectum; but the weight of the uterus draws back the meatus urinarius, and the bulk prevents the passage of clysters or fæces. A finger introduced into the vagina, and another into the rectum, will assist the reduction, while the patient on her hands and knees, bent forward, contributes by her posture to facilitate the return of the uterus. Perhaps if laying on her back, with her nates raised to half a right angle, the reduction might be still more easy. Dr. Cheston, we find, in the second volume of the Medical Communications, succeeded in a case of this kind, by puncturing the bladder at the pubes; and a more desperate proposal has been made to puncture the uterus through the rectum to procure abortion. The attempt is, however, truly absurd, for the puncture of the uterus would not restore the situation of the womb;

and if abortion could thus be procured, the fœtus must pass through the wound.

The caprices of pregnant women are numerous and troublesome. They are not wholly fanciful, for the most firm and sensible women, who conceal them, acknowledge the pain and difficulty they feel by the effort. On the contrary they increase by indulgence, and often become injurious. In speaking of the peculiarities of the FŒTUS, q. v., we showed, at some length, that a change in its structure or appearance from any mental affection of the mother was highly improbable; but to deny any reasonable gratification often produces uneasiness and irritation both of mind and body, with loss of sleep, and an increase of the hysteric symptoms. A man will also commiserate the state to which the most lovely and tender part of the creation is thus reduced, and be led by every kindness and attention to alleviate it. Yet the same affection will set limits to indulgence; for the craving truly grows by what it feeds on, and at last may require impossibilities. The refusal will then be doubly distressing. To grant every reasonable request, to sooth, to persuade, and to expostulate, when these requests verge to what is fanciful, what is not easily practicable, or what may become injurious, will gradually place these fancies more under the controul of reason, and the months in which their influence is strongest will gradually pass away. It is singular, however, that the most eccentric caprices of appetite are rarely injurious; and the most unlimited indulgence is often borne not only with impunity but with advantage. Even the heartburn is not increased by large quantities of fruit, if eagerly longed for; and the rest is often calm and refreshing after food apparently the most indigestible. May not then these apparently capricious fancies be often the dictates of nature, the cravings of somewhat salutary to the constitution by means of which we are ignorant?

PREHE'NSIO, (from *prehendo, to take by surprise*). See CATALEPSIS.

PRE'MNON. See OCULUS.

PREPARATIONS, (from *preparo*), a term applied often to compound medicines, but more commonly, at present, confined to those parts of the human body which are artificially preserved from the usual changes in consequence of putrefaction, or prepared to display their structure.

Preparations are either wet or dry. Dry preparations should be always finished with expedition that the natural colour may be preserved, and great care should be taken that they are not soiled by dust or handling. The fat should be carefully removed; and the preparation may be slightly washed over by some colourless aqua kali puri, and again with water, to dissolve what may remain. If the part is not very thin, this may be repeated; but in general it injures the texture of the preparation, and such subjects should be chosen as have least fat. Objects preserved in this way should be dried in the shade, with a free current of air; but when the danger of putrefaction is considerable, artificial heat, in a degree not to melt the injection which is previously thrown into the vessels. If they are distended with air, small apertures should be made to prevent the rarefied air from bursting them. Dry membranes may be extended by pins on a flat board, with a paper slightly oiled beneath to prevent their sticking. Hollow substances are best preserved on stands under glass bells. In drying, fly blows and insects may be kept off by washing the preparation with a solution of hydrargyrus muriatus, in alcohol, in the proportion of a dram to six ounces.

Preparations are sometimes distended, for drying, with wool, cotton, hair, quicksilver, tallow, or plaster of Paris, besides air. The last, however, is preferable, as more uniform; but is apt to escape by minute foramina, which are with difficulty closed. Where the parietes are thick, as dropsical ovaries, uteri, or aneurisms, hair, or wool very slightly oiled, are necessary. Plaster of Paris is chiefly used where the distending substance is suffered to remain, where tortuous canals prevent the use of hair or wool, or where the membrane is so thin as to require an equable distension. Thin injected preparations are also conveniently displayed on plaster. The penis and the internal organs of generation, as well as the lymphatics, are most conveniently filled with quicksilver; the heart with tallow, which may be melted and drained off with a heat less than will melt the injection of the coronaries. The lungs are preserved dry, in small portions, by distending the air vessels with quicksilver; in larger portions, by filling them with oil of turpentine. When dry, each fluid may be discharged by an even, longitudinal section.

Dry preparations are varnished to preserve them from mould, to prevent their destruction by insects, and to increase their transparency. The white spirit varnish of the shops is well adapted for large masses; but is too friable when applied on thin membranes. For the latter purpose the oil varnish of the shops is preferable. It is necessary to separate every particle of fat or grease; and in using the spirit varnish to dry the preparation carefully. Externally both are properly laid on with a brush, and repeated coats are applied. In hollow preparations the varnish is poured in and shaken around; in corroded ones poured on them.

Another kind of dry preparation is styled *corroded*, since, after injection, the substance of the containing vessels is destroyed by immersing the whole in a fluid containing three parts of muriatic acid and one of water. From about three to six weeks is necessary for the corrosion. It is then to be placed in a bason; and at first a gentle, afterwards a stronger, stream of fresh water is allowed to pass through it. The little adhering pulp in the smaller interstices may be washed away, by directing a current of water through a small syringe to the part. The preparation must then be dried; and should be carefully suspended by a tape, as a cord will probably cut through the wax. If the vessels are not large enough to admit of its being suspended safely, it must be placed on cotton, over which a woollen cloth is spread. It must be supported on a stand, by means of plaster poured into the cavity, in which the trunk rests.

Wet preparations are preserved in spirits; and the peculiar art which raised the credit of Ruysch so high seems to be in part lost. Cotemporary authors speak with rapture of the pellucidity of his fluids, and the brilliancy of his injections. A little boy was so artificially preserved that the Czar Peter, it is said, ran and kissed it. Albinus succeded well, though less hap-

pily than Ruysch. Yet attentive anatomists have remarked, that the parts preserved in his glasses were peculiarly minute. Various fluids have been tried, but with little success; and we must now explain the methods of the most experienced dissectors.

When a part is to be preserved in spirits, it should be previously macerated in water, continually changing it, to prevent putrefaction, till it passes off pellucid. Every particle of fat and cellular membrane should then be separated, the hollow parts and cavities distended with hair; and the ducts, or more important blood vessels, pointed out by the introduction of bristles, quills, or bougies. If then put into alcohol, it will soon acquire firmness enough to admit of the removal of the stuffing.

Every object does not require spirits of the same strength. Those which are thick and massy require pure alcohol: those which are less so, proof spirit; and the membranous objects, one part of spirit, and two of water. The spirits and water should be previously mixed and filtered. Immersing some preparations in pure colourless oil of turpentine gives them transparency, and shows the internal organisation and arrangement of the blood vessels very perfectly; but is adapted only to those which are to be dried. At first the spirits should be frequently changed.

Dr. Monro adds a proportion of vitriolic or nitrous acid to the spirit; and this mixture neither changes the colour nor consistence of the parts, except they contain mucus or serum. The brain of a young child, the crystaline and vitreous humours of the eye, become so firm in this fluid as to admit of handling. The serum and the semen are coagulated in it; and the red injection is rendered more conspicuous. For the more tender albuminous parts, two drams of spirit of nitre must be added to a pound of spirit of wine. For other parts twenty or thirty drops are sufficient; and this fluid, it is said, comes very near the spirit employed by Ruysch.

To secure preparations and prevent the evaporation of the spirit requires many minute contrivances, scarcely within our scope to develope. The best method is to have the top of the glass accurately ground and polished, on which a piece of plate glass of the same size is to be laid. On the edge of the vessel a drop or two of gum water is placed, and the piece of plate glass laid gently on. The gum water will then, by capillary attraction, run round the rim, closing the little interstices which the polisher may have left. A piece of tin foil should then be moulded over the cover and the edge of the jar, and the whole secured by a wet bladder reaching below the tin foil, covered by a leather closely tied to the neck of the jar, well varnished, especially round the cord. The glass should be thick and free from any irregularities, so as to magnify the preparation without any distortion. With every precaution, however, spirit gradually evaporates. The best way of suspending light bodies is by a floating glass globe; larger ones by a stick fixed across, for a thread continued to the edge of the jar conducts the spirit, and assists evaporation.

PRE'SBYTÆ, (from πρεσϐυς, *old*). See Amblyopia, and Oculus.

PRESERVATI'VA A'QUA, (from *preservo, to prevent*). See Antivenerealis aqua.

PRESU'RA, (from πρεθω, *to inflame*). Inflammation of the ends of the fingers from cold; the *phlogosis erythema* of Cullen.

PRIAPÆ'IA. See Nicotiana minor.

PRIAPI'SMUS, (from *Priapus, the heathen god*). A priapism; an erection of the penis without any lascivious idea or inclination, with violent pain, is a spasmodic contraction of the erectores penis, wholly unconnected with the state of fulness of the vesiculæ seminales; and the disease of advanced life. Priapismus affords a striking instance of spasm arising from debility. Camphor and opium at night, with bark and warm aromatics in the day time, are the best remedies; but we can in general only palliate: the disease is seldom removed. See Impotentia.

PRI'MÆ VI'Æ. The first passages; that is, the stomach and duodenum.

PRIMU'LA VE'RIS, (from *primus*). See Paralysis.

Primu'la odorata. See Auricula ursi.

PRI'NCEPS ALEXIPHARMICO'RUM. See Angelica.

PRINCI'PIA, (from *princeps*). The principles or elements. In science it is the appellation of rudiments, or of those leading propositions on which the whole depends; thus, to mark the extremes of the scales, we have the *principia philosophiæ*, and *principia medicinæ*.

In analysis, the principles of bodies are those ultimate results beyond which we cannot proceed. According therefore to the progress of science, we have rested at different points, returning lately, with Aristotle, to earth, air, fire, and water. Yet air and water are certainly not elements, for water can be decomposed; and when we speak of air, we know it to be a compound, though we are unacquainted with its different bases. In fact, the only elements we can now recognise are earth and fire: yet of the common principle of the different earths we are still ignorant. Principles and elements are, therefore, words which ought to be effaced from chemical nomenclature; or, at least, they ought not to be used but as an expression denoting the last term of our analytical results; and it is always in this sense that the true philosopher uses the word.

PRIOR ANNULARIS INDICIS and MEDII. Interosseous muscles of the hand, moving these respective fingers.

PRIVATI'VI, (from *privo*). Privations, or defect of powers; synonymous with *dysæsthesiæ* and *dysorexiæ* in Cullen's Nosology.

PROBE, (from *probo, to try*). A surgical instrument, employed in examining the condition of a wound; the direction of a sinus; or the state of a bone. It is usually of silver, rounded at one end, and triangularly sharp at the other.

PRO'BOLE, (from προϐαλλω, *to project*). See Apophysis.

PRO'BANG. A flexible piece of whalebone, with sponge fixed to the end. See Deglutitio.

PROCA'RDION, (from προ, *before*, and καρδιον, *the stomach*). The pit of the stomach.

PROCATA'RCTICA CAU'SA. The procatarctic causes, (from προκαταρχομαι, *to precede*). The pre-existent cause. See Causa.

PROCE'SSUS. A process, (from *procedo, to start out*). In chemistry, the operation in which a new substance is produced.

In anatomy, it is a protuberance or eminence of a bone. If the process projects in a roundish ball it is called *caput*, and the narrow part *cervix*; when oblong, and unequally rounded, a *condyle*; when rough and unequal, a *tuberosity*. Processes which terminate in a sharp point are denominated *coronoid*; those which form a longitudinal ridge, *spina*, sometimes *crista*; the *labia* are each side of a broad spine; and brims of cavities are named *supercilia*. The use of processes is to assist motion, by allowing a greater surface for the origin, larger attachment, and more advantageous direction of muscles. See APOPHYSIS, and EPIPHYSIS.

PROCE'SSUS CILIA'RIS. See CILIARE LIGAMENTUM.

PROCE'SSUS MAMILLA'RES. See OLFACTORII NERVI.

PROCE'SSUS VERMIFORMIS. An appendage to the cœcum, resembling a worm, terminating in a point. Its use is unknown. See APPENDICULA VERMIFORMIS.

PROCIDE'NTIA, (from *procido, to fall down*). See PROLAPSUS.

PROCIDE'NTIA A'NI; *prolapsus*, and *exitus ani*, *exania*; the FALLING DOWN OF THE FUNDAMENT, is a relaxation of the sphincter, admitting the inversion of the internal villous coat of the intestine, with a proportional tumour.

The causes are, weakness, aggravated by costiveness, piles, diarrhœas, or tenesmus. It is induced also by every cause of violent forcing, as hard labour, or a stone in the bladder; and every cause of paralysis in the levatores and sphincter ani. Hoffmann attributes it to a relaxation of the ligaments of the intestines. Infants are the most frequent subjects of this disorder, in consequence of debility.

The tumour, which is of a fleshy colour, sometimes wrinkled, at others smooth and shining, accompanied with an uneasiness, and an ineffectual desire to go to stool, sufficiently distinguishes the complaint, which is sometimes mistaken for the piles. A ligature hath been applied about the prolapsed anus, in order to extirpate the supposed hæmorrhoid.

When costiveness, a stone in the bladder, or labour, occasion this complaint, the cure is sometimes effected: when a diarrhœa follows it is more difficult; if the hæmorrhoids supervene we rarely succeed.

If the disease, as sometimes happens, should proceed from acrid matter, the cause is distinguished by a sharp, pungent pain after every motion, and the relief is effected sometimes by chalk and mucilages; by mucilaginous clysters retained by opium; more frequently by equal parts of wax and soap, with a small proportion of the Theban extract. If the tenesmus is violent, the mucilaginous clysters, with a large proportion of opium, will be necessary, and the latter should be in a solid form. Should it proceed from costiveness, the mildest laxatives, particularly the castor oil, will be most useful. Rhubarb and aloes are highly injurious, and recommended only by indiscriminating empyrics.

If the prolapsed intestine be swelled, then cold, astringent applications are necessary, and by supporting the tumour with the palm of one hand, the fingers of the other will gradually replace the fallen intestine. We must, however, not violently persevere, but act only during the relaxation of the sphincter. After the reduction the part may be suspended by the T bandage.

When the prolapsed intestine is contracted by the sphincter ani, and cannot readily be returned, Mr. Pott advises bleeding, opium, fomentations, and an anodyne and emollient poultice to the part, to procure the necessary relaxation for the reduction. If extirpation proves necessary, it is best performed by ligature, for the hæmorrhage which would follow excision must be highly dangerous. If the prolapsus is large, a strong needle, double threaded, may be passed through the intestine, tied above on one side, and below on the other. If the prolapsus is small, a double ligature should be passed round its whole diameter; and in both cases be left to drop off. The pain is allayed by poultices, opium, &c. The sphincter afterwards performs its office.

If a gangrene affects the intestinal fold, the discoloured part, slightly scarified, should be repeatedly fomented with warm brandy, applying in the intervals the cataplasma è cumino.

When the prolapsed part cannot be easily retained in grown people, Cheselden recommends taking away a piece of the prolapsed gut lengthways, for, after the cicatrix is formed, it will never descend; a practice which Pott disapproves.

See Gooch's Cases and Remarks; Pott's Works; Turner's, Wiseman's, and Heister's Surgery; Bell's Surgery, vol. ii. p. 268; White's Surgery, p. 380.

PROCIDE'NTIA O'CULI. See MALUM.

PROCIDE'NTIA U'TERI, *metroproptosis, ecptoma, hysteroptosis*. Different degrees of this disorder are: 1. *Relaxatio*; A BEARING DOWN OF THE WOMB; when the womb descends down to the middle of the vagina; 2. *Procidentia*, when it descends to the labia; 3. *Prolapsus*, when it falls through the labia pudendi. INVERSIO, and RETROVERSIO, q. v. are different complaints. See also PREGNANCY.

The lesser degrees of this complaint are discovered by the touch, the greater by the eye. If the woman stands upright, a finger introduced into the vagina will discover the disease; and if the os tincæ be felt, the case is distinguished from a descent of the vagina, though the distinction is sometimes difficult. If the disease happens during pregnancy, the weight pressing down renders walking difficult and painful; micturition difficult; costiveness; and a numbness in the legs and thighs.

The pain is usually felt near the insertion of the broad ligaments, though these do not seem to support the womb; and the cause seems rather to be a relaxation of the vagina, which really supports it.

Girls are sometimes the subjects of this disease; but it most frequently happens to women who have experienced repeated hard labours; who have exerted themselves too soon after delivery; and are of a weak relaxed habit.

Leucorrhœa consequently predisposes to this disease, and it often arises from straining, lifting heavy weights, and whatever produces a strong action of the abdominal viscera.

If neglected, the disease becomes painful, obstinate, and inconvenient; sometimes inflammation, ulcers, or a cancer, are said to be the consequences.

It is necessary therefore for women to guard, with

great care, against the first feelings of the complaint, and to indulge themselves with rest, as well as to brace the constitution by tonics, cold bathing, and astringent injections. The bowels should be kept free, and every active exertion avoided. If the water be suppressed by the descent of the uterus, the tumour must be replaced, and the patient laid in bed, with her head lower than the trunk; and in making water the tumour may be supported. Should this plan fail, the catheter must be introduced. The prolapsed uterus sometimes ulcerates, from the access, it is said, of the air, or the acrimony of the urine, but in reality from the strangulation of the upper part; and the uterus should be replaced without attending to this circumstance.

In general the cure is only palliative, and consists of replacing the womb, rest, and introducing a pessary into the vagina, to prevent the uterus from falling lower. This sometimes produces a radical cure, and the relaxed parts recover their tone. In lesser degrees of this disorder, the usual confinement in bed during the next lying-in hath effected a cure; and when it occurs in early pregnancy, it disappears when the womb has enlarged so much as to rest on the pubes. A pessary should be introduced as soon as convenient after delivery, and worn for some time after the woman walks abroad. A round pessary is preferable; and it should be so large as to occasion some uneasiness in passing it, since it will otherwise be apt to fall down. See PESSARIUM.

If a lacerated perinæum is the cause, a cushion may be placed with its convex side to the os externum, and secured by the T bandage; and if the prolapsus hath been neglected, and a swelling with inflammation has come on, bleeding, cooling laxatives, fomentations, and poultices, are necessary: if a mortification appear, the bark with astringent ones. A pessary must be applied as soon as the patient can bear it. Whenever a gangrene or a cancer appear, reduction increases the symptoms, or produces new and fatal ones; but if there are ulcers, the part should be restored with all convenient speed, without waiting for their healing.

When the uterus not only descends, but is turned inside outward, it is styled *inversio uteri*. This only happens immediately after delivery, when the os tincæ is nearly as large as the fundus; and the funis is forcibly pulled to bring away the placenta. Whatever be the cause, the womb must immediately be restored, or the consequence will soon be fatal; for its orifice will contract, and prevent the necessary relief. After emptying the bladder, lay the patient on her back with her hips raised, and with the hand restore the inversion and gently return the uterus, retaining it till a contraction takes place, and afterwards supporting it as in case of prolapsus.

Dr. Leak advises, after the parts are reduced, the frequent use of the following astringent injection. ℞. Aluminis & vitriol. alb. āā ʒi. aq. bullient. ℔i. solve & cola. At the same time we must endeavour to strengthen the whole system by nourishing diet, chalybeate waters, and the bark. If no internal disease forbid, the cold bath will give great relief.

Should the descent of the tumour prevent the patient from walking, a fine sponge wrung out of alum water may be dried in a compressed state, cut into any convenient form, and introduced as high as possible. It will act by its astringency, and by its pressure in a gentle and uniform manner; and during the use of this application the astringent injection may be used twice a day; and the sponge tent should be made gradually smaller as the vagina contracts.

In the Edinburgh Medical Commentaries, vol. ii. p. 43, we are told that a woman of singular fortitude, about fifty years of age, was much afflicted with prolapsus uteri. After trying many remedies in vain, she at length cut into the substance of the uterus with a common kitchen knife. A considerable hæmorrhage ensued; but the uterus gradually contracted, and she had no return of the prolapsus, nor any bad symptom. Having boasted of her success, many women in the neighbourhood afflicted with the same complaint applied for her assistance, and, by a similar operation, were effectually cured.

In the prolapsus vaginæ the same method of cure is still more strongly recommended; and this peculiar case has suggested the idea that scarifications may be sometimes useful.

See Ruysch's Observations, N° 1, 7, 9, 10. and Saviard. London Medical Observations and Inquiries, vol. iii. p. 1. vol. iv. p. 388—400; Medical Museum, vol. i. p. 227—230; Heister's Surgery; Hamilton's Midwifery, edit. 5; Edinburgh Medical Commentaries, vol. ii. p. 43; London Medical Journal, vol. vi. p. 387; White's Surgery, p. 460; Leak's Medical Instructions, edit. 5.

PROCIDE'NTIA U'VULÆ. See HYPOSTAPHYLE.

PROCIDE'NTIA VAGI'NÆ; *colpoptosis*. The degrees of this disease are different; but when the whole vagina or a part appears through the pudendum, it may be called a *prolapsus*; when it descends to the labia a *procidentia*; and when not so far a *relaxatio*. Wideman-nus relates a case of this kind which had all the appearance of a prolapsus uteri, but not properly distinguished until it was too late to afford any relief; but generally the disease is known by observing the os tincæ, which distinguishes the prolapsed womb from all other cases of descent, and from the inversio, which only happens after labour. When the whole vagina is prolapsed it appears like crude bloody flesh; and if it swells violently, attended with inflammation, a sphacelus will soon come on; but if the swelling be slight, without inflammation, the tumour will neither be troublesome nor dangerous. This disorder should be distinguished from a tumour, a fungus, a sarcoma, &c. of the vagina.

The part may be restored with the fingers, and the patient should rest in bed for some days, using an injection of warm vinegar and water; red wine and water; or a solution of cerussa acetata. In most cases the first object seems to be ablution, then reduction, and afterwards corroborants, such as the bark, vitriolic acid, cold bathing, and avoiding all violent exercise. If these fail, the T bandage must be worn.

See Heister's Surgery; Hamilton's Midwifery, edit. 2. p. 247; Edinburgh Medical Commentaries, vol. 2. p. 46.

PROCIDE'NTIA VE'SICÆ URINA'RIÆ. The inversion of the uterus never happens without carrying the bladder with it into the perinæum, together forming a tumour. The bladder in this position is no longer exposed to the pressure of the abdominal muscles, and not having force enough in this posture to contract, the

patient is compelled to squeeze the bladder with her hands, or between her thighs. The catheter if introduced must not be thrust inward, but downward, the fundus of the bladder being below the meatus urinarius. See London Medical Observations and Inquiries, vol. iii. p. 1.

PROCO'NDYLUS, (from προ, *before*, and κονδυλος, *finger*). The first joint of each finger next the metacarpus, ante internodium.

PROCTA'LGIA, PROCTI'TIS, (from πρωκτος, *anus*, and αλγος, *pain*); *clunesia*, *cyssotis*. INFLAMMATION OF THE ANUS. A variety of the phlogosis in Dr. Cullen's system. It is discovered by a hot and acutely painful tumour at the anus, irritated by pressure, obstinate costiveness, and fever. The causes are, riding; violent blows; acrid applications; piles, &c. The disease yields with difficulty, often terminates in abscess, and is sometimes succeeded by fistula. See INFLAMMATIO, ABSCESSUS IN ANO, and FISTULA IN ANO.

PROCTOLEUCORRHŒ'A, (from πρωκτος, *anus*, λευκος, *white*, and ῥεω, *to flow*). A white mucous discharge from the anus.

PROCTORRŒ'A. A yellowish or sanious discharge from the rectum, accompanied with heat and itching about the anus. Whether, however, the discharge is white, yellow, or streaked with blood, the disease is the same, and consists of increased mucous discharge from the rectum, either from cold and irritation. It scarcely differs, except in its seat, from CŒLIACA, q. v.

PROCU'MBENS, (from *procumbo, to lie flat*). Botanically applied to a trailing plant.

PRODU'CTIO, (from *produco, to bring forth*). See APOPHYSIS.

PRODRO'MI. See ETESIÆ.

PRŒ'BIA, PRŒ'BRA. See AMULETA.

PROEGU'MENE, (from προηγεομαι, *antecedo*). A PRECEDENT CAUSE; by the Latins called *antecedens*. See CAUSA.

PROFLU'VIA, (from *profluo, to run down*). The fifth order of the first class of Dr. Cullen's Nosology. A pyrexia, with increased excretion, not naturally bloody; under which he includes two genera, *catarrhus* and *dysenteria*, as the only instances of febrile profluvia.

PROFLU'VIUM. A FLUX of any kind.

PROFLU'VIUM URI'NÆ. See DIABETES.

PROFU'NDA BRA'CHII VE'NA, vel PROFUNDA SUPE'RIOR, (from its deep situation); a branch from the basilica, sent off from it below the neck of the os humeri, and near the hollow of the axilla: it runs along the side of the brachial artery, and spreads in the adjacent muscles.

PROFU'NDUS MU'SCULUS MA'NUS. See FLEXOR INTERNODII, TERTII DIGITORUM MANUS.

PROFU'SIO, (from *profundo, to pour out*). PASSIVE HÆMORRHAGE. A genus in the class *locales*, and order *apocenoses* of Cullen, who defines it a flux of blood, and distinguishes it from active hæmorrhages, as not febrile, but occurring from wounds, leeches, &c.

PROGE'RMINUS ABSCE'SSUS. An abscess arising from a viscid and almost corrupted phlegm.

PROGLO'SSIS, (from προ, *before*, and γλωσσα, *the tongue*). See LINGUA.

PROGNOSIS, (from προ, *before*, and γινωσκω, *to know*); the foretelling of what may happen to the patient, either with respect to a future, or the progress or termination of a present, disease.

The prognostic of an impending disease may be drawn from the appearances, the mode of living, the changes in habits or situations, and the critical periods of life. If a person from a healthy state becomes sallow, weak, with loss of appetite and spirits, or with disturbed sleep, we may easily suppose that some disease threatens. If these appearances come on slowly, with a slight yellowness of countenance, obstructions in the primæ viæ or the liver have probably taken place; if more rapidly, with slight shiverings occasionally, a fever impends. A regular evening exacerbation, with cough, portends a hectic; a more violent shiver, with considerable heat, a continued fever, a deep redness in the face, with inflammation in the eyes, plainly point out accumulations in the head, and chiefly venous ones; but these often arise from diseases impeding a free circulation through the lungs, so that the state of these organs must be considered in forming the prognosis. They often exist together, and aggravate each other. Violent fixed pains in the head, recurring at irregular intervals, and usually excited by every cause of increased circulation, generally show that some fixed obstruction prevents the free course of the blood through the organ; and this is followed by convulsions, sometimes insanity, and frequently a sudden termination of life. A fulness in the stomach and abdomen are certain signs of accumulation, and it depends on the comparison of the other symptoms, whether it be water, infarcted viscera, accumulated contents, or merely flatus, and the prognostic must be regulated by comparing the symptoms of each disease. If a slight pain in the back be increased by stooping, and moving forward either leg, an affection of the psoas muscle may be apprehended; and if the pain is in the hip bone, shooting out at the knee, with a dragging of the leg on that side, some injury has taken place in the hip joint.

The *mode of life* will often lead us to form some prognostic of an impending disorder. Late hours cannot be borne with impunity, except by a very few, and their principal effect is to induce obstructions in the chylopoetic or other abdominal viscera. If connected with drinking spirituous liquors, the effect is usually felt in the liver. The sedentary student has reason to apprehend biliary accumulations, with costiveness, and a train of hypochondriac symptoms; but activity, however great, if sleep be allowed, leads to no complaint. Nature will not be deprived of her rights with impunity; nor can any one detract from his hours of sleep, in any considerable degree, without detracting, at least in a certain proportion, from the period of this life. Excess in eating or in drinking will equally lead us to foretel diseases of the stomach, often of the head, connected with the stomach; but retributive justice is frequently seen to punish the former error with the greatest severity, in the feelings of the patient, by loss of appetite. Almost every situation is apparently consistent with health, if free air be admitted; but its deficiency leads to a variety of diseases from debility, which may be easily foreseen, and can only be avoided by a change. Such creatures of habit, however, are mankind, that this chief assistant to health, free open air, can be dispensed with, often with impunity. The diseases of artificers are scarcely parts of the present subject; nor indeed have we found an appropriate portion of our work for their considera-

tion. The different parts of the enquiry are, however, scattered in various articles, under the appropriate complaints.

Changes of habits and situations are frequently the source of different diseases, which we can often prognosticate, and sometimes guard against. Abstemiousness, suddenly adopted after free living, and the contrary, are sources of disease, the former chiefly of complaints arising from insufficient stimulus, the latter from too great excitement. A sedentary, after an active life, is often attended with languor, low spirits, and visceral accumulations; the contrary, at first with languor and fatigue, soon followed by increased tone and vigour. The pure air of mountainous regions is a too active stimulus to lungs accustomed to the exhalations of marshes; and, on the contrary, a low situation, after a more elevated one, is often followed by intermittents, cachexy, and dropsy.

The *critical periods* of life merit attention also in our prognostics of various diseases. We have thought that PHTHISIS, q. v. was connected with a slower evolution of the body in its progressive stages; and we know that if scrofulous affections do not yield, in the first or at most in the second septenary, there is little prospect of a cure. The same may be said of epileptic paroxysms, and of chorea, though to the latter there are many exceptions. The critical period of the female life is that of the cessation rather than appearance of the catamenia, for unless hectic symptoms come on, the discharge, though at the distance of many years, becomes regular. The period of cessation, if not preceded by free, often copious, discharges of the menses, prognosticates a less healthy old age. If lancinating pains in the bottom of the abdomen attend; if the countenance is dark, and the discharge blackish; a local disease in the uterus may be suspected. The German authors are equally gloomy prophets respecting the appearance of the hæmorrhoidal flux in men, but in this country there is little room for such apprehensions.

Such is the outline of what might form a useful work on the prognostics of impending diseases, of which we have had hitherto no example, We must next consider the *prognostics of death or health from the symptoms of diseases which are present.* This part of our work also, in a general and scientific view, has scarcely been attempted.

Prognostics in diseases are usually drawn from the vital, animal, or natural actions. The vital actions which give the best information are the states of the circulation and the respiration. The first is chiefly known by the pulse, and on this subject we must, in part, anticipate what we shall soon explain. A pulse which strikes the finger with firmness, and is with difficulty compressed, shows a strong action of the artery and a general firmness of the whole system, in which we should suspect little danger, except from excess of excitement. Yet its counterfeit, a throbbing pulse, which strikes the finger with apparent but not real firmness, will sometimes mislead. The latter has not the same firm continued resistance; it strikes sharply, but not strongly, and the relaxation is as rapid as the impulse is transitory. When there is internal irritation the throbbing pulse will continue often to the last, showing, in every succeeding moment, its peculiar character more strongly; but in the commencement of fevers it often so nearly resembles the strong pulse as to deceive. A small pulse may be mistaken for a weak one, unless by a practitioner of experience; but the lightness of its strokes depends on the small size sometimes the depth of the artery. In general, the strong, slow pulse is favourable, except in affections of the head, or occasionally after narcotic poisons. In these cases it is often extremely slow, and shows that the irritability of the heart is diminished.

A large and small pulse refer rather to the contents than the strength of the artery. The former, connected with fulness, shows also a weaker tone of the solids; the small pulse can scarcely be distinguished from a weak one: neither are favourable. Each shows want of energy; nor is this increased by a combination with plethora. What is styled a hard pulse combines fulness with considerable strength. The artery strikes the finger as a large firm cord, and this occurs only in the most violent inflammations, where evacuations can be borne with great ease.

A quick and slow pulse are referable to their numbers in a given time; but in some cases, as mentioned above, the stroke is rapid, and the intervals long, which is called a pulsus celer; when the stroke is long and the intervals short, it may be called, by way of distinction, a retarded pulse. Each are marks of a weakened circulation, particularly the former, which shows the contraction to be in part spasmodic.

The number of the pulse is not perhaps of so much consequence as the young physician imagines, who keeps his stop watch with anxiety in his hand; for it not only varies in different constitutions, but is excited to an inconceivable rapidity in hysteric patients, by the slightest circumstances, without portending danger. In general, the physician should feel the pulse on his departure, as well as in coming. A natural pulse is from about 60 to 80, more strictly from 65 to 75. If a pulse is at 55 or 50, there is reason to apprehend some compression on the brain. If, in the early stages of fever, it rises to 120 in a female not peculiarly irritable, it portends considerable danger, either from debility or irritation. If, at any stage, it exceeds 120, or considerably exceeds it, except for a very short time, we have the greatest foundation for apprehension. A very quick pulse in complaints where the circulation is not usually much affected, is a symptom highly dangerous. In fevers the pulse, if above 96, generally exceeds 100, and there is seldom any medium between 108 and 120.

The only other distinction, relating to the prognosis, is the regular and intermitting pulse. The last is a dangerous symptom, unless it be habitual: a circumstance not uncommon. In such constitutions, the usual intermission, on the access of fever, often disappears, and the first symptom of amendment is the return of the intermission which at the end of a long fever may appear alarming, if not connected with other favourable symptoms.

The state of the circulation is also known by the appearance of the complexion. A sallowness and a want of transparency shows that the blood is not carried to the extreme vessels; and even when the cheeks are flushed, if the skin round the lips and nose is of an opaque, sallow whiteness, the conclusion will be the same, and the strength of the constitution is considerably impaired. The appearance of the eyes is equally indicatory of strength and weakness, as already explained

(see OCULUS), and the character of the features is preserved in proportion to the remaining strength, (see FEBRIS and PHYSIOGNOMONIA.) Each appearance depends on the state of the circulation.

Respiration is a vital action connected with the state of circulation, and of the greatest importance as a prognostic. We mean not to allude to the state of this function in disorders of the chest, where it is necessarily disturbed, but to speak of it as a symptom in more general diseases. A free, unincumbered respiration is usually a favourable sign; but from the due performance of this function there are many deviations. In point of strength it differs in increased and diminished motion, styled strong and weak. The first is occasionally full and deep, the latter slight and insufficient. If the accessary organs are called into action, it is styled short and suffocating. In point of celerity it is quick or slow; of regularity, synchronous or intermittent; of sound, stertorous, stridulous, or rattling.

Respiration *slow*, *full*, and *deep*, shows the strength and all the vital organs to be unimpaired, and in every situation is highly favourable. The *weak*, *slight*, and *insufficient* respiration is, in general, a mark of weakness; the *suffocating*, of obstruction; the *quick*, of considerable irritation, exciting rapid expiration. The *stertorous* shows insensibility, from compression on the brain; the *stridulous*, inflammation of the trachea; the *rattling* accumulations of phlegm often unconquerable; and the *intermittent* attends the last efforts of expiring life. In health, about three or three and a half pulsations of an artery take place in the interval of each inspiration; but this, like the number of the pulse, is subject to many variations.

The animal actions from which we may draw prognostics are, the senses, muscular action, and sleep. When the internal and external senses are uninjured in acute diseases, the prognostic is favourable; for in chronic complaints, unless in the last moments, they are seldom affected. Violent delirium is a symptom of active inflammation in the brain, and is dangerous only so far as it shows a violently acute disorder. The wandering delirium in fevers of a low kind is also a symptom of no great danger, unless it comes on early, and in a degree disproportioned to the state of fever. In other complaints it will excite serious apprehensions, and shows that the inequality of excitement depends on debility. If it persist after the cessation of the fever, unless evidently in consequence of debility, there is reason to suspect an organic injury in the brain, and more so if violent delirium has occurred in the early part of the complaint. The injury is generally an abscess, whose most common seat is the basis of the brain. Sometimes, however, a general fulness of the vessels only can be discovered. Delirium, arising from want of sleep, is said not to be dangerous; but the want of sleep itself is generally owing to a languid inflammation of the brain. General restlessness is a symptom of the same kind, from the same source.

Of the external senses, and their organs, the eye affords the most particular symptoms by which the event may be foretold. We have already spoke of its dimness, glare, and glassiness, when explaining the structure of the organ. Besides these, a fixed look, without an object, is a symptom highly dangerous. The sensation of black spots, which induces the patient to pick the clothes, as if he could remove them, is attributed to a partial insensibility in different portions of the retina. In fact, however, it rather depends on the immobility of the eye. We have remarked that, from the spot where the optic nerve enters, no sensation is conveyed; but, from the rapid motions of the eye, this is not perceived in health, and is only obvious when the eye is fixed. It is certainly, however, a highly dangerous symptom, though by no means a desperate one, as it has been represented. A dimness of sight, particularly in fevers, is highly dangerous; and double vision shows an irregular, perhaps a spasmodic, action of the muscles, which is truly alarming. It is in general an early symptom of hydrocephalus. Each is sometimes temporary, and ushers in the attack of hysteric or epileptic paroxysms. When the eyelids fall, and can scarcely be elevated by the exertion of the will, it shows considerable weakness, and when the patient sleeps without closing them, great insensibility. The latter symptom is, however, often owing to an irregular contraction of the muscles of the eyes; for in such cases the pupil is drawn up under the lid. The symptom is not, however, on this account less alarming. The clear natural appearance of the eye is a favourable symptom; but too great brilliancy, or too quick motions of this organ, show approaching delirium. A severe fixed look is a similar symptom. The appearance of the eyelids sometimes points out a weak state of the system, particularly when there is a blackness in the lower lid towards the inner canthus.

A noise in the ears in fevers is said to be a sign of approaching delirium, though frequently a symptom of weakness only, and often occurs from this cause in weak and old people. If this noise occurs in the beginning of fevers, it is said to foretel a violent and a tedious disease. Hearing peculiarly acute is often a precursor of delirium, and, without fever, is the effect of strong excitement in the brain. The author of this article, when he has sat at his literary labours for some hours undisturbed, has distinguished words at a distance where others could scarcely hear a sound, and has found his pulse often below 60, sometimes even at 50. Dimness of hearing, in cases where the head is not peculiarly affected, is dangerous; in fevers it is said to be a favourable symptom. It certainly is not unfavourable.

The distinction of *taste* in fevers is generally lost, though it is a favourable symptom, if it is in some degree retained. A nauseous taste in the mouth is generally a symptom of putrid matter in the stomach, very often of bile, and the latter is generally more conspicuous by a slimy, putrid taste far back in the throat.

A lassitude, a disinclination to *motion*, and a weakness when compelled to exertion, show, we have said, impending disease; and when in a peculiarly considerable degree on the attack of fevers, it is a symptom of a highly asthenic complaint. It arises from the want of sensorial energy, and is sometimes in so great a degree as to produce a *fainting*, which is always a very dangerous occurrence. If attended with a considerable wandering, the danger is greater.

It is a favourable sign if in the beginning of a fever the patient can sit erect with his head elevated. In the progress the head requires support; the erect posture is painful, and must be changed for a recumbent one; turning in bed next becomes difficult; lying on the sides requires some effort; so that he is after some time

confined to his back, and at last he cannot support his situation in bed, but gradually sinks down. The more early the appearance of these progressive symptoms the greater is the danger; and if the last occur so early in a fever as the eighth day, the case will be almost desperate. If the patient can support himself in bed, and occasionally turn on his side, about the twelfth day, circumstances are favourable. In chronic complaints the debility is considerable, and observes in some measure a similar progress, though not equally regular; but in these the patient sinks not from debility only, but from organic disease. In many diseases the patient can move and assist himself to the last moment. Spasms and convulsions, as marks of debility, are highly dangerous; but they seldom occur in fevers, without some suspicion of irritation combined. In infants, whose habits are more mobile, they are not equally dangerous, though generally alarming.

Sleep, if calm and refreshing, is always a favourable symptom; but if interrupted, broken by terror excited by dreadful images in dreams; if instead of tranquil rest the patient starts, catches, talks in a hurried manner, though not conscious of terror, it is unfavourable. The nature of the dreams furnishes also a prognostic. To fall from heights, to be immerged in a gulph, or in the sea, are images of more dire portent than others apparently not less terrible. On the other hand, dreams, though frequent, if not terrible, are not unfavourable. As a religious mania is more dangerous and obstinate than any other kind; so these dreams, where the imagination is haunted by the fears of an offended God, and eternal punishment, are those of the most dangerous kind, because the reason, when awake, is less able to combat with the unreal image. *Deep sleep* is itself a disease, and shows considerable oppression on the brain: yet, at the period of a crisis, if attended with a soft pulse, moderately slow, and a soft moist skin, it is salutary. After a crisis the deepest long-continued sleep is not dangerous, if not attended with stertor, or with a pulse preternaturally slow.

The *natural actions* which furnish prognostics are digestion and its consequences, and the various excretions. In fever the *appetite* is at once destroyed; nor is it a favourble sign, in an acute disease, that it should remain or return too soon. In fact, the appetite does not always keep pace with the digestive powers, and the stomach craves, or is allured, while the digestion is still imperfect. In general, appetite in acute diseases should be distrusted, and gratified sparingly. In chronic ones it is sometimes unimpaired and ravenous, and may be indulged with little danger, but seldom with advantage. While it continues, the friends are gratified, and expectation is alive, but an attention to the effects will destroy the delusion. If it does not add to the load, and to the disease, it does not strengthen. In obstructions of the mesentery, sometimes of the liver, it continues unimpaired and its gratification is attended with no injury. In hectics, where it sometimes continues, food of every kind is followed by oppression and sleepiness. In the former case it is only not injurious.

Thirst is one of those indications which we can apparently gratify with the least injury. As a prognostic it shows dryness of the mouth, acrimony in the stomach, perhaps in the whole system, and is generally the consequence of excessive effusion from the exhalent arteries into the cavities, or cellular substance. In each case it is an unpleasing symptom; because its gratification will not always relieve the cause; for watery fluids alone are immediately thrown off by the excretories; and when from increased exhalation, the fluids swallowed add often imperfectly to the secretion, and sometimes more certainly to the exhalation. It seems only useful when acrid saburræ exist in the stomach. We know not that it is in other instances highly injurious, though certainly not beneficial. *Deglution*, unless in organic diseases of the œsophagus, is easy or difficult in proportion as the appetite is good or bad. In hysterical cases it is also opposed often by wind, and in hiccough by the convulsion: in each case, however, the circumstances will correct the prognostic.

The appearance of the tongue is closely connected with the sense of thirst, and is of considerable importance as a prognostic. Many persons, however, have a tongue constantly white; but, in general, whiteness of its surface is a sign of fever. If white and dry, it shows the fever to be more considerable; but each appearance begins at the root, proceeds gradually forward in a triangular form, the apex of which is at the tip. This triangle gradually extends till it reaches the sides, and it recedes in the same progression. In the progress of a fever it becomes in the same order brown, a darker brown, and even black; and these colours are usually seen when the tongue is dry and hard. While the edges continue clean, and of their natural speckled appearance, there is little danger; and indeed fevers have terminated favourably though the tongue has been, for many days, dark, dry, and even black. In one or two epidemics we have found the tongue swell and become black without being dry, though the fever has terminated favourably. The tongue sometimes in the course of a fever becomes suddenly clean, and of a shining red. This, in general, shows that the fever will be of some continuance. No separation of the fur is, however, salutary, that does not leave the tongue of its natural hue, and the papillæ distinct. We have thought that when the tongue has assumed this shining red colour, it has portended aphthous eruptions in the throat, for these sometimes follow, and their appearance is known by small mucous spots on the shining surface. These, however, are not dangerous, except in fevers highly putrid. The tongue sometimes cleans slowly in elderly and debilitated constitutions; and independent of fever, in such habits the tongue is often black at the back part. Neither is a white tongue always a sign of fevers; since in the greater number of people anxiety of mind, and even a restless night, will produce this change.

A sense of heat in the upper orifice of the stomach shows either acrimony chiefly acid, sometimes oily; occasionally an extraordinary sensibility of the cardia. In each case we can draw neither a favourable nor an unfavourable prognostic; for it is a symptom chiefly of indigestion. A heavy load in the stomach is an unfavourable symptom, unless it arise from indigestible food, since it shows either an accumulation of viscid mucus, or a want of energy in the organ. When the irritability of the stomach is exhausted by excessive stimuli, the effect is a heavy load.

Vomiting is the connecting symptom between affec-

tions of the digestive organs, and those of the secretory ones. When violent and incessant, without previous accumulations of bile, it is an unfavourable symptom, as it generally arises from irritation on the brain. Even when from bile it is distressing, for the act of vomiting emulges the biliary duct, and the inverted motion of the duodenum carries the bilious fluid back into the stomach, thus furnishing new fewel for the flame. In general, therefore, it should be steadily checked, after the contents of the stomach have been evacuated. In exhausted constitutions, either in consequence of age or free living, particularly from excess of spirituous liquors, a black flaky matter is discharged sometimes from the stomach; a symptom of the most dangerous kind, which may be palliated, but the patient seldom wholly recovers.

A frequent *diarrhœa*, independent of mucous inflammation, is dangerous, as it shows considerable debility, and a difficulty of retaining the food so long as is necessary for its assimilation. If the discharge be chylous, it is more unfavourable, as the digestive process is evidently imperfect. If mucous, with straining and tenesmus, the danger is not so great, as it then generally arises from irregular action of the lower part of the intestine; if fetid and sanious, there will be great reason to apprehend a malignant ulcer; if with lancinating pains, a cancer. Too little action of the bowels is highly inconvenient, particularly in pregnant women, but seldom in other circumstances dangerous, except from organic obstruction, or palsy of the moving fibres. The former is rare, and the latter not common except in old persons and in exhausted constitutions.

The other excretions, which have attracted attention as prognostics, are, the *perspiration, the sputum, and the urine*. The former was considered as the truly salutary discharge, but the want of those distinctions which we endeavoured to establish in the article DIAPHORETICA, q. v. seems to have occasioned the greatest inconveniencies. Sweat was excited, while the diapnoe was only salutary. It is now generally acknowledged, that the salutary perspiration is not attended with heat, is not clammy to the touch, is generally diffused, without any load, uneasiness, or anxiety. The sweat of an opposite kind does not relieve, but debilitate. Cold, clammy sweats arise from a total relaxation of the exhalents, and are, in general, the preludes of death. In some constitutions, perspiration is almost wholly absent; and this is one of the idiosyncracies often within the limits of health. In fevers, however, which attack constitutions of a different kind, a dry harsh skin is an unfavourable symptom.

The *sputum* is chiefly examined as a prognostic in hectics and peripneumony. In each we have already noticed it; but we may now add, that all *mucous discharges* which are salutary consist of a bland, apparently equable, fluid, capable of being extended in strings, and containing, when examined in a microscope, minute globules.

The prognostics from the *urine* have filled volumes, which modern practitioners have ungraciously neglected, indeed we suspect with good reason. Yet a work of this kind must contain not only what is useful, but often what may appear ridiculous, if it has formed a part of the science; for it is our duty to delineate what it has been and what it is.

The urine claimed the particular attention of practitioners, because they considered it as denoting the degree of concoction, and they often neglected, in their anxiety to mark this change, the varieties which arise from sex, temperament, and the time of discharging it. A very simple precaution was omitted. The morning urine was selected; but, if none had been discharged in the night, not only that which was *secreted* during the remission, but that also separated during the exacerbation, was mixed. If, in the progress of a fever, the urine be carefully examined with these precautions, it will be at once seen how little dependence can be placed on the usual observations. As in the intermittent pulse, there is also an anomaly in the urine of some constitutions. The urine of many persons in health deposits little or no sediment; but in fevers the sediment appears copious, and often red. The returning health, in these cases, is marked by urine remarkably clear.

Urine must be examined only after it has been made for some time, and it should be poured into glasses while yet warm. A portion of the urine, made every time, should be reserved, and the time it is discharged, as well as the quantity, should be noted. The glasses should be kept in air moderately cold. With such precautions some useful lessons may perhaps be drawn from its appearance.

The quantity of urine varies in different persons, and in the same at different periods. From this no conclusion can be drawn; and the greatest apparent deficiency, unless other cachectic symptoms, and a tendency to accumulation appear in the different cavities, is not dangerous. In general, where it is remarkably deficient, it is at other times equally redundant; and this chiefly occurs in hysterical constitutions. The excess is also at no time dangerous, unless the quality of the urine is changed, since it only depends on irregular action of the renal vessels. The natural urine is of a yellowish colour. When of a deep dark red, its quantity is small, and either fever, or dropsical effusions, are the cause. To this, however, there are exceptions. When the urine is in small quantity its colour is necessarily high; and at the conclusion of a gouty paroxysm, as well as of a paroxysm of an intermittent, it throws down a brick-coloured sediment, styled *lateritious*. When highly red, without depositing any sediment, in the language of the Galenists, it shows the greatest crudity and great difficulty of concoction; in other words, a violent, and probably a long fever. When floculi, instead of a light cloud, are seen in it, or an oily pellicle appears on the surface, we have thought it showed a weakness of the habit, and have been accustomed to expect little energy in the constitution to shake off the complaint. We know not, however, that observation will fully support this opinion. The progress of the cloud in the urine in cases of fever is regular. It is at first suspended at the top, gradually falls, though for a day or two often stationary near the middle of the glass, and at last reaches the bottom. It falls to the bottom often some days before it is accompanied by any sediment; but when a white or reddish sediment also falls down, the crisis is nearly complete. We sometimes find in the middle of a fever a sudden fall of a reddish sediment, which is transitory; for the urine again becomes clear, so that the prognosis from the urine must be corrected by appearance of amendment in other respects, and by the critical day of

the fever. The urine is sometimes turbid; if not at the moment of discharging it, very soon afterwards; and this, according to the authors of prognostics, is said to show an insidious disease. If, at an early period of the fever, ("in the days of crudity,") and no deposition takes place, it seems to portend a violent degree of fever and great debility.

Frothy urine, or which long retains the air bubbles, is said to show a tedious disease, or a slow consuming fever. In fact, it is owing to a separation of gluten or albuminous matter, and often occurs after severe fevers. It is sometimes found, as well as a pellicle on the surface, in scorbutic cases, and is occasionally iridescent. In bilious fevers, and in jaundice, the urine is sometimes yellow, occasionally black or green. The yellow urine is not, in general, an object of apprehension; but, when green or black, it is supposed to show a highly putrid state. Green urine, however, is generally bilious, with an excess of the urea, and its colour may be restored by adding an alkali. The black is more dangerous, but, unless highly fetid, we have often seen it without its being followed by a fatal event. Fetid urine in violent fevers is undoubtedly dangerous; but, in other circumstances, it often occurs without danger.

In chronic diseases, red urine, depositing a copious, red, scaly, or branny sediment, is a mark of considerable debility. It occurs in dropsy, in scurvy, and phthisis; and the most unfavourable prognostic must be drawn from its appearance. A mucous and viscid sediment is usually alarming from the apprehensions which it excites of abscess in the bladder. Mucus is, however, light, and equable, wholly free from fœtor; and arises, as we have seen in many instances, from an inflammation of the mucous membrane; see CATARRHUS VESICÆ. It arises also from any irritation of the neck of the bladder; sometimes from irritation from the rectum or prostate; and it is a frequent symptom of gravel and calculus.

The nature of the *alvine discharge* is of considerable importance. In acute diseases the discharge is often estimated by the number of motions rather than their appearance; and we have been told that there has been a free discharge from the bowels when the stools have not had the slightest feculence. The physician should therefore always examine them with attention. Liquid, frothy, watery motions, with little colour or smell, show, in general, a tedious fever; for in every fever there seems to be an obstinate retention of the fæces, and motions of this kind show that the spasm is peculiarly violent. When the stools, in the beginning, are highly fetid and bilious, it has been accounted a dangerous symptom; but if the discharge be free and copious, they are rather favourable. Calomel will, through the whole course of a fever, often bring off such motions, either by its superior power on the biliary secretion, or from some change which its irritation occasions: we have sometimes suspected the latter cause, and at least have not found it an essentially necessary cathartic to produce the salutary evacuations. Small, black, pitch-like motions are always dangerous, and show equal weakness in the alimentary canal and the biliary system. On the contrary, the appearance of scybala, brought off with little straining or colic, is favourable. Fetid motions, in fevers, are common; and, unless combined with other unfavourable symptoms, by no means dangerous.

In hectics, highly liquid and offensive motions are peculiarly dangerous, as they show a metastasis of purulent matter; nor can they be checked without danger. In jaundice, a change in the usual whiteness of the stools is a favourable symptom; but when they have continued of a dark colour, with little change, from the beginning of the complaint, which sometimes unaccountably happens, we are deprived of this source of our prognostic. In other chronic diseases we find little certain foundation of prognosis from their appearance.

See the Prænotiones of Hippocrates (including the prognostics and proretica), with the Commentaries of Heurnius, Mercurialis, Montani, Trincavellius, Duretus, Cardanus, Brendel, and a Fonseca; Galen de Præcognitione et Præsagium, vol. v.; Rhazes de Prognosticis; Gaubii Pathologia; Vater de Præsagiis Vitæ et Morbis; Prosper Alpinus de Præsagienda Vita et Morte; Vogel Prænotionum Pensum; Juncker Monita circa Prognosim et de Cauta Prognosi; Ludwig Institutiones Medicæ; Welthern in Eyerel's Collection; Baglivi Opuscula; Horstius de Signis Prognosticis. Dr. Moffat has translated the Prognostics of Hippocrates into English.

PRO'HIBENS, (from *prohibeo, to forbid*). See ANTENDEIXIS.

PROJE'CTIO, (from *projicio, to cast forth*). PROJECTION, in chemistry is the casting any substance to be calcined into a crucible, by a spoonful or a small quantity at time; sometimes an addition of a small quantity of a substance to a greater quantity of a metal, in order to meliorate the latter. See Wilson's Chemistry.

PROJECTU'RA, (from the same). See APOPHYSIS.

PROLA'BIUM, (*pro, before, labium, the lip*; προχειλα, from the corresponding Greek words). The RED PART of the LIPS. Under the epidermis in this part, called *epithelium*, is a collection of fine, long, villous papillæ, closely connected together, covered not only by the epidermis, but by that pellicle which covers the glandular membrane of the cavity of the mouth: this villous substance is of exquisite sensibility.

PROLA'PSUS, (from *prolabor, to slip down*). *Procidentia, delapsio, exania, proptoma*, PROPTOSIS, q. v. A disease in the class *locales* and order *ectopiæ* of Cullen. A prolapsus is the displacing of a soft part, so that it is generally obvious to the sight; or a tumour arising from such displacements, as in the bearing down of the rectum, or an intestinal hernia. See PROCIDENTIA.

PRONA'TIO, (from *pronus, upside down*). PRONATION. When spoken of the hand it is when the thumb is turned towards the body, and the palm of the hand is downwards.

PRONA'TOR RA'DII QUADRATUS, *transversus*; a muscle which rises tendinous from the inner part of the ulna, and is inserted into the inner part of the radius. One end of it is fixed to the lower part of the ulna, and the other to the concave side of the lower extremity of the radius, to which it passes in a transverse direction.

PRONA'TOR TE'RES, or RADII TE'RES, *obliquus*, rises from the internal inferior part of the os humeri, and tendinous from the coronoid process of the ulna.

The median nerve passes between these two portions. It is inserted into a line at the anterior convex edge of the radius about the middle of the bone.

PROPHY'LACE, PROPHYLA'XIS, (from προ, *before*, and φυλαττω, *to preserve*), *diaphylacticos*, *diasostica*, the method of preserving health, and averting diseases. See HYGIEINE and CONTAGIO.

PRO'POLIS, (from προ, *before*, and πολις, *the family*), *cerantheмus*. BEE-GLUE, or BEE-BREAD, is a wax-like kind of glue, found in the entrance of bee-hives, formerly used as an emollient, but in the present practice neglected.

PROPRIETA'TIS ELI'XIR, *elixir aloes*, and *tinctura aloes, composita*. See ALOE.

PROPRIETA'TIS ELI'XIR VITRIO'LICUM. See ALOE.

PROPTO'MA, (from προπιπτω, *to fall out*). A less degree of PROLAPSUS, q. v. generally applied to relaxations of the upper-lip, mammæ, or scrotum.

PROPTO'SIS, (from the same), synonymous with *procidentia*. When the eye is so enlarged as to project beyond the eyelids, it sometimes bursts; and the disease is called *oculus elephantinus*, *bovinus*, and *bubulus*.

In the Medical Communications, vol. i. p. 409, &c. are the following remarks on the mode of cure of hydrophthalmia, or proptosis:

The cure of the disease by seton is to be adopted only where the vision is entirely lost, as the intent of the operation is merely to remedy the inconveniencies occasioned by the increased bulk of the eye. These inconveniencies are, frequent pain, inflammation of the diseased eye, headach, restlessness, difficulty of closing the eyelids, a constant effusion of tears down the cheek, and a great deformity from the bulk of the tumour. The other eye is often liable to inflammation, and the patient commonly incapable of reading, &c.

In the following operation, the surgeon and his patient should be seated in the same manner as for extracting the cataract. The seton needle being armed with six threads of white sewing-silk, is to be passed from the external angle, about a quarter of an inch from the edge of the cornea, through the posterior chamber of the eye, and brought out at the same distance from the inner edge of the cornea. The pain arising from using the speculum oculi in this operation seems to over-balance the advantage gained by its fixing the eye. The threads, when fastened, must not be drawn tight, lest they should cut through the cornea before the cure is completed.

The external applications should be of the sedative kind, as the saturnine water of Goulard, applied warm. A degree of inflammation and fever come on soon after the operation, but readily give way to a cooling regimen, bleeding, and gentle laxatives. A swelling of the eyelids, and a thickening of the coats of the eye, also follow the operation; but these commonly begin to subside about the eighth or ninth day, when some of the threads may be taken out; and the swelling gradually sinking within the orbit, the patient finds a comfortable alleviation of the most painful symptoms.

For a month after the operation some of the threads may be kept in, which, after the first inflammation is removed, do not occasion much irritation. See London Medical Journal, vol. i. p. 346.

PRO'RA, (from πρωρα, *the prow of a vessel*). See OCCIPUT.

PRO'RÆ SUTU'RA. See LAMBDOIDES.

PROSARTHRO'SIS, (from προς, *to*, and αρθροω *to articulate*). See ARTICULATIO.

PROSTA'TA, (from προιϛαμαι, *to be adjacent to*; because it stands near the bladder). The PROSTATE GLAND; *corpus glandulosum*, *adenoides* The prostate is situated at the neck of the bladder, shaped like a heart, and about the size of a walnut; the basis lying towards the bladder, on the rectum, and the apex towards the urethra: the lower surface is the largest, and the upper ones are both flat. The membranous part of the urethra runs through it, and apparently divides it into two lobes, from whence it has sometimes a plural termination. The vasa deferentia pass also through its substance. It is a spongy body, and in each lobe there are several folliculi, which open into the urethra at its commencement. That part of the urethra between the apex of the gland and its bulb passes through a ligament at the back part of the symphysis pubis. This ligament is, of course, between the apex of the prostate and the bulb of the urethra, and this portion has been styled the *neck of the urethra*, while the part between the body of the bladder and the prostate is distinguished as *the neck of the bladder*. When the prostate gland is inflamed from a suppressed gonorrhœa, every means should be used to restore the discharge; for if this inflammation terminates in suppuration, whether the abscess break into the urethra, bladder, intestinum rectum, or perinæum, it will always be attended with disagreeable consequences. The symptoms of an inflammation or swelling of this gland are known from the pain and difficulty of making water; and if we should be doubtful whence they proceed, the finger in the rectum will clearly teach us. If a suppuration has already taken place, mercury internally and externally will be necessary, with occasional laxatives. Blisters must be repeatedly applied to the perinæum, and hemlock given in large doses. If a total suppression of urine is feared from the bulk, suppuration will prevent worse mischiefs. A schirrus, however, in this part is often untractable, though, with Girtanner, we employ the burnt sponge and hemlock, or, with Hunter, keep up a constant discharge by a blister. Michaelis in Richter's Bibliotheca Chirurgica, vi. b. 157, 185.

PROTORRU'TOS, (from πρωτος, *primus*, and ῥεω, *fluo*.) See CAPNELÆUM.

PROTUBERA'NTIA, (from *protubero*, *to bud forth*). See APOPHYSIS.

PRU'NA, (from πρενη, *the sloe bush*, *plum tree*). A name for *carbunculus*, *a perurendo*, from its burning pain. Prunes are distinguished by epithets joined with it, viz.

PRU'NA DOMESTICA, *Gallica parva sativa*. COMMON or FRENCH PRUNES, the LITTLE, BLACK, DAMASK PLUM; *prunus domestica* Lin. Sp. Pl. 680.

This species is without spines, and covered with a smooth bark, of a dark brown colour: a native of Britain: it flowers in April and May.

Our garden plums, when ripe, and taken moderately, are pleasant, but unwholesome and indigestible: unripe they produce cholic, diarrhœa, or cholera. They are cooling and laxative, particularly the French prunes

imported from Marseilles; though, by drying, their laxative power is diminished. In costive habits they are given boiled with senna, or other purgatives, and are ingredients in the electarium è sennâ.

PRUNA BRIGNOLENSIA, *prunello*, or BRIGNOLE PLUM; *pruna domestica*, var. δ, from Brignole in Provence. It is of a reddish yellow colour, and of a very grateful, sweet, subacid taste.

PRU'NA DAMASCE'NA, the DAMASK PRUNE, DAMSONS; *damascena pruna nostrata, pruna domestica*, var. β. This species is generally supplied by the common prune, which it resembles in its general qualities. The prunelloes quench thirst more effectually than the others; and the French plums are most laxative.

PRUNE'LLA, (from *pruna, a burn*; because it heals burns). See BRUNELLA and BUGULA.

PRUNE'LLO. See PRUNA BRIGNOLENSIA.

PRU'NUS BRASILIE'NSIS. See ACAJA.

PRU'NUS PRUNI'FERA. See NUX VIRGINIANA.

PRU'NUS SPINO'SA, SYLVE'STRIS, *spinosa domestica agriococcimela*. The BLACK THORN, or SLOE-BUSH, *prunus spinosa* Lin. Sp. Pl. 681, is a prickly bush, very common in hedges, producing an austere fruit, smaller than an ordinary cherry, and too harsh to be eaten before the frosts have softened them. The juice expressed before they are ripe, or affected by the frost, inspissated by a gentle heat, is called *acacia Germanica*, and generally sold for the *acacia Egyptiaca*. It differs, however, in being harder, heavier, darker-coloured, of a sharper taste, and giving out its astringency to alcohol, while the Egyptian acacia is scarcely at all soluble in spirit. This fruit is an agreeable and useful astringent.

A conserve is made of the sloes by steeping them in hot water, taking care that they do not burst: and when they are soft enough to pulp, they are pressed through a hair sieve, and to one part of the pulp three parts of lump-sugar must be added. (Pharm. Lond. 1788.) Sloes have been recommended in diarrhœas, hæmorrhages, in tumefactions of the tonsils and uvulæ, as gargles. Dr. Cullen considers the sloe as the most powerful of the fructus acerbi, and has often found it an agreeable and useful astringent. The conserve possesses these properties. The flowers with their calyces are moderately purgative, and, for this purpose, an ounce infused in a sufficient quantity of water, or rather whey, was found to be an useful and pleasant laxative. The powdered bark, in doses of a dram, is said to cure agues. The dry tender leaves are considered as a good substitute for tea. See ACACIA GERMANICA.

PRU'NUS LAUROCE'RASUS. See LAUROCERASUS.

PRURI'GO, PRURI'TUS, (from *prurio, to itch*). A VIOLENT ITCHING. This is established by Dr. Willan as a genus of disease wholly independent of those contagious pustules styled the itch, and it is one of the most distressing complaints with which mankind is afflicted.

Dr. Willan makes the prurigo the third genus of his first order of cutaneous eruptions; an itching of the skin, accompanied with an eruption of papulæ, the colour of which scarcely exceeds that of the adjoining cuticle. This he denominates prurigo, and as it is not characterised during its first stages by an eruption of pustules, it is classed among the papulous diseases of the skin. He divides it into three species; *prurigo mitis, formicans*, and *senilis*, adding the local affections of the same nature. The first species, *p. mitis*, is known by soft and smooth elevations of the cuticle, somewhat larger than the papulæ of the lichen, retaining the usual colour of the skin, seldom appearing red, or much inflamed, except from violent friction. They are attended with an almost incessant itching, particularly on undressing, and for some hours after going to bed. When by rubbing or scratching, the tops of the papulæ are removed, a clear fluid oozes from them, and gradually concretes into thin dark-coloured scabs. The itching does not, however, abate; and, from the constant unavoidable friction, inflamed pustules resembling PHLYZACIA, q. v. are sometimes produced. These, when they appear early in the complaint, must be considered as incidental, not as proper to the complaint. This disease originates without any previous indisposition, generally in the spring, or the beginning of summer; affecting chiefly young persons, producing irritation, and preventing the freedom of perspiration. The eruption extends to the arms, breast, back, and thighs; and is troublesome rather than dangerous.

Itching, however, when in a greater degree, and in some other parts, is a disease highly distressing. It is scarcely, or only for a short time, removed by scratching; and at last this remedy fails, in consequence of the wounds which the nails inflict. It has been supposed that pain and itching are incompatible sensations, but those who suffer severely from the third species express their complaints so warmly, that perhaps the opinion holds only when the prurigo is in a less degree. Itching is sometimes connected with acrimony discharged by the exhalent arteries, but more certainly with diminished perspiration, though in general both causes are united; for acrimony freely discharged, or obstructed perspiration, independent of acrimony, seldom produces the complaint. The various causes assigned seem to support this idea. Valisnieri attributes it to gout; Riedlin to repelled evacuations; other authors to scurvy, to ulcers improperly healed, and to worms. We commonly attribute the itching of the nose of children to the irritation of the latter. In the first species, the acrimony is apparently inconsiderable, and is easily eliminated by the free use of soap and water; but when more pungent, it not only by its action on the nerves of the cutis excites the sensation of itching, but raises, with the distended exhalent artery, the minuter nerve which accompanies it in the minute papula, which distinguishes the complaint. These, when wounded, exhale a fluid, which adds to the distress by extending its source.

PRURI'GO FORMI'CANS, (from *formica, an ant*), so called from the sensation on the skin resembling the creeping of an ant. In this disease the papulæ are sometimes larger, sometimes more obscure, than in the *prurigo mitis*; but always attended with a continual and almost intolerable itching. They are diffused over the whole body, except the face, feet, and palms of the hands; and appear in greatest number about the neck, loins, and thighs; parts subjected to tight ligatures. Besides the sensation of small insects creeping on the skin, it sometimes resembles the stinging of ants, sometimes of hot needles piercing in different places. When warm, these sensations are more violent; and when any part of the skin is strongly rubbed, it becomes red, and large tubercles or wheals are produced, which subside when the irritation ceases. If the cuticle is

abraded by scratching, the surface of the body is spotted with small thin scabs; and this is frequently the only obvious appearance, for the papulæ are often indistinct from their minuteness. Where they are of a large size, headach, sickness, and pain of the stomach, precede their eruption, returning if the eruption is suddenly repelled. Though not obviously connected with a pain of the stomach, the prurigo formicans is generally attended with a cachectic state; and elderly persons of a sallow complexion, who labour under obstructions in the viscera, are most liable to it: the same conclusion may be drawn from its causes, which are grief, watching, fatigue, and poor diet. This disease usually affects adults, commencing at all seasons of the year indifferently; and its duration is from four months to two or three years, with short intermissions: want of cleanliness, certain modes of diet, living much upon fish, and other animal food in the summer season; drinking freely of wine, and other spirits, powerfully aggravate the complaint. In general those affected with it have a harsh dry skin; and as from the predisposing causes the acrimony may be more considerable, so from this state of the surface its discharge will be more difficult. The prurigo formicans has been supposed contagious; but there are some reasons which seem to prove the contrary. It is in general a disease of the habit, and is not communicated to those whose connection is most intimate, nor does it ever terminate in a contagious pustular disease. Various remedies for this complaint have been tried without success. It is necessary to restore by appropriate medicines the general health; and, after this, the natron preparatum of the London Dispensatory, sometimes alone, sometimes combined with sulphur, joined with the infusion of sassafras, or the tops of juniper, freely drank; or the aqua kali, with the addition of a small portion of tinctura opii, have gradually alleviated the disagreeable symptoms, and conquered the complaint in a month or six weeks. With respect to external applications, it is necessary to keep the skin free from sordes, by frequent washing with warm water; but, should this fail, the medicated baths are recommended, particularly those prepared with alcalised sulphur; sea-bathing has been successful in some cases. On the head of diet it is only necessary to observe, that in general it is requisite to live upon light, soft, and easily digestible food; to avoid all heating and stimulating substances, particularly white wines and spirituous liquors. Whey, milk and water, asses' milk, and goats' milk, constitute a part of the proper regimen.

All the variety of remedies usually prescribed, viz. mercury and antimony, whether separate or combined; oleum vitrioli, purgatives, neutral salts, and sulphur, have failed. Externally mercurial and sulphureous ointments, decoction of white hellebore, lime water, solutions of white vitriol, and corrosive sublimate, have been equally ineffectual.

PRU'RIGO SENI'LIS is, as the name imports, an affection of old age. In this species the patients are tormented with a violent and universal itching; the papulæ are for the most part large, though not inflamed; and sometimes the whole surface has a shining appearance, is irregular, or granulated, without an eruption of distinct papulæ. Scurf, or scales, succeed, which prove an additional cause of irritation from their repeated separation and renewal; and when, by scratching, the cuticle is abraded, a mingled sensation of itching and smarting rises at times beyond all human sufferance. This disease does not differ greatly in its symptoms and external appearance from the foregoing species, but has still been thought to merit a distinct consideration from its peculiar inveteracy. From the dry condensed state of the skin and cuticle, with the additional acrimony of the fluids, which takes place in old age, this species of prurigo is perhaps aggravated, and becomes more permanent. The melancholic and mixed temperaments are most subject to this complaint, and it appears to be connected with a languid state of the circulation, and weak digestion. If the disease should be in a high degree, during life there is little comfort to be expected. A warm bath is the only application which allays the itching and irritation, though in general its effects are temporary. Greater advantage is experienced from baths of warm sea-water, or of the sulphureous waters of Harrowgate; the latter of which should be administered internally at the same time; and indeed these waters appear to be the best remedy for the complaint with which we are at present acquainted. Cold brandy, used as a wash, is sometimes successful. On the skin and linen of a patient labouring under this disease, Dr. Willan observed a number of small insects of the genus *pulex;* and remarks, that neither the patient's wife nor any of the family weres imilarly affected, nor could any of the insects be found upon them. Indeed the influence of insects in every case of prurigo is not improbable. In this case a strong solution of the hydrargyrus muriatus was the most efficacious remedy, though it was not a radical cure, for the complaint returned within three weeks; but by the same application the patient was enabled to live comfortably. Decoctions of tobacco and of the coculus Indicus were also useful. The disposition of the skin in the prurigo senilis is favourable to the production of pediculi humani, body-lice; which are bred abundantly among the inhabitants of jails, sordid dwellings, workhouses, &c. &c. and are the offspring of filthiness; but, notwithstanding the most strict attention to regimen and cleanliness in this disease, they arise and multiply so rapidly that, from their perpetual irritation, the patient endures extreme distress; but these pediculi are only found on the skin, or on the linen, not under the cuticle, as some authors have represented.

PRURI'GO PODICIS is occasioned by ascarides, hæmorrhoidal tumours, and other obvious causes, and cured by the removal of the complaints from whence it originates; but in persons engaged in sedentary occupations, it probably arises, independent of the foregoing causes, from a morbid state of secretion in these parts, founded perhaps on a decay of strength. At times, it appears to be a salutary deposition of matter, which, in a different direction, might have produced a more fatal disease. Women, who are sometimes affected with this complaint, in autumn or winter, about the cessation of the catamenia, have frequently also an itching eruption of papulæ on the neck, breasts, and back; a swelling and inflammation of one or both ears; and a discharge of matter from behind them, as well as from the meatus auditorius. Vinegar is more advantageous than any other lotion for allaying the itching; but the relief is not permanent. The unguentum hydrar-

gyri nitrati is the next in advantage; but warm or cold water, lime water, or saturnine applications, have little effect. Plummer's pill has been found beneficial; and in weak relaxed habits Peruvian bark and chalybeates expedite the cure. When a symptom of lues, an ichorous discharge, and an excoriation of contiguous surfaces, is the consequence of its neglect. The parts affected are covered with a sebaceous matter, but the ulcerations are superficial. A mercurial course requires the addition in this case of saturnine washes and ointments. A light cooling diet should be adhered to; great moderation in the use of wine, and a total abstinence from spirituous liquors. According to Dr. Lettsom in the Medical Memoirs of the London Society, vol. iii. it may be considered as frequently preventive of other diseases; as various long indispositions; a disorder of the chest, attended with a weak and intermitting pulse; vertigo, attended with strong symptoms of an approaching apoplexy; were relieved by its appearance: at the same time it may be observed, that the repulsion of the acting cause, in some cases, may be succeeded by fatal consequences; as was the case of a patient, much relieved from great debility, occasioned by frequent fits of the gout, from the appearance of prurigo podicis, who, in order to lessen the troublesome itching, applied a strong saturnine solution for a few days, and suddenly expired in his chair.

PRURI'GO PRÆPUTII is owing to an altered state of the secretion on the glans penis and inner surface of the prepuce. Keeping the parts clean by the use of warm water, or soap and water, will alleviate the complaint; and should the secreted fluid be too copious, the excess may be restrained by lotions made with the aqua lythargyri, or by applying the unguentum cerussæ acetatæ.

PRURI'GO URETHRÆ occurs in females of all ages, without any appearance of organic affection. It probably arises from a morbid state of the neck of the bladder; particularly in instances attended with pain and difficulty in making water. The use of bougies in these cases has proved successful; a remedy recommended by the late Dr. Hunter. In men it is sometimes produced by small broken hairs fixed in the entrance of the urethra, which occasion an itching, or slight stinging, particularly in walking. The removal of the hairs effects the cure.

PRURI'GO PUBIS is extremely troublesome, as papulæ, which arise on the pubes, become painfully sore if their tops are removed by scratching. These papulæ are occasioned by neglect of cleanliness, but more commonly by a species of pediculus, named MORPIO, q. v. A strong mercurial ointment, sometimes with the unguentum cerussæ acetatæ, is the best remedy.

See Willan on Cutaneous Diseases, part i.; Hafenreffer Nosodochium; Mercurialis and Lorry de Morbis Cutaneis, Valisneri Opera; Riedlin, Lin. Med. 1700.

PRURI'GO PUDENDI. See PUDENDUM MULIEBRE.

PRU'SSIAS. PRUSSIAT. Salts formed by the union of the Prussic acid, or the colouring matter of Prussian blue, with different bases. They are not used in medicine.

PRU'SSIC ACID. (See CHEMIA.) It may probably become an object of importance in the hydrology of our fluids, as it has been occasionally discovered in them, and is found in the bitter almond, laurel leaves, and the narcotic bitters of this tribe.

PSALLOI'DES. The inner surface of the fornix, which appears as if stringed like a dulcimer, from ψαλλος, *a stringed instrument*, and ειδος, *likeness*. See CEREBRUM.

PSALTERIUM (Latin, *a harp*), *lyra*, the medullary substance that unites the posterior crura of the fornix of the brain, resembling in its striæ the strings of a harp.

PSELLI'SMUS, and PSELLO'TIS, (from ψελλιζω, *to stammer*). STAMMERING, or a faulty articulation. Dr. Cullen places this local disease in the order *dyscinesiæ*, defining it a defect in pronouncing words. The species are, 1. *Psellismus hæsitans; battarismus; ischnophonia*, when there is difficulty to pronounce the first syllable or word. 2. *P. ringens; blæsitas, traulotis;* and *rottacismus*, when there is a fault in pronouncing the letter R, which is always aspirated, and as if doubled. 3. *P. lallans*; *lambdacismus;* when the letter L is sounded improperly, or in the place of the letter R. 4. *P. emolliens; traulotes;* when the harsh letters are expressed too soft, as the letter S is too frequently sounded. 5. *P. balbutiens, aranula*; when from a large tongue the labial letters are too much heard, and are often sounded instead of others. 6. *P. acheilos; mogilalia;* when the labial letters are difficultly if at all sounded, 7. *P. lagostomatum; cocatismus;* when, from a division in the palate, the guttural letters are not well pronounced. Neither complaint is ever the object of medical practice; pronouncing carefully, under the direction of a nice ear, is the only means of relief.

PSEU'DES, FALSE or BASTARD. Hence is derived the word *pseudo*, with which many names begin.

PSEU'DO A'CORUS. See IRIS PALUSTRIS.

PSEU'DO A'STHMA. An asthma excited by an abscess, or a vomica in the lungs.

PSEU'DO BLE'PSIS, *phantasma, suffusio*. FALSE SIGHT; or seeing in imagination what does not exist, or existing things differently from the perceptions of others. Dr. Cullen places this disease in the order *dysæsthesiæ*, distinguishing two species. 1. *Pseudoblepsis imaginaria*. For a variety of this, see MARMARYGÆ. 2. *Pseudoblepsis mutans;* as when an existing object appears changed. See DIPLOPIA.

PSEU'DO BU'NIAS. See BARBAREA.

PSEU'DO BU'NIUM. See BUNIAS.

PSEU'DO CA'SSIA. See FOLIUM.

PSEU'DO CHI'NA. See CHINA OCCIDENTALIS, and SUPPOSITA.

PSEU'DO CORA'LLIUM. See CORALLIUM NIGRUM.

PSEU'DO CO'STUS. See PASTINACA OLUSATRA.

PSEU'DO DICTA'MNOS. BASTARD DITTANY, *gnaphalium veterum, marrubium pseudodictamnus* Lin. Sp. Pl. 817, is a plant which resembles the horehound in its virtues, but is not used at present.

PSEU'DO HELLE'BORUS. See CALENDULA PALUSTRIS.

PSEU'DO I'RIS. See IRIS PALUSTRIS.

PSEU'DO LI'ENES. Some glands which Ruysch observed near the spleen.

PSEU'DO LO'TUS. See GUAJACANA.

PSEU'DO MELA'NTHIUM. See NIGELLASTRUM.

Pseu'do mo'la. See Mola.

Pseu'do narcissus anglicus. See Narcissus luteus sylvestris.

Pseu'do na'rdus. See Lavendula lata and angustifolia.

Pseu'do pla'tanus. See Acer.

Pseu'do pyre'thrum. See Ptarmica.

Pseu'do sa'ntalum. See Brasilium lignum.

Pseu'do seli'num. See Caucalis.

Pseu'do se'nna. See Colutea.

Pseu'do sycomo'rus. See Azedarach.

PSI'DA, or PSI'DIUM. See Guaiava.

PSILOTHRA, (from ψιλόω, *to denudate*). See Depilatorium.

PSILOTHRUM, (from the same; because it was used in depilatories). See Bryonia alba.

PSIMMYTHION, (from ψάω, *to smooth*; because it was used in cosmetics). See Plumbum.

PSO'Æ, (from ψόαι, *the loins*). *alopeces; nephrometræ; neurometeres.* The names of two pair of muscles in the loins.

PSO'AS; *lumbalis, lumbaris internus, psoas magnus*; a thick strong muscle placed obliquely on the sides of the vertebræ, running under Poupart's ligament to each thigh. It rises fleshy from the sides of the last vertebræ dorsi, and those of the upper vertebræ lumborum, and from the upper surfaces of their transverse processes; and is joined under Poupart's ligament by the iliacus internus, which lies upon the concave part of the ilium, and takes its origin from the anterior edge of the bone. It runs down before the psoas, and makes one mass with it: together they run over the head of the bone, and pass upwards to be inserted, tendinous, into the little trochanter, and fleshy into the bone a little below that process. Between this tendon and the ischium is a large bursa mucosa; and at its origin it is slightly connected with the diaphragm and quadratus lumborum.

Its office is to bend the femur, by bringing it forwards, partly to rotate it, and to turn the toes out. The kidneys often press upon this muscle, and over it runs a nerve. Those therefore who have stones in the kidneys often feel a numbness in the thigh of that side.

Pso'as, seu lumbo'rum, absce'ssus. Psoadic, or lumbar abscess, has been considered as a species of Arthropuosis, q. v. and we have admitted it inadvertently among the synonyms. The seat, the nature of the complaint, and the remedies are, however, very different. It consists in an inflammation of the muscle itself, and consequent suppuration. Mr. Pott hastily transferred it to the lymphatic glands; because he found the vertebræ in the neighbourhood usually carious; and Mr. Justamond thinks the disease wholly owing to caries of the vertebræ.

Mr. Abernethy supposes that the cellular substance interposed between the peritonæum and the loins is the common seat of these abscesses, since this substance is in greater quantity at the sides, where it connects that membrane to the psoas and quadratus lumborum muscles, than in the middle, where it forms an attachment to the spine. Where this substance is most abundant, the abscesses are most frequently formed; and for this reason we find them usually limited to either side of the vertebræ, and seldom extending across them. If matter was formed in the middle, opposite to the bodies of the vertebræ, its gravity and the want of resistance would, however, determine the descent to either side. As the peritonæum would readily yield to the protrusion of the matter collected behind it, from the separation of the cellular substance connecting it to the vertebræ, it is improbable that a caries of the bones should be the consequence of an ordinary lumbar abscess. Dr. Hunter observes, that matter is sometimes lodged in this part at the crisis of a fever, and he hath seen instances of matter proceeding from the liver into this situation, after making its way through the peritonæum. As the muscle with the cellular substance and integuments forms a thick mass, the matter seldom points outwardly on the back, but running down between the fibres, makes its way into the groin, thigh, ham, the inner condyle of the os femoris, &c. When on the right side, it may penetrate the colon which lies upon it, and thereby occasion a large discharge of matter by a stool, and possibly a fistulous sore. Of this possible event we have not seen or been able to discover a single instance in any author.

The disease invades insidiously; the pains are situated in the back, rather lower than the region of the kidneys, and usually so slight as to be mistaken for a rheumatic affection or a slight strain. It consequently proceeds with little check; for were it more early distinguished, the abscess might be often prevented by bleeding, purging, and the medicines proper for inflammations, aided by the necessary local applications. After the abscess is formed, the pain often increases, and the matter may be discharged into the cavity of the abdomen, where it would be soon fatal. It more usually, however, follows the course of the psoas muscle, and points externally a little lower than the inguinal glands, or it may pass down the thigh, dissecting the muscles, and forming sinuous abscesses. Sometimes, though rarely, the matter passes through the muscles of the back, and is discharged in the loins, or it may fall into the cavity of the back part of the pelvis. This abscess is therefore highly dangerous; since in the most fortunate circumstances it is so long in pointing out at the back, that the patient sinks under the early hectic, or from the subsequent discharge, and in the event of the other terminations the lengthened sinuses can scarcely ever be brought to heal. Usually, the first symptom that the patient feels in cases of the psoas abscess is not where the disease originates, but a pain in the lower part of the thigh of the side affected; he stands on his toes, and does not complain of the part for some time: but by attending to the circumstances from the beginning, and laying the person affected on his back, lifting up his thigh, then, between inspiration and expiration, carefully examining the part, a tumour may be often felt near or in the region where the disease originates. The leg of the affected side seems to be shorter than the other, but it is not so. In other cases the disease proceeds rapidly, sometimes very slowly; and at length appears in the groin, on the affected side; the muscles of the thigh become exceedingly emaciated, and the whole body wastes. When it proceeds thus far, the patient rarely, if ever, recovers; the symptomatic fever that generally attends closes the scene. In some cases the patient feels in an early period a slight pain in the back, so inconsiderable that he scarcely notices it; and when questioned

at a later period of the disease, often does not recollect it. If at this time he is desired to bend his body, and to raise either leg, turning out at the same time the toe, he feels a sharp pain in the middle of the back; and these symptoms occur previous to the formation of matter, ascertained by the symptoms just described. At this time there is no fever, nor any circumstance to discriminate the case: for a pain in the back on stooping is common; and perhaps the pain felt on turning out the toe is the only diagnostic.

This disease is often confounded with the abscess of the hip-joint, yet they are very distinct and different in their origin, seat, and progress. The psoas abscess originates sometimes perhaps in the lymphatic glands near the receptaculum chyli, and the vertebræ in the neighbourhood are occasionally diseased and carious; in other instances in or about the loins, if not higher in the abdomen; but, in general, it seems to be a true inflammation of the psoas muscle, and the affection of the glands, as well as the caries, to be the consequences. We know that the matter may be long retained without any ill consequences, if the air is excluded, and this is the foundation of Mr. Abernethy's method of cure The symptoms mentioned above continue for some time; but at length the disease appears externally; the limbs and the whole body waste. The hip-joint abscess originates in the hip-joint; when it attends, the leg of the affected side is shorter than the other; the pain begins in the part where the disease originates, and about the great trochanter. The most frequent situation of the psoas abscess is before or by the sides of the psoas muscles, from whence the fluid collected sometimes extends itself laterally, making its way between the three strata of abdominal muscles, and presents itself beneath Poupart's ligament, elevating the fascia of the thigh. If the patient be laid on his back, the tumour of a psoas abscess may be pressed into the cavity of the belly; but in an external one no alteration takes place, and if there be two lumbar abscesses, the compression of one will fill the other. A stone in the kidneys hath been taken for this disease; but in the former the pain is very acute the stomach often affected with vomiting, and stony concretions, occasionally blood with the urine, have sometimes passed. See ABSCESSUS ISCHIATICUS.

If an absorption take place before the abscess hath burst externally, the patient often dies; and if a fetid ichor is discharged, or the bones are affected, little or no hope remains. A symptomatic fever generally closes the scene; but in general the fever does not come on while the matter is confined, nor to any great degree for forty-eight hours after it is discharged: a circumstance probably owing to the admission of the air.

This disease, whilst in its inflammatory state, is generally neglected or mistaken, otherwise it might be easily cured, perhaps by bleeding. We recollect an anonymous communication in which it was said that very copious and repeated bleedings were a certain cure, and farther information was promised, though never received. It was probably, therefore, one successful instance exaggerated in the eagerness of youth, and of early confidence. It is not difficult to see why the early practice has been so unsuccessful. The inflammation is of that torpid kind which arises sometimes in the liver, sometimes from the brain in CONCUSSION, q. v. It proceeds without any alarming symptom, or exciting any increased activity of the circulation till it has already attained that degree which disposes to suppuration, often till suppuration has come on. From hence it has been styled strumous, lymphatic, caries of the bones, &c. while it is merely languid inflammation of a muscle constantly in action, constantly irritated. Dr. Fordyce observes, that this disorder should be treated in the same manner as inflammation of the liver, except for the situation, both in the state of inflammation and suppuration; but we know of no peculiar treatment of hepatitis, except blisters, purgatives, and calomel; neither of which succeed in the present disease. We have tried every variety of plan in vain. We have bled copiously; we have emptied the bowels freely; determined copiously to the surface by the sudorific powder of Dover, without being able to prevent the consequent suppuration. We have been told of the success of others; but when we have been able to ascertain the facts, we have found them common rheumatisms, or abscesses not deeply seated. We have seen persons recover; but there was reason to attribute it rather to the efforts of nature than the utility of medicine: and in general, keeping up the patient's strength sufficiently to enable him to undergo the discharge, by a nourishing diet and clear air, the bark, the dilute acid of vitriol, is the most promising plan; to which we would add absolute rest, and the occasional use of laxatives. Other practitioners, particularly Mr. Bell, advises evacuation as soon as the matter is formed, lest the bones should be injured. Dangerous as this complaint always is, and fatal as it is generally supposed, Mr. Abernethy has supplied some cases where success has attended his endeavours. He observes, that whilst the condensed cellular substance, which forms the cyst of an abscess, remains entire, it continues free from inflammation, and the contained pus is not altered; but whenever the abscess is opened, either by ulceration or the hand of the surgeon, a sudden and generally considerable inflammation extends itself over the whole cyst, followed by a copious discharge of pus, frequently fetid. If however, he adds, when we evacuate fluids from cavities we immediately close the aperture, we prevent the inflammation which would otherwise ensue. If, also, the matter of an abscess is discharged, its cavity becomes much diminished by the contraction of the cyst: a contraction greater in a chronic lumbar abscess than in those of a more inflammatory nature. These considerations led him to evacuate the fluids in part, and immediately close the aperture, repeating after some time the operation. The practice founded on these principles seems to have answered the intention, and it is pursued on the following plan. The pus is discharged by introducing a lancet through the integuments, then passing it obliquely for a small distance between the skin and the fascia, and by depressing the point of the lancet there puncturing the cyst. The matter should be drawn off in an uninterrupted current, if possible, and the abscess completely evacuated. The aperture should then be immediately and exactly closed, by dressing the orifice with lint, and bringing the edges into close contact with sticking-plaster. In aid of this plan Mr. Abernethy gives vomits of vitriolated zinc and copper; passes gentle electrical shocks through the abscess, and keeps up the action of the external vessels by rubbing

the surface with a solution of tartarised antimony. The second discharge of the pus has generally been postponed for a fortnight; but if the cavity soon fills again, and the newly-healed punctures are irritated by the pressure of the contained fluid, there is an absolute necessity for evacuating the contents of the abscess at an earlier period. In this second operation, he is less anxious about the obliquity of this aperture, as coagula are found in the matter, which it is necessary to discharge; and he generally delays it till the tumour is so large that on opening it there is no danger of injuring the vessels below. He sometimes thought an injection of opium useful. In this mode the matter is to be evacuated from time to time, until the abscess becomes so superficial as to be treated in the method common on such occasions.

Elements of the Practice of Physic, part ii. by G. Fordyce; Cheston's Pathological Inquiries; Abernethy on Lumbar Abscess; De Haen Ratio Medendi, pars iv.; Penciz Acta et Observationes Medicinales; Medical Observations and Inquiries, v. 193.

PSO'AS PA'RVUS. A little psoas is found on the anterior part of the great, where it exists. It arises fleshy from the upper vertebræ of the loins laterally; is inserted by a long, flat, thin tendon into that part of the os pubis where it joins the ilium. From this tendon many fibres are sent off to form a thin fascia, which covers part of the psoas magnus, and iliacus internus, gradually losing itself on the fore part of the thigh. Its use is to assist the recti abdominis in drawing the os pubis upwards, as in raising ourselves from a decumbent posture.

PSO'PHOS, (ψοφος, *crepitus*). Crackling or rattling of the bones.

PSORA, (ψωρα, Greek primitive). In Dr. Cullen's system this disease is strangely referred to the order *dyalyses*, and we need not, after this, be told that "in the arrangement of local diseases he has been somewhat careless." The itch is now known to be a local complaint; and to be cured only by local remedies. We find, however, in many authors of credit, striking accounts of the danger of repelling it, which induce us to think that the nature of the eruption has been mistaken; or it may have continued so long that the derivation to the skin has become habitual. The disease first appears in little white vesicles, which itch violently, particularly when the heat of the bed determines more powerfully to the surface. By scratching, these vesicles inflame, and assume a peculiar redness, which distinguishes the complaint. Such, however, is the variety of papulous eruptions, that it is often mistaken, and we know no language sufficiently precise to point out the real complaint. The experienced eye will alone decide, and the most experienced practitioners have, at times, been mistaken.

The disease usually first appears about the wrists, and between the fingers; then on the arms, legs, and thighs, particularly under the knee, but never in the face or head. It is sometimes attended with a scurfy, scaly eruption, and is then called the *dry itch*. A kind of itch, called *depetigo*, is said to roughen the skin; but this is a different disease. We need not add, that the itch is contagious; but it is, by no means, highly so; and merely touching the hands, or even handling any thing after an infected person, will not convey it. A very moderate share of attention will prevent it spreading through a family, otherwise cleanly and delicate.

After the psora is imperfectly cured, an eruption sometimes comes out, in little white pustules, not larger than the size of the head of a large pin, filled with a white, puriform serum. This may be called the *secondary* itch. It does not itch violently, and is not contagious.

The itch has been said to be chronical; critical; returning on the climacterics; endemic; epidemical; returning monthly, particularly during the increase of the moon: but these are apparently fancies or errors. The German authors adduce numerous instances of the fatal, or at least injurious, consequences of its suppression; and among our own countrymen, Dr. Bissett and sir William Fordyce have related some instances of the same kind. Hundertmark advises a recent infection to restore it when suppressed; and we have been informed that in some private receptacles of lunatics it has been designedly conveyed to increase the circulation in the extreme vessels.

The causes of psora, adduced by authors, are numerous and ridiculous; among the rest are the fancies of the mother and matrimony. When an acarus was found in the pustules, it was generally believed to be the cause of the complaint; but even at first this source was violently combated: and we apprehend that some microscopical authors of credit have lately sought for the insect, without success. It is, however, highly probable that this is the cause; though, if it be so, we cannot easily account for the spasms, convulsions, &c. said to arise from its suppression, nor for the change of its appearance when imperfectly cured. The question is of little importance, since its remedies are so well known.

The cure by sulphur is certain; but this is often inconvenient, and it is necessary to find less obnoxious remedies. The root of the white hellebore is often highly useful, and a solution of muriated mercury will frequently cure it. The tar ointment, with kali, or alum, and a small proportion of sulphur, is said to be quickly effectual; and this is nearly the application employed by those who profess to cure it in a few hours and really succeed. We have seen an inveterate itch cured within twenty-four hours by similar means, for the professed time of six or eight hours is to be understood as the period of the application only.

A very effectual ointment is that recommended by sir John Pringle, consisting of four parts of axunge, two of flowers of sulphur, and one of the root of white hellebore, *or* of sal ammoniac. A very elegant and effectual wash is the following. A dram of muriated quicksilver dissolved in half a pint of water, adding two drams of crude sal ammoniac and half an ounce of nitre. An ounce of the powder of white hellebore may also be boiled in a pint and a half of water; and to a pint of the strained liquor two ounces of spirit of wine, and two drams of alum, may be added. The same medicines are sometimes formed into an ointment, and each is effectual. The solution of muriated quicksilver cannot be discovered by the most intimate acquaintance, and scarcely in any instance fails. The hands are washed with it night and morning, and a little applied with a clean sponge by degrees to the other pustules. It is safer to use it gradually, and precipitation is unnecessary, as after a day or two there is little danger of infection.

About the year 1762, Buchner published his dissertation, at Halle, on the internal use of oil of vitriol in

some species of itch; and Dr. Gahn, in the Edinburgh Commentaries about ten years afterwards, introduced this remedy to the English practitioners. Stoll in his Lectures, and Smith in the first volume of the Medical Communications, also spoke of its efficacy; but the origin of the practice is in Salas, in his Anatome Vitrioli, who used vitriolated salts joined with the ointment of tobacco. Dr. Percival ingeniously conjectured that it became sulphur in the blood; but sulphur internally is of little use, and though Faber recommends the spirit of vitriol externally, it has been seldom employed.

The other remedies which have been employed are numerous. A decoction of arsenic with sulphur is recommended in the Memoires de Chirurgerie; hemlock (Storck, Quarin, and Locker); bitter almonds (Zacutus Lusitanus); alum, kali, sea-water (Russell); antimony (Brisbane); cold and warm bathing; the ashes of the soles of old shoes (Bartholine); ants (Kircher); diuretics (Linck, in the Edinburgh Commentaries); tobacco; opium (Rulandus); plumbago joined with oil, and used externally (Memoires de Medecine); a bath of a decoction of oak-leaves; human and cow's excrement variously prepared; with many others, doubling at least the number of those mentioned. In turning over some old authors with this view, we were greatly struck with the numerous and high commendation of Jasser's ointment, and at last discovered its nature. It consists of white vitriol, bay-berries, and oil. We may add, that Vogel, in a dissertation published at Gottingen, has suggested some doubts of the safety of sulphureous applications, but with little reason.

The *dry itch* is not affected by external medicines, and is only relieved by mercurials, with the Lisbon diet-drink, &c. It is, in fact, a species of PSORIASIS, q. v. The secondary itch, which we have not found described in any author, is cured by internal medicines of a similar kind. It is by no means an obstinate complaint.

After this full account of the opinions and practice of authors, ancient as well as modern, any particular references are unnecessary. Indeed, had we found any full account of the disease and its remedies this article would not have been so extensive.

PSORIA'SIS. This term has been limited to the species which affects the scrotum, rendering it unusually hard; but Dr. Willan has extended its use, and under his auspices we shall now describe it.

The disease which Dr. Willan has established under this denomination is confounded by ancient authors, under the title of psora; but it consists in scales, and is neither a papulous nor a pustular eruption, so that it is, with strict propriety, separated. The term occurs in the ancient Greek authors, and is confined to scales in different parts, either at the corners of the eyes, or in the scrotum; and a similar change was supposed to take place in the bladder, when the urine deposited a branny sediment. It is defined by Willan, a rough and scaly state of the cuticle, sometimes continuous, sometimes in separate patches of different sizes; but of an irregular figure, generally accompanied with fissures of the skin. We have considered it as a variety of lepra; for as it recurs at different periods, and is attended with some general complaints, it may form a link between lepra and pellagra. It is more strictly the dry itch, which, in compliance with authors, we have mentioned under the last article. The varieties described by Dr. Willan are the *psoriasis guttata, diffusa, gyrata, palmaria, labialis, infantilis,* and *inveterata.*

PSORIA'SIS GUTTATA consists of small, distinct, irregular patches of laminated scales, in a form sometimes angular, at others in serpentine processes, distinguished from lepra by the form; for in the latter the patches are usually circular, or approaching to a circle. The scale is thin, easily detached, leaving a red, shining surface on the skin. They appear on almost every part of the body; but in the face are seldom covered with scales. In children it is preceded frequently by a slight general disorder, and then spreads over the body in two or three days. In adults it commences in the extremities, and proceeds gradually to the other parts, chiefly in the spring, succeeding violent pains in the head, stomach, and limbs. The patches disappear often in summer, leaving the skin of a dark red, sometimes of a livid, colour. A similar eruption attends lues; but these patches are more nearly circular, and their colour darker. They are scarcely elevated above the skin till the scales appear, and the circumference is often higher than the centre. The syphilitic eruption appears chiefly on the forehead and breast; on the inside of the fore-arm and thighs. It is singular that the scales often disappear, while the principal disease remains; but after using mercury they soon drop off. In the negro the eruption is whitish; and the skin below, when the scales drop off, is unusually black, slowly recovering its natural hue.

Psoriasis diffusa spreads into large, irregular, reddish, rough, chappy patches, with scales interspersed. It usually commences with numerous minute asperities of the cuticle, scarcely visible, though easily distinguished by the touch. On these small distinct scales are formed, adhering by a dark central point, while the edges appear white and detached. After a few weeks the intervening cuticle becomes rough and chappy, raised and wrinkled, the lines of the skin sinking in deep furrows. Sometimes a large portion of the skin assumes the appearance described, without any papulæ preceding; and at other times the patches are at first separate, not unlike those of the former species. The lichen simplex, after frequent returns, often assumes the appearance of this disease.

The cheeks, the chin, upper eyelids, and the corners of the eyes, the temples, the external ear, the neck and fleshy parts of the lower extremities, and the fore-arm, are chiefly subject to this eruption. The fingers are nearly surrounded by loose scales; the nails crack and exfoliate superficially. In general, it affects the different parts successively, sometimes returning to its first situation. This disease is attended with a burning heat, and a troublesome itching, especially at night, and has little disposition to form crusts like lepra. The chaps on the skin are sore; and when the scales are removed, the parts below are red, smooth, shining, and elevated. The deep furrows of the cuticle are also covered with a slight scaliness. When the surface is excoriated, it discharges a thin lymph, mixed with some drops of blood, and concretes into a thin dry scab, succeeded by a white scaliness, spreading in different directions. When, from a well-directed plan of cure, the scabs are removed, the cuticle is at first thin and shrivelled, but soon recovers its former texture.

The P. DIFFUSA is often preceded by want of appetite, headach, pain, and sickness of the stomach, cramp,

coldness of the extremities, with universal languor and debility. These symptoms gradually disappear; but they precede every return of the complaint. Its continuance is usually from one to four months, sometimes longer; but in such cases there is an exacerbation about the usual periods of its return. When it disappears in the summer, the returns differ greatly in their degree and violence. Sometimes it is a single patch only.

The *baker's itch* is of this kind, extending on the back of the hand from the knuckles to the wrist. The fissures of the skin are most numerous near the joints: they are often highly inflamed, and painful, but no discharge proceeds from them. The back of the hand is swollen; and, when the disease has advanced, is reddish and glossy. The furrows of the cuticle are filled with slight scales. This variety usually disappears about Midsummer, and returns in the cold weather, or about the beginning of the year: nor is it constant; for, after having once appeared, it is often absent for three or four years; and when the business is discontinued, it does not soon disappear. The occupation is, therefore, only an exciting cause; and it depends on the hygrometrical affinity of flour, which absorbs moisture rapidly. The *grocer's itch* is of a different kind, and strictly a pustular disease.

The *washerwoman's itch* arises probably from the soap dissolving the oily matter, which softens the skin. It generally appears on the hands and arms, rarely, except from predisposition, on the face and neck. It forms scales, separating in large circular flakes, sometimes quadrangular. Syphilitic psoriasis seldom assumes this form, except from the coalescence of the patches of the former species.

Psoria'sis gyrata appears in stripes approaching a spiral form, sometimes resembling earth-worms; the deepened furrows of the cuticle giving the annulated appearance. Slight scales are separated from the surface, but no incrustations are formed. These serpentine patches are often singularly uniform on each side; and a smaller degree of the complaint, affecting young women and children, is often confounded with that form of herpes styled the ring-worm.

This eruption has also its exacerbations or returns, and approaches the *p. diffusa* by irregular patches on the face and extremities, while the rings occupy the trunk. It continues frequently for months before it desquamates, and is usually preceded by headach, pains in the limbs, debility, and emaciation. Lues sometimes assumes this form; and when the scales separate, the skin below is of the dark colour usual in syphilitic eruptions; sometimes the rings suppurate, leaving a centre of sound skin.

Psoria'sis palmaria begins by a scaly patch, and at last occupies the whole palm, extending in a slighter degree to the inside of the fingers and the wrist. The surface is rough, the colour brown or black, and the cuticular furrows deep, divided at the bottom longitudinally, so as to bleed on extending the fingers. A sensation of heat and stiffness attends this disease, and it is usually most distressing in winter and spring. Sometimes it disappears, or occasionally remits only in summer. It is the disease of shoemakers, braziers, tinmen, and silversmiths, usually attributed by the last to the vitriolated salts or mineral acids, and by shoemakers to the wax. It sometimes comes on after delivery, occasionally alternates with paroxysms of gout, and chiefly affects debilitated constitutions. It sometimes attacks the soles of the feet and the prepuce, occasioning phymosis, sometimes requiring circumcision. It is also a symptom of lues; but the venereal patches are distinct, white, and elevated, nearly of the consistence of a soft corn. The fissures usually discharge an offensive fluid; but when this disease affects the soles no discharge takes place. The fingers and toes are never affected in the syphilitic form of the *p. palmaria*.

Psoria'sis labialis. This form of psoriasis affects the prolabium; the scales are large, and their edges loose, while the centre is fixed. The new cuticle formed under the scales soon becomes dry and shrivelled, cracks and exfoliates, giving way to another layer of the same kind. It is of consequence to distinguish this variety from the chaps produced by frost; and it may be known by its occurring at different seasons, though often aggravated by frost. The under lip is most frequently affected; and those who have full lips are chiefly subj ct to the complaint.

Psoria'sis scrotalis resembles the other varieties, and differs only in its seat.

Psoria'sis infantilis affects children from the age of two months to two years. The general appearances are those of the *p. diffusa*; but it is sometimes succeeded by inflamed pustules, which suppurate, and often accompanied by scabs in the internal nostrils, which occasion snuffling. When the eyelids are affected, the eyebrows and eyelashes fall off. The scaly patches are interspersed with smooth, shining elevations of the cuticle, a little flattened at the top, having a roundish base: they are sometimes reddish; but often retain their usual colour. When the eruption appears on the nates, it occasionally suppurates, and resembles a venereal tubercle. In general this variety resembles the scaly patches which occur as a secondary symptom of syphilis, and is only distinguished by the concurrence of other symptoms of the latter disorder, assisted by the circumstances which afford suspicion.

Psoria'sis inveterata. The same disease in a more violent degree, often covers the whole body, except a part of the face, sometimes the palms of the hands and soles of the feet. The skin is so stiff as to impede motion; and the scales are constantly separating so as to occasion a most troublesome itching. The nails of the fingers and toes become convex, fall off, and are succeeded by others of the same form. The joints of the thumb and fingers are sometimes enlarged, and contracted, or bent back. Painful excoriations are produced by the ligatures of the clothing, or the attrition of contiguous surfaces. Sometimes the excoriations are extensive, a thin lymph is for a time discharged, and the cuticle which succeeds is dry and horny, separating from time to time in large pieces. It sometimes attacks young persons, but it is then less violent. The p. diffusa and prurigo senilis sometimes degenerate into this complaint.

The psoriasis is often hereditary, but never infectious. It most commonly attacks those who are neither of a sanguine or a melancholic temperament, but who show marks of each: the weak and irritable are most liable to it, and women rather than men. It is always apparently connected with some disorder in the con-

stitution, often with gout and rheumatism. When not thrown out, as in cases where it is hereditary, we have found the persons die young of anomalous diseases, styled hectics, though often a very different complaint; and Dr. Falconer has found convulsions, constant vomiting, with loss of strength wholly irrecoverable, from the repulsion of the eruptions.

The causes assigned have been errors of diet, particularly eating dried and salted meats, crustaceous fish, pork; or, on the other hand, acids wines and fruits, and the unseasonable use of the cold bath. The only distinct cause, however, that can be assigned is cold, applied either externally or internally, while the body is heated. In general it affects those who are subject to frequent alternations of heat and cold; but this cause is probably only an exciting one. The seminium of the disease is apparently in the constitution.

Dr. Willis recommended bleeding, cathartics, and alteratives, as acidulous chalybeate waters, &c.; the expressed juices of several plants; whey, either alone or impregnated with the juices of succory, fumitory, and sharp-pointed dock; decoction of the woods; preparations of iron, and mercury.

Dr. Willan observes, that he has never seen a case in which bleeding or purging could be properly applied: and we own that these remedies are so distant, in our opinion, from the nature of the disease, that we have never thought of using them, even when psoriasis affected the eyes. The numerous antiscorbutics are too "weak ministers" to be relied on.

Guaiacum wood, willow, sarsa, elm-bark, sassafras, juniper tops, burdock, mezereon, and the dock roots in decoction, are useful auxiliaries; and the dock, with the sarsa and mezereon, when long continued, has often greatly relieved the complaint. It is seldom radically cured. When the disease is strikingly connected with debility, the chalybeate waters are often useful in restoring tone; but the chief benefit is derived from the sulphureous springs. Every sulphureous water seems to have been useful, in proportion to the strength of the impregnation. Mercurials, in Dr. Willan's hands, have not succeeded. We think that, with the mezereon and dock root, we have been more fortunate. We mean not to say that the patient has been secure from a relapse; for that perhaps would not be a fortunate termination; but the return has been protracted, and the disease in its recurrence rendered milder.

The three first species, after an emetic and a purgative of calomel, are relieved, according to Dr. Willan, by the fixed alkali, assisted by a light moderate diet, frequently washing with tepid water, abstinence from fruits, acids, as well as fermented liquors. If more violent, the free use of antimonials, the warm bath, with repeated friction, and the sulphureous mineral waters, are necessary. "The decoctions of elm-bark, sarsaparilla, dulcamara, &c. have also their share of utility." When mezereon has been successful, it is said to soften the whole patch, or to heal it from the circumference towards the centre. When removed by other means, the salutary change chiefly occurs in the centre.

The *psoriasis inveterata* sometimes affects the shin-bone, producing an ulcer not deep, but with an uneven basis, and a red, thin, smooth edge, liable to bleed from slight impressions. This ulcer itches violently, and discharges a glairy fluid, heals slowly, or soon breaks out again. It is often healed by applying ointment composed of an ounce of calaminaris cerate, with a scruple of the unguentum hydrargyri nitrati. Should the skin afterwards remain dry and brittle, the leg should be held over the steam of warm water, and oiled silk be worn round the leg. The latter directions are highly proper also in the *p. palmaria.*

The mildest, softest applications are only useful in the *p. labialis.* In the *p. scrotalis,* besides frequent bathing and a constant attention to cleanliness, attrition should be prevented by an ointment composed of three parts of unguentum ceræ, and one of the unguentum hydrargyri nitrati.

The *p. infantilis* is relieved by antimonials and warm bathing. When considerable excoriations take place, they should be defended by the common sedative applications.

We have thus followed Dr. Willan, with only occasionally interposing some slight remarks. We shall add however, shortly, the result of our experience. In general we have found mercurials in small doses, long continued, highly serviceable in this disease; and the best form has been Van Swieten's solution of muriated mercury. In slighter cases, the pills of Plummer, especially if made, as formerly suggested, by adding the calomel after the rest of the mass was formed, have completed at least a temporary cure. This has been greatly assisted by decoctions of guaiacum with mezereon; of sarsa with mezereon, or of the water-dock alone: of either a pint should be drank daily, and every other morning a dose of the magnesia vitriolata, or any other neutral, be interposed. The diet is to be almost exclusively confined to milk and vegetables. In some instances the muriated lime has been successful; and the oxygenated salts, when the disease attacks elderly persons, are often useful. We have not found the mineral acids peculiarly efficacious, though the nitric has appeared sometimes salutary.

Relapses have been prevented by the same diet, interposing the salt, or salt water, every other day, with the utmost attention to bathing, and frequently washing the parts formerly affected with warm water. We mean not to represent the use of the mercurials with the decoctions just mentioned as infallible, for they often fail; but we think this plan has been more useful than any other which has been suggested.

PSO'RICA, (from ψωρα, *the itch*). Medicines for the itch.

PSOROPHTHA'LMIA, (from ψωρα, and οφθαλμια, *an inflammation of the eye*). An itch or scurf of the eyelids, particularly in their edges, which renders them sore, and sometimes scabby. It is often a symptom of scrofula, and is at times joined with an herpetic eruption; whence the distinction of the two species *p. crustosa* and *herpetica.* See TRACHOMA and OPHTHALMIA TARSI.

PSUCHAGO'GICA, (from ψυχη, *mind,* and αγω, *to move*). Medicines which recal life in an apoplexy or syncope.

PSUCHROLU'SIA, (from ψυχρος, *frigidus,* and λεω, *lavo*). BATHING IN COLD WATER.

PSYCHO'TRIA EME'TICA, vel HERBA'CEA. See IPECACUANHA.

PSYDRA'CIA, (ψυδρακες, *pustulæ*). Small tubercles on the head which resemble pustules, and corrode

the skin. Trallian describes them as small watery pustules, which, when seated on the head, are called *psydracium*. Dr. Willan assigns this name to minute pustules, irregularly circumscribed, producing but a slight elevation of the cuticle, and terminating in a laminated scab. Many of these usually appear together, and become confluent. When mature, they sometimes contain pus; but, in general, in the earlier stages, after breaking, they discharge a thin watery fluid.

PSY'LLIUM, (from ψυλλος, *a flea;* supposed to destroy fleas). FLEA-WORT, *pulicaris herba crystallion; cynomoia, plantago psyllium* Lin. Sp. Pl. 167. It grows wild in the warmer parts of Europe, and is raised in our gardens. The seeds which have formerly been brought from the south of France are small, smooth, slippery, of a shining brown colour, of an oblong flattish figure, supposed to resemble a flea, whence the name of the plant, and perhaps its supposed virtues.

A dram of the seeds renders a pint of water moderately mucilaginous and gently laxative: they have been used as demulcents. See Raii Historia; Lewis's Materia Medica.

PTA'RMICA, (from πταιρω, *to sneeze*, because it provokes sneezing), *pseudo-pyrethrum, dracunculus pratensis, draco sylvestris, sternutatoria,* SNEEZE-WORT, BASTARD PELLITORY, *achillea ptarmica* of Lin. Sp. Pl. 1266, is a plant with long, narrow, serrated leaves, and radiated discous flowers, set in umbels on the tops of the branches. It is perennial, grows in moist shady grounds, and flowers in June, &c. throughout the summer. The roots have the hot pungent taste of pyrethrum, with which they agree in their pharmaceutic and medical properties. See Lewis's Materia Medica.

PTE'RIS, (from its resemblance to πτερον, *a wing*). See FILIX.

PTE'RNA, (πτερνα, *the bone of the heel*). See OS CALCANEUM.

PTEROCA'RPUS. *Santolinus.* See SANTALUM RUBRUM.

PTERY'GION, PTERY'GIUM, (from πτερυξ, *a wing*). A FILM ON THE EYE, called a WEB. (See ALBUGO, UNGUIS, and OPHTHALMIA, p. 309.) There are four varieties of this disease, viz. the *p. ungula*, thin, transparent, and cineritious, apparently growing from the semilunar membrane; *p. crassum; pannus*, thick, and of a red colour, stretching over the cornea; *p. malignum*, dark and painful, supposed to be cancerous; *p. pingue*, a soft, fatty substance, without pain, near the external angle of the eye. Extirpation is the most certain means of relieving those species which are troublesome; but Richter recommends bringing on a discharge by means of nitrated mercury (Observationes Chirurgicæ, fas. iii. No. 1.) See Richter Commentar. Nov. Gottingen, vol. viii.. In Celsus, lib. vi. cap. 19, it means a disorder of the nails, resembling a caruncle, accompanied with great pain. To these a mixture of alum and honey, in equal parts, is applied.

PTERYGO'DES, (from the same). An appellation of those whose chests are narrow and flat, so that their scapulæ are prominent, like wings. Hippocrates.

PTERYGOIDE'US EXTE'RNUS, vel MI'NOR, (from the same), *alare externum*, because they rise from the wing-like processes of the os sphenoides, first described by Fallopius. They rise also from the neighbouring parts of the os sphenoides, and are inserted into the neck of the condyle of the lower jaw, and into the cartilage of the condyle, which is hollowed, to move upon the tuberosity of the os temporis. The part not concealed by the pterygoideus internus is covered by a membranous expansion, originating from the inner edge of the glenoid cavity of the lower jaw, immediately before the styloid process of the temporal bone.

PTERYGOIDE'US INTE'RNUS, vel MA'JOR, rises from the cavity between the lamella of the processus pterygoideus, and is inserted into the inside of the angle of the lower jaw. It lies on the inside of the lower jaw, almost as the masseter does on the outside, being of the same figure, but smaller and narrower. When these muscles act together, they move the lower jaw horizontally forwards; when singly, forward, and to the opposite side.

PTERYGOIDE'US PROCESSUS, (from πτερυξ, *a wing*, and ειδος, *form*); *aliformis*. See SPHENOIDES OS.

PTERYGO-PALATI'NUS. See SPHENO-PTERYGOPALATINUS.

PTE'RYGO-PHARYNGÆ'I, (from πτερυξ, and φαρυγξ), the name of the *cephalo-pharyngæus*. In the edge of the internal alæ of the apophyses pterygoidæi these muscles rise, then run backward, and are inserted into the linea alba of the pharynx. See PHARYNX.

PTE'RYGO-STAPHYLI'NUS SUPE'RIOR, (from πτερυξ, and σταφυλη). The external portions of the spheno-salpingo-staphylini.

PTE'RYGO-STAPHYLI'NI INFE'RIORES. These muscles are very small, and inserted at one extremity into the uncus pterygoidæus, and by the other into the septum, near the uvula.

PTILO'SIS, (from πτιλος, *bald*). A person who hath lost his eyelashes. A baldness of the eyelashes, from a callous thickening of the edges of the eyelids, so that it is a complication of a madarosis and lippitudo.

PTI'SANA, (from πτισσω, *to decorticate*, or *bruise*). *Ptisan*, barley deprived of its hulls by pounding, which was formerly effected, after macerating it in water, by drying. It was ground into meal, made into balls, by first boiling and then drying it to a due consistence.

Ptisan was also made of other kinds of grain; and the name of the grain was added, *cape hoc ptisinarium oryzæ*. Hor.

These balls, or ptisans, were boiled in from ten to fifteen times their quantity of water, until the meal swelled: then they added a little vinegar, sometimes oil or animal fat, and aniseseeds, occasionally salt. The ptisan thus boiled and strained is called the cream of ptisan. When not strained, it is called entire ptisan; when diluted, gruel, or juice of ptisan. Hippocrates styles it *adipson*, because it cures thirst.

PTO'SES. Tumours caused by protrusion; *phalangosis trichia*.

PTO'SIS, (from πιπτω, *to fall*), is a descent of the upper eyelid, from a palsy of the muscles which elevate it, or inflammatory or erysipelatous tumours which depress it. It is the *blepharoptosis genuina* of Sauvages: in the London Medical Journal, iv. 340, a case is described, where a complaint of this sort returned at irregular intervals. Smoking tobacco always induced it, and putting on a pair of spectacles not only carried it off, but prevented its return. After cleaning the primæ viæ, asafœtida and valerian were given, and a blister applied

to the forehead, near his eyebrows. This treatment completely succeeded. In another case the disease was occasioned by an injury done to the levator palpebræ superioris, so that the patient was unable to raise that portion of the eyelid. The disease was cured by dividing the lacerated fibres with a knife. In a third instance the complaint was purely spasmodic. The patient was a young woman twenty years of age, who was subject to occasional spasms, not only of her eyelids but of the other muscles of her face. In this case the affection yielded to musk and small doses of emetic tartar. We have twice seen it without being able to attribute it to any particular cause, and it yielded to the common stimuli applied externally.

PTO'SIS IRIDIS. A protrusion of the iris through a wound of the cornea, sometimes in weak states independent of a wound, of which we once saw an instance. It appears in the form of a blackish tubercle, and the laminæ of the cornea rise around it in an external bur. When long continued it is attached to the edges, and becomes callous.

PTYALIS'MUS, (from πτυαλιζω, *to spit*). A frequent and copious discharge of saliva, generally arising from mercury. (See SALIVATIO.) Dr. Cullen defines it a flux of saliva, adding, that if ever idiopathic it is from relaxation. When originating from mercury, it is continued from relaxation, and may then be considered as a separate disease. It is very obstinate, and yields only to time, and to tonics used internally, or astringent gargles. Sometimes blisters behind the ears seem to be useful. A singular case of a troublesome ptyalism being cured by chewing dry bread, and swallowing it, is related in the London Medical Transactions, vol. ii. p. 34. Nineteen symptomatic species are enumerated.

PU'BA. See CASSADA.

PUBERTAS, (from *pubes*). The period of puberty is that in which the genital organs of each sex begin to evolve, and assume that organised structure which fits them for their respective functions. It is a period of great delicacy, and sometimes danger, though boys suffer much less than females. As in all other considerable changes, before the balance of the circulation is fairly established, there is considerable irritability, and all nervous diseases are increased: some, particularly chorea, often at this time appear. The period commences in boys at about thirteen, and in girls at eleven; but is scarcely completed in two years. Instances of peculiar precosity in this respect appear in the collections of wonders; and the accounts of Boset in the Journal des Savans, and of Geoffroy in the forty-third volume of the Philosophical Transactions, are scarcely more credible.

PU'BES, (from βουβων, *the groin*). The private parts covered in the adult with hair. The down also upon plants.

PU'BIS INTERRO'SSEUM LIGAME'NTUM is a strong triangular ligament, fixed by two of its edges in the inferior branches of these bones, so far as their symphysis; the third and lowest edge is loose: this whole membrane, the middle of which is perforated, is stretched very tight between the two bones, and under their cartilaginous arch, to which it adheres very closely.

PU'BIS O'SSA, the SHARE BONES (*ephebæon; ischion; pecten; pubes, episeion*), are situated in the middle, anterior, and internal part of the os innominatum. On their superior part is a ridge, which runs on a continued line with another of the os ilium, distinguishing the cavity of the belly from that of the pelvis. Between the pubes and ischium is the foramen magnum ovale, in the recent subject filled up with a ligament. The symphysis of the os pubis is composed of two cartilages and one ligament; the two cartilages cover the surface of each bone, and the ligament is interposed. Hunter in the London Medical Observations and Inquiries, vol. ii. p. 333.

As a substitute for the Cæsarean operation, the section of the symphisis of the pubis has been recommended by the French accoucheurs, the advantages and inconveniencies of which we have shortly noticed. We must add, however, their method of performing the operation, for those who differ in opinion from us may choose to imitate it. The instrument used on this occasion is a common dissecting knife with a convex edge, a little blunt in the point, lest it should injure the bladder, and thin, that it may have a finer edge. The woman is placed on her back at a height convenient to the accoucheur; the thighs somewhat opened, and the mons veneris shaved. A catheter is then introduced into the bladder. The inferior part of the integuments are drawn down, and the incision begun about two or three lines above the pubes. The first incision must not be carried farther than the middle of the symphysis. From this first incision little hæmorrhage will follow, and the cartilage will be fully exposed. By cutting in the middle of the symphysis, the suspensory ligament of the bladder will be partly divided, and in procuring the necessary separation it will be lacerated, which may occasion an incontinence of urine. There are cases in which this complaint can be attributed to no other cause than the laceration or relaxation of the ligament of that viscus, so that we must avoid cutting in the middle of the cartilage. If the division is made on either side, part of the suspensory ligament of the bladder will be preserved; and if the bone on that side be touched, a more speedy re-union will be effected; and the left pubes appearing after the section to recede more than the right, there will be a greater opening on that side. The neck of the bladder also, and the fundus uteri being rather more inclined to the right, lead us to choose the left side. Directing, therefore, the catheter to the right, the operator must cautiously divide the symphysis on the left side, when it is said the pubes recede, in a greater degree as the thighs are more expanded. If the separation is very sudden and considerable, the interior ligaments will be distended too suddenly; it is, therefore, adviseable to keep the thighs moderately open during the operation; and afterwards to widen them gradually, until the necessary separation is obtained.

After the operation it is recommended to turn the child, and deliver it immediately, as every other method would increase irritation and inflammation. The integuments, which were greatly distended during pregnancy, now will subside, so as to cover the symphysis. A bladder must be fitted to the end of the catheter, in order that the patient may not stir when she wants to discharge her urine, and in case the bladder hath been injured, that the wounded part may heal without any additional irritation.

For the wound, nothing more is necessary than dry lint moistened with brandy, and discutient embrocations upon the posterior articulations of the pelvis. A bandage must be applied, to keep the parts in contact, to which there must be two tapes fastened, to be conveyed between the legs, and tied before. The mother should suckle the child for eight or ten days, and laxatives with tonics may then be directed according to circumstances, with a constant attention to keep the parts at rest.

The idea of this operation was suggested by an observation, most probably unfounded, that the bones of the pelvis are connected by a substance which, during the latter period of pregnancy, swells and softens, and that if cut through, the two fore parts of the pubes recede from each other to the distance of from two inches to two inches and a half, diverging proportionally forwards.

When the diameter of the brim of the pelvis from the sacrum to the pubes measures from two inches and a half to three inches and a quarter, this operation is recommended.

In a case recorded by Dr. Leake the space gained *in the dead subject* was considerable; but on more careful and exact enquiries neither the space gained nor the facility of the operation were found to counterbalance the inconveniencies: the former was inconsiderable, and the operation is no longer attempted.

See Practical Observations on the Child-bed Fever, by Dr. Leake, edit. 5. page 238—255. Comparatio inter Sectionem Cæsaream et Dissectionem Cartilaginis et Ligamentorum Pubis in Partu, &c. Auctore C. C. Siebold, M.D. London Medical Journal, vol. iv. p. 141. Bell's Surgery, vol. vi. p. 143. Walter De Dissectione Synchondroseos Ossium Pubis in Partu difficili.

PUBESCE'NTIA, (from *pubesco, to bud forth*). In botany the arms of plants, by which they are defended from outward injuries.

PUDE'NDA, (from *pudor, modesty*); the GENITALS; *aoidea; patrimonium; naturalia.* See GENERATIO.

PUDE'NDI ABSCE'SSUS. See ALÆ.

PUDE'NDI ARTE'RIA. See PUDICA ARTERIA.

PUDENDA'GRA, (from *pudendum*, and *αγρα, captura*); *cedma.* In this disorder there is a discharge of a purulent ichorous matter from the vagina, supposed to produce inflammatory symptoms in the penis after cohabitation; the infection, however, is soon removed by bleeding, and some cooling laxatives. It is an affection of the vagina alone in the beginning, the other parts afterwards suffer. The predisposing cause is a too rigid chastity, and the more immediate cause an indulgence of the venereal appetite, at times when the uterus is disordered. An excessive flux of the menses, and the fluor albus, aggravate the pudendagra, which is not properly confirmed until the uterine nerves, having entirely lost their sensibility, are no longer capable of distributing the menstrual flux. Excessive venery hastens the insensibility of the uterine nerves.

Such are the accounts of authors, who seem to have had no distinct ideas, and were consequently unable to communicate any. A disease of this kind we have never seen; and can distinguish, in these confused descriptions, only a leucorrhœa with a more acrid discharge in the intervals of too copious or too often repeated menstruation.

On dissecting those who have died whilst labouring under the pudendagra it hath been observed, that the parts leading to the uterus were particularly relaxed, and that the uterus itself was enlarged by schirrous and other tumours.

PUDENDO'RUM CA'RIES. See CHANCRE.

PUDE'NDUM MULIE'BRE, *hortus; porcus; boubalios; byssus; caverna; amphicaustis; gynæcomystax.* See GENERATIO.

The pudendum muliebre is subject to a complaint somewhat analogous to the prurigo scroti, bearing a similar name. (See PRURIGO.) It is situated in the labia pudendi, and entrance of the vagina; and often attended with the appearance of tension and fulness in those parts, and sometimes with inflamed itching, papulæ on the labia and mons veneris. From the strong and perpetual itching inconceivable distress arises; and venereal sensations take place, from the constant direction of the mind to the parts affected. Deep ulcerations seldom occur, but aphthæ on the labia and nymphæ are not uncommon. Women after the fourth month of pregnancy often suffer greatly by this disease; sometimes succeeded by extensive ulcerations, which have destroyed the nymphæ, and produced a fatal hectic; but this occurs very rarely. In general the complaint has some intervals or remissions; the aphthæ usually disappear soon after delivery at the full time, or a miscarriage. Saturnine lotions, saline solutions, lime, water, vinegar, and oily emulsions, with fixed alkalis, a decoction of lintseed, with poppy heads, or tinctura opii, afford temporary relief; but half a scruple of corrosive sublimate, dissolved in half a pint of lime-water, forms the most certain remedy, when applied daily; postponing its use if there are painful fissures of the skin, till they are relieved. See Willan on Cutaneous Diseases.

PUDE'NDUM VIRI'LE; *genitura.* See GENERATIO.

PU'DICA, vel PUDE'NDA ARTE'RIA, comes out between the pyriform muscle and the spine of the ischium; runs downwards between the two ligaments, the one of which comes from the tuberosity of the ischium to the sacrum, and the other from the spine of the ischium to the sacrum, on the inside of the tuberosity. In its progress it gives ramifications to the anus, the *external hæmorrhoidal*, and then goes to the crura penis.

PU'DICÆ EXTE'RNÆ ARTE'RIÆ. See CRURALES ARTERIÆ.

PU'DICÆ EXTE'RNÆ VENÆ. As the crural vein passes from under the ligamentum Fallopii, it sends out branches to the inguinal glands, the musculus pectineus, and the parts of generation; these are called *pudicæ externæ*, and they communicate with the *pudicæ internæ.*

PU'DICÆ INTE'RNÆ VENÆ. The veins that convey the blood from the parts of generation; branches from the venæ hypogastricæ.

PUERI'TIA, (from *puer, a child*). See ÆTAS.

PUERPERIUM, (from *puer, a child*, and *pario, to bring forth*). DELIVERY. Much care is usually necessary in these circumstances; for lying-in women are liable to many disorders. Immediately after delivery, every thing wet should be removed, and dry warm linen in readiness for her use; supplying fresh-

when necessary. It is generally necessary to keep the breasts warm, by means of flannel cloths, until the milk flows freely. The room should be supplied with free though not cold air; and during the first three or four days the diet should be thin, but not stimulating. The common allowance is caudle, oatmeal boiled in water until it is of the consistence of a thin jelly, and then rendered agreeable to the palate by the addition of a little sugar, sometimes ale; more generally wine is added, but if the stomach is subject to acidity, a little brandy is preferable. Rest must by every means be promoted; and, if required, opiates may be given for this purpose. Costiveness should be guarded against, though a diarrhœa at this time is not favourable. The child should be applied to the breast in about ten or twelve hours after its birth, if the mother intends to suckle it; for the sooner the secretion of milk can be promoted, the less danger will there be of a milk-fever, or an abscess. See PARTURITIO, and the following article.

PUERPERA'LIS FE'BRIS, (from *puerpera, a lying-in woman*). The PUERPERAL or CHILD-BED FEVER. See PERITONITIS.

This peculiar fever has only been discriminated with accuracy within the last thirty years, and even at present is often confounded with various other complaints incident to the p erperal state. In order to distinguish it, and to elucidate its pathology, we must enlarge a little on the changes which take place on delivery, and their consequences. This perhaps might have been comprised in the preceding article; but in this place we thought it might be more striking, as its consequences would be more immediately obvious.

In the last months of pregnancy the arterial system of the hypogastric region is contracted by the pressure of the uterus, while the return of blood by the veins is equally retarded. When the pressure is taken off, the flow of blood is, of course, increased, and it is freely poured out by the uterine arteries. Within the compass of a few hours, from twelve to thirty-six, or at most forty-eight, this discharge lessens; but it is compensated by an increased flow to the mammæ, thus relieving the plethoric state of the hypogastric region which might otherwise ensue. We thus find two altered determinations, the first sudden and rapid, the other more slow; and we know that every change in the balance of the circulation is attended with a peculiar state of irritability. This state is a constant and striking attendant of child-bed; and from it many of the symptoms arise, particularly that susceptibility of nervous impressions which is often so injurious. Independent of these, what are termed the after pains, the discharge of clots from a spasmodic contraction of the uterus is sometimes attended with rigor; but the first effect of the change of determination is often more decidedly febrile, and is termed the *weed*. After about thirty-six hours, often sooner, the next change of determination, that to the mammæ, is also ushered in by shivering, accompanied by heat. These different feverish attacks have misled practitioners, and the true puerperal fever has been confounded with them, supposed to be the same, or a continuance of these accessions. It is now necessary to distinguish it.

The rigor of the true puerperal fever comes on more than forty-eight hours after delivery; in medical language, on the third day. If, however, the woman is delivered about four in the afternoon, the attack on six of the third day is scarcely more than fifty hours, while, if the child was born at two in the morning, the interval is sixteen hours more. The third evening is, however, strictly critical, and whatever rigors occur at any other period are seldom dangerous. The rigor is also severe, attended with peculiar debility, and the hot fit with headach of no common kind, viz. a tension, as if a cord was forcibly bound round the forehead: at the same time there is a considerable tension, very generally great soreness of the abdomen. We can assert, with the fullest confidence, that these symptoms are pathognomonic of the true puerperal fever. They may occur in different degrees, but they are always present. To these we may add, a sinking of the features, and a peculiarly vacant stare of the eyes: a symptom perhaps not equally constant, but rarely absent. The fever remits very strikingly in the morning, and returns at night: these remissions are discernible for the three or four first days.

The lochia are gradually suppressed, and the milk by degrees also disappears. The head is each succeeding day more affected, and delirium comes on early. There is little sleep; the pulse is rapid and weak, with thirst, load at the precordia, dry parched tongue, constant sighing, despair in the countenance, and often an inflammation in the eyes. The tongue is of a glossy red, and very dry; the skin also is hot and dry; cough, with pain of the breast and side often intervene, and the scene closes with a low muttering delirium, sometimes with convulsions; often the placid complacency which attends putrefaction.

The disease is at all times dangerous, and fatal perhaps in the greater proportion. If the lochia return; if the milk can be preserved; if the expression of the countenance is not greatly altered; if the head remains clear; and a gentle diaphoresis comes on, the patient generally escapes. The circumstances attending the delivery afford no favourable prospect. It comes after the happiest and easiest labour; and we have seen it after such a profluvium, as from its violence has endangered life, while in cases of the most difficult and painful, where the placenta has been long retained, and the lochia in small quantity, it has not appeared. This fever is also often epidemic; and its progress is so decidedly that of typhus with local inflammation, that we have not a doubt of considering it as a typhoid peritonitis: for this membrane has been generally found inflamed or suppurated, often covered with an albuminous effusion, which have induced the French physicians to style it *un depot laiteux*.

If it is, however, unconnected with the lochia, it is equally so with the milk: for if it be a milky deposition, its degree should be in proportion to the suppression of the milk, and to the period of this suppression; but neither is the case. The fever sometimes comes on with violence, while the milk is only diminished; and the secretion generally continues, except in the most dangerous cases, till the eighth, often till the tenth day, though diminishing gradually in quantity. The deposition also is not milky, but albuminous. Others, who attribute the fever to inflammation of the uterus, have not found on dissection this viscus essentially injured. It has shown no marks of inflammation or mortification; nor is there a more striking contradiction to this opinion than the case just hinted at, that fever of this kind has come on after profuse floodings. The peritoneum, sometimes the omentum, is confess-

edly inflamed, and often mortified. In explaining, therefore, the circumstances of this disease, these are the only changes that we can admit.

The fever, we have seen, is so strongly marked, that it cannot be explained on the idea of its being an accidental or a sporadic one. The annus infestus of Bartholine marks its epidemic tendency; and our own experience has proved that the larger proportion of cases has occurred at particular seasons. The fever then is an epidemic typhus, appearing only in this peculiar form, from the circumstances of the puerperal state.

If then we consider the situation, the peculiarly irritable state, of a puerperal woman, and compare it with what we have remarked respecting the altered balance of the circulation, as the essence of fever, we shall not be surprised at the affection of the brain; but this affection, though sometimes violent, for the delirium ferox is not uncommon, more often consists in unequal excitement, from a diminution of the active powers of the circulation, while every mark of accumulation remains. The consequence is, the languid inflammation, described as the consequence of concussion. The active energy of the circulation is more conspicuous in the hypogastric region. In the remarks on INFLAMMATION, q. v. p. 13, we endeavoured to show that a weakness in the affected vessels, joined with an increased vis a tergo, was the evident efficient cause; and that all the varieties of inflammation depended on the proportionate degrees of debility, and the impelling power. In the present disease, the vessels of the hypogastric region pressed on by the uterus, during gestation, and their active power thus confined, are necessarily debilitated; and when fever comes on, increasing the action of the larger arteries, inflammation must be the consequence. This disease cannot take place in the uterus itself, for there the vessels are not compressed, and they are completely emptied by the lochial discharge. In the neighbouring organs, however, the circumstances are different, and there inflammation comes on. If then the causes of typhus exist, and any accidental circumstances call them into action, the symptoms of puerperal fever will be the consequence; nor can we wonder at the fatality of the disease, when we reflect on the increased irritability of that state, the local debility of the vessels, and the general weakness from the discharges.

The period of the fever is uncertain. It sometimes extends to the twenty-first day; but where the delirium is violent, its termination is often more rapid. In general, when the lochial discharge has been considerable, we have thought that the disease has been more dangerous and more quickly fatal.

The treatment of puerperal fever in the hands of different practitioners has greatly differed; but, unfortunately, each has been equally unsuccessful; and, on the whole, we are almost tempted to think, that to guard against the most troublesome and dangerous symptoms will be the most salutary practice.

Bleeding, the first idea that occurred to the ancient physicians, was freely employed. It is not easy to reconcile this remedy to the nature of the disease, yet we have little doubt but that it was successful, and we can only explain it on those principles which have already assisted the explanation of the good effects of this remedy in plague and putrid fever. If practised early and copiously, it enables nature to resist the load, and restore more effectually the balance of the circulation. Constitutions may, perhaps, at this time differ, or we may act less decisively: bleeding, however, does not at present succeed, nor can we advise this remedy. The puerperal state attracts general attention, and a failure in its attendant complaints, especially if the remedy is violent, or unusual, may be highly injurious to the practitioner. At all events, we think bleeding should be avoided, except in the young and plethoric; where the delirium is violent, and the determination to the head excessive.

Emetics are remedies of less doubtful powers, and so efficacious, that, some years since, they were considered in France as specifics in this disease. We have little hesitation in saying from our own experience that they greatly mitigate the fever, nor, if given at the moment of the attack, should we disbelieve M. Doulcet's assertion of their wholly checking it. If the emetic is given previous to the next evening exacerbation, the good effect is more doubtful, and previous to the third it is almost useless. From what we have said of the effects of this remedy, and the nature of the complaint, there must be little doubt of the source of its advantages.

Cathartics are remedies whose real value is scarcely ascertained. In general, they are commended; and authors have expressly remarked, that a purging is salutary. We shall not be accused of prejudice against their use; but beyond those gentle ones which keep the bowels soluble we have not found them advantageous. On the contrary, violent purging seems to have lessened the strength, without diminishing fever. It must be remembered also, that, in more active peritonitis, stools did not seem to be useful.

Gentle *diaphoretics* appear to be salutary; but on the one hand to force sweats by excessive heat, or to elicit diaphoresis by relaxing antimonials, seems equally injurious. The saline neutrals, camphor in moderate doses, with opium, if easily borne, are the most effectual remedies of this class.

Blisters are highly recommended, and certainly at times useful in diminishing the pain and tension of the abdomen. Applied also to the neck they relieve often the tension of the forehead, and bring on sleep; but their effects are seldom considerable or permanent.

As we have spoken slightly of the most active medicines, it may be expected that we are about to recommend a new and more effectual plan. In fact, however, we engaged in the practice of medicine at the time of the numerous publications on this subject, with all their various plans before us, and expected to subdue the fever with little difficulty. We found ourselves, however, disappointed; and that the younger practitioners may not experience similar disappointment, we shall state shortly the result of our experience.

The fever attacks, we have said, on the third evening, that is, the next evening but one after delivery. Attention ought, therefore, to be alive at that time, and every rigor at this critical season should be immediately met with an active emetic. Except miliary fever, attended with particular anxiety, sighing, &c. a disease now almost unknown, no fever occurs at this period, and miliary eruptions are not peculiar to it. Were they so it would be no contraindication of the emetic. After the emetic, light saline medicines, with an opiate, and on the following day a laxative, will be necessary. The succeeding evening must be carefully watched, and on

the return of rigor, the emetic with the opiate again exhibited. What can be gained by medicine is by this time attained. The laxatives must be given to prevent irritation from the bowels, blisters applied to the abdomen to lessen inflammation, and to the neck to procure sleep. We gain nothing in the result but the diminution of symptoms; for the disease will run its course. Yet, though we cannot stop the disease, we may regulate its progress; and it is necessary to add some rules for this purpose. The degree of discharge from the bowels is regulated by the strength, the appearance of the stools, and the ease with which they are borne. If black and offensive, they should be numerous, while these appearances continue, and if not followed by faintness, we may be less anxious respecting their number. Should the pulse at the same time become slower and softer, we may persevere. Such, however, is seldom the case. The stools are dark, but they appear to debilitate; the pulse often becomes more contracted, the affection of the head, the wandering delirium, increased. These circumstances have often held our hands, even while the stools have been dark.

The blisters require little regulation, and the diaphoresis, if kept up by mild warm liquids, by camphor, and moderate doses of opium only, will proceed in a salutary degree.

Tonics, particularly bark and the acid of vitriol, have been given early, and in large quantities, but, in our hands, with little advantage. Others seem to have been more successful, and we would with pleasure join in their commendation, did experience warrant us.

In fact, then, as already hinted, after the emetics, we have been able to do little by medicine, except, as in other fevers, to conduct the disease more easily and safely to its termination; and, indeed, the advantages derived from medicine in this respect seem less striking in the present complaint than in the greater number of fever. In this respect it resembles the pure nervous fever, with which it is very nearly allied in all its symptoms and its progress. The most perfect tranquillity, free cool air, the most soothing manners, the most gentle medicines, have appeared most effectual. A diet mild, diluting, and gently diaphoretic, evacuations the least irritating, medicines the most soothing, have appeared the most useful; and camphor with opium, occasionally with the anodyne liquor of Hoffmann, the most salutary. Wine is seldom required, except in the last stages of debility. Let us, most earnestly deprecate any violent interference; for even the most promising plans, if attended with irritation, have been injurious.

See Denman's and Hamilton's Midwifery; Manning on Female Diseases; White, Hulme, Clarke, and Leake on the Puerperal Fever; Doulcet Nouvelles Recherches sur la Fievre Puerperale; Millar on the Diseases of Great Britain; Rapport sur un Memoire contenant la Methode de M. Doulcet dans le Traitément de Fievre puerperal; Zahner Observationes Medico-practicæ de Febre puerperarum; Stoll Ratio Medendi, ii. 68; Edinburgh Medical Commentaries, v. vii. ix.; Memoires de la Societé Royale de Medecine, vii.; Bang in act societatis Medicæ Hafniensis, i. For the dissections of those who have died in this complaint, see Bang ut supra; Hulme; Meckell in Epistola ad Hallerum; Walter de Morbis Peritonæi; Hufeland's Annals; Stoll Ratio Medendi, vii. 148; Selle N. Beitrage, i. 48; De la Roche Recherches sur la Nature, &c. de la Fievre puerperale.

PUGI'LLUS, (from *pugnus, the fist*). A PUGIL, or PINCH; *dragmis*, the eighth part of a handful, or as much as can be taken up by the thumb and two fingers.

PULE'GIUM VULGA'RE, *pulegium regale*, and *latifolium*; *glechon*; PUDDING-GRASS, COMMON PENNY-ROYAL, *mentha pulegium* Lin. Sp. Pl. 807, hath oval obtuse leaves, and trailing stalks, which strike root at the joints. It grows wild on moist commons, and flowers in June.

All the mints, particularly pennyroyals, are warm and pungent; but the latter are more acrid, less agreeable both in smell and taste, less proper than mint in nausea, but more efficacious as warm carminatives in hysteric cases. This species is the strongest, though the least ungrateful, and has been considered useful in the chincough, as an antispasmodic and emmenagogue, but in each respect its powers are inconsiderable. Cullen's Materia Medica. Haller, however, who was not a practical physician, recommends an infusion of the herb, with steel in white wine, for promoting uterine evacuation, and speaks of it as infallible.

The active principle of the pennyroyals is their essential oil, which is more valuable than that of mint. It comes over at the beginning of the distillation with water, and rises in a great proportion with spirit of wine: it tastes and smells strongly of the plant; and may be given from gtt. i. to v.

The London college directs a simple water and a spirit to be distilled from pennyroyal, from a pound of which they make a gallon of each, besides the essential oil, which they ordered to be procured by distillation. An infusion of it is equal, however, if not superior; and the whole virtue of the herb may be extracted, either by water or by spirit. See Lewis's Materia Medica.

PULICA'RIA, (from *pulex, a flea*). See CONYZA MINOR, &c.

PULICA'RIS HE'RBA. See PSYLLIUM.

PULICA'RIS MORBUS. See PETECHIA.

PULMONA'RIA, (from *pulmo, the lungs*; from its utility in affections of the lungs). *Muscus pulmonarius*; *hieracium Alpinum*; *lichen pulmonarius* Lin. Sp. Pl. 1612.

PULMONA'RIA MACULO'SA; *pulmonaria symphytum maculosum*; SAGE OF JERUSALEM; JERUSALEM COWSLIP; SPOTTED LUNGWORT; *pulmonaria officinalis* Lin. Sp. Pl. 194, is a hairy scabrous plant, with leaves of a dark brownish green colour on the upper side, and spotted for the most part with white. Underneath it is of a pale green; and the lower leaves are oval, set on broad pedicles, those on the stalks narrower, long-pointed, set alternately without pedicles; the flowers monopetalous, of a purple or blue colour, and sometimes white, followed each by four seeds inclosed in the cup. It is perennial, grows wild in many parts of Europe, and flowers in April or May; resembling in virtue the adianthum nigrum.

PULMONA'RIS ARTE'RIA. See PULMONES.

PULMONA'RIÆ VE'NÆ. See PULMONES.

PULMO'NES, (Plin. πνευμων, *Attice*, πλευμων). The LUNGS are two spongy bodies, reddish in children, greyish in adults, and blueish in the aged, divided into two principal lobes, hyperchoryphoses, and inclosed in

two distinct bags, formed of the pleura; so that the right and left lobes have not the least communication. The pleura covers the lungs by passing over and round them, as the peritoneum covers the intestines; and the same membrane is reflected, covering the ribs internally. An inner lamella of the pleura passes into their substance; a circumstance discovered in infants. On the right side, the lobe is divided into three lesser ones, a superior, an anterior, and an inferior; the latter lying upon the diaphragm. On the left side are two lobes only divided by a fissure. The space between the lungs is filled up by the heart below; by the thymus and trachea above; behind by the œsophagus and spine. Their shape corresponds to that of the thorax.

The whole mass of the lungs is composed of air and blood-vessels, lymphatics, nerves, and cellular membranes.

The air-vessels are very small branches continued from the windpipe, with which, in a sound state, they have a free communication, and at every inspiration are filled with air. See BRONCHIA.

In the minute ramifications the cartilages of the trachea disappear; but the mucous membrane is continued. When in this minute subdivision the tubes have attained their smallest size, each is widened at its extremity into a follicle, which are usually collected in bundles, styled *lobuli*. The cells of each lobule communicate freely; but the different lobules seem to have little communication. The lobules are divided by cellular substance, so that in the lungs there are two distinct sets of cells, which are affected in different diseases. In the catarrhus suffocativus, for instance, the follicles are filled; in the hydrothorax, the surrounding cells of the cellular membrane. The cells on the surface appear to be circular; but internally, perhaps also externally when confined by the thorax, they are angular.

The blood-vessels are the pulmonary, and the bronchial arteries and veins. The pulmonary artery rises from the right ventricle, runs upwards to the left of the aorta, dividing on the curvature into two branches, which lie before that of the trachea; the right branch is longer than the left, for the same reason as the trachea is so. When passing into the lungs, it divides into two or three branches; after it has divided into very small branches they do not anastomose like the small branches of the aorta, but they join again, and form veins, which uniting, go to the left auricle of the heart, commonly in four or five trunks. The lungs are tied down to the vertebræ by a broad ligamentous band, continued from the division of the arteries down to the diaphragm. The large vessels run in the large interstices, and in the small parts the branches still run on in the interstices of smaller lobuli, and are connected by a cellular membrane, as in the other part of the body: at last the arterial ramifications terminate in a fine network, upon the cells, called *rete Malphighi*, where it is supposed that the blood undergoes some alteration, as there it is nearly contiguous to the air, a very thin membrane being only interposed. From this net-work the veins begin, and carry the blood back. In the minuter subdivisions the pulmonary artery and vein are corrugated during expiration, and elongated on inspiration, so that the circulation is only free during the latter; and the blood is then exposed most carefully to the air. The pulmonary artery receives and returns the whole mass of blood which circulates through the lungs before it passes to the rest of the body, probably that the injurious parts of this fluid should be carried off by respiration. The bronchial arteries are destined to the nourishment of the lungs; and the lymphatic vessels are distributed on their surface to convey the lymph back to the mass of blood. The nerves are very small, chiefly from the eighth pair. The cellular membrane fills up the intermediate spaces between the vessels. See BRONCHIALES ARTERIÆ. For the use of the lungs, see RESPIRATIO.

The substance of the lungs is more vascular than any other part, and a greater quantity of blood passes through them in a given time. The aspera arteria, minutely ramifying through every part of the substance, terminating in air-vesicles, is peculiar to them, and by respiration they are kept in a perpetual motion. When the lungs are diseased, their motion is not only increased by the respiration being quickened, but they often suffer violent concussions by means of coughing; but notwithstanding these concussions, wounds in the lungs often heal readily, and inflammations, except when vomicæ are present, seem scarcely more obstinate than in any other part.

Numerous are the instances in which the lungs have been wounded by a small sword, and even by balls, from which the patients have happily recovered. Bierling mentions one in which one hundred and twenty ounces of blood were lost; and a German author describes a case, in which a ball, passing through each lobe, did not prove fatal. In one instance the right lobe was wholly exposed, and in several a part of the lung was cut off. Abscesses also in the lungs, when not from vomicæ, heal easily; though calculi, which are confined to the bronchial glands, are usually forerunners of hectic.

The adhesion of the lungs to the pleura, which we have mentioned as a common effect of peripneumony, or pleurisy, often occurs without producing any difficulty of breathing. Rivinus, Haller, and De Haen, have recorded numerous instances of the little injury which has resulted from the concretion; and one lung has been almost completely destroyed, without any considerable inconvenience. Gangrene of the lungs we have mentioned among the consequences of peripneumony, and we perceive it recorded by Malphighi among the consequences of a putrid epidemic which occurred at Pisa in 1648. A dissolution of the lungs is mentioned by Fontanus; and a considerable change in their texture in the Memoirs de Medecine, from Haller. In the same collection we find a remarkable case of their being found in a dry state.

A spasmodic stricture in the lungs has been mentioned as a cause of asthma; but we do not find in any part of their structure those contractile fibres which may become the subject of such disease. It has been referred to the cellular texture, which has been supposed irritable; but which we have rather been inclined to consider as an inorganic substance. It is probable, however, that the extreme ramifications of the lungs may be muscular, since gases, vapours, the powder of different substances dispersed in the air, will, in many instances, suddenly bring on spasm; and if we do not

allow them muscularity, we must admit of their being very acutely sensible, and to sympathise with the diaphragm and intercostal muscles. The smallness of the nerves sent to the lungs is the principal argument against either supposition.

De la Mettries' account of a rheumatic affection of the lungs cured by a gangrene of the foot coming on, is a singular and not very credible history. Rheumatism of this part is almost exclusively confined to the muscles of the thorax.

Foreign bodies, inhaled with the atmospheric air, have been found in them, sometimes more solid substances, passing accidentally into the trachea. The great causes of mischief in these organs are, however, the vomicæ, chiefly found at the root of the lungs, which we have sufficiently noticed under the article PHTHISIS, q. v.

PULMO'NIA, (from *pulmo, the lungs*). See PERIPNEUMONIA.

PU'LPA, (*quia pulte mistura vescebatur*). PULP; the soft part of the fruit which surrounds the seeds or kernel. It is separated by pressing through a sieve, after suffering the juices to separate spontaneously; or extracting them either by the addition of boiling water, or by boiling them in water. They are evaporated, when too fluid, in a salt-water bath.

PULPE'ZIA. See APOPLEXIA.

PULSATI'LLA *Nigricans* Storck, Ph. Edinb. *Anemone pratensis* Lin. Sp. Pl. 760: it resembles the pulsatilla vulgaris, or pasque flower; but is less, and of a darker hue: it is a native of the south of Germany, and the neighbouring countries. All the anemones have a considerable degree of acrimony, but this seems to possess the largest share. The whole plant, when chewed, impresses the tongue with a sharp, burning, durable taste; but the root is mildest. Water carries over its virtues in distillation; and the remaining extract is also considerably active. From numerous trials, Storck celebrates the efficacy of this plant in various chronic diseases of the eye; in venereal nodes and nocturnal pains; in foul ulcers with caries; in serpigo; and suppressed menses. He relates instances of its curing blindness of many years continuance, by dissipating and dissolving films and obscurities of the cornea. In these cases, its good effects were first indicated by considerable pain excited in the eye. The sensible operation of the medicine was nausea and vomiting, particularly when the distilled water was used; an increased flow of urine, and sometimes colic with looseness. Many German physicians have tried the effect of this remedy in diseases of the eyes with success; but Schmucker, Bergius, and Richter, found it inefficacious in these complaints, though the doses were increased beyond what Storck himself directed.

As this plant is acrid, Dr. Cullen thinks it may be active; and from the singular matter resembling camphor, which its distilled water contains, that it may have peculiar powers and virtues. The too eager commendations of Storck have excited suspicion: but Dr. Cullen recommends the trial of it in amaurosis; as the disease may depend upon different causes, some of which may yield to remedies, though others do not. Cullen's Materia Medica.

The dose of the distilled water to adults is about half an ounce twice or three times a day; of the extract, reduced to powder, with the addition of sugar, five or six grains. The Edinburgh college had adopted the distilled water of pulsatilla, but has now changed it for the extract. See Lewis's Materia Medica, edit. 3.

PULSATIO, (from *pulso, to beat*). This can scarcely be called a disease; but it is often a symptom, and frequently a source of alarm. Any person, if thin, will often on lying on his back perceive a pulsation somewhat below the pit of the stomach, and if low spirited or hysteric will be alarmed by this unexpected sensation. It is, however, owing to the falling back of the intestines, which brings the pulsation of the aorta under the fingers. This is the cause in ninety-nine of one hundred cases, and is particularly noticed in the second volume of Haller's Bibliotheca Practica from Columbus. We must not conceal, however, that Bonetus has recorded it as occurring from a compression of the aorta, below, and Severinus and Bonetus from an aneurism of the cœliaca. Weisborn has described a case in which it occurred from the aorta being pressed from its place. A similar cause must have occasioned the sensation of pulsation on the right side. A pulsation of the veins is recorded by Homberg in the History of the Academy of Sciences, 1764, apparently from increased action of the arterial system.

PU'LSUS, (from *pulso, to beat*; also *phlebopalie*). The PULSE is well known to consist in the reciprocal contraction and dilatation of the heart and arteries, by the former of which the blood is propelled through every part of the body.

It may be easily supposed that the pulse could not be understood, or employed as a source of prognostic, while the circulation was unknown. Hippocrates therefore slightly mentions it; and Herophilus is said to have been the first who considered the pulse with some accuracy. In the time of Celsus the pulse was frequently consulted, though he calls it *res fallacissima*. Galen, however, wrote most voluminously and laboriously upon this subject; an epitome of which may be seen in Prosper Alpinus de Præsagienda Vita et Morte. Boerhaave, in his Institutes, collects all that the ancients knew concerning the pulse in a short compass, which is well explained by his commentator, Haller. Long experience, however, has rather confirmed than contradicted the opinion of Celsus, for notwithstanding the multiplicity of pulses, which have been enumerated, they often mislead, unless the practitioner is accustomed to their examination.

In feeling the pulse no little attention is required. They should be examined at coming into the room and on leaving it. The presence of the physician sometimes quickens it; and the recollection of the complaints, or the talking only, will have the same effect. The artery should be first felt gently, and if any doubt arises whether the pulse is weak, it should be compressed strongly by three fingers, and the two uppermost slowly raised. If the pulse is strong, and seemingly weak only from oppression, the blood, rapidly returning, will strike fully the finger below. If really weak, it gradually recovers its former force. It is necessary in estimating the strength or weakness of the pulse to consider the state of obesity in the patient, and the size of the artery. A fat person has naturally a weak pulse; but it beats also to a disadvantage beneath a layer of fat. This circumstance should be attended to in our estimate. The size of the

artery we can often estimate, for we can feel, in thin persons, two-thirds of its circumference, and errors can scarcely arise from this source.

The great object of enquiry respecting the pulse is their frequency or slowness. In this respect, sexes, temperaments, idiosyncracies, and ages, differ. The pulse in women is quicker than in men; in the sanguine than in the melancholic temperament; in youth than in age. If the pulse in men varies from sixty to eighty, in women its range is usually from seventy-five to eighty-five. In a sanguine temperament a natural pulse is often eighty; and in a melancholic one frequently under sixty. Idiosyncracies can be reduced to no standard; but we suspect that the supposed varieties, if not referable to age or temperament, often arise from disease. Dr. Heberden, who examined the pulse with accuracy in this respect, observes that the pulse of a healthy infant, on the day of its birth, while asleep, is from one hundred and thirty to one hundred and forty. The mean rate, during the first month, is one hundred and twenty; and it is rarely under one hundred and eight. During the first year, its range is from one hundred and eight to one hundred and twenty; during the second from ninety to one hundred; the third from ninety to one hundred and eight. It varies little till the seventh year, when it is about seventy-five; and in the following year scarcely exceeds seventy. These numbers are subject to great variety. The pulse are quickened at different times of the day (see DIÆTA); after a full meal; after exercise or any agitation. They are also quicker when standing than sitting, and in the latter posture than when lying down.

The pulse may be counted with some degree of accuracy till it reaches one hundred and forty strokes in a minute, perhaps, by strict attention, to one hundred and seventy. Beyond, all is rude conjecture, and the number is of little importance; for even in a child one hundred and forty strokes in a minute indicate extreme danger. We can admit that De Haen (Ratio Medendi) xii. 83), could observe one hundred and sixty strokes in that small period; but scarcely allow that Wendt (De Pulsus Mutatione insigni Erlang, 1778) could have distinguished two hundred and forty-three.

A constant pulse of ninety in a minute, rising occasionally to one hundred and eight, shows a considerable irritation in the system, and is not without danger. We once saw, however, in a fever, a pulse constantly exceeding one hundred and forty; and three months after recovery it seldom sunk below one hundred and twenty; though after about two years it resumed the usual standard. In general, however, to exceed one hundred and twenty is a symptom highly dangerous, whatever may be the other appearances.

Pathologists have occasionally described a more frequent contraction in a particular artery; but except in the irregular oscillations, as they are styled, of the capillaries, this scarcely in any instance takes place. Gaubius asks, "An topica (pulsus frequentia), datur in singulari systematis arteriosi parte?" Answering, "Dabitur si vera febris particularis."

A pulse from rest, and avoiding all stimuli, may be unusually slow, and, as we have said (see PROGNOSTICA), even down to fifty in a minute. In diseases, however, this degree is highly dangerous; and should stupor also attend, it shows a degree of compression on the brain which will probably soon end fatally. Within a few hours, we observed it, after an apoplectic stroke, under forty. Hyoscyamus and digitalis often render the pulse remarkably slow by lessening irritability. Causes of debility only increase its quickness, for the heart contracts from the increased irritability before it is full; and the ventricle, in consequence of weakness, is seldom wholly emptied. In Sarcone's account of the epidemics of Naples, the slowness of the pulse arose from insensibility. Cheyne remarks, in his English Malady, that colonel Townshend had attained so great power over his pulse as to stop it almost entirely; and we remember hearing a celebrated professor in a neighbouring university declare, in his youth, that he had a similar power in a less degree. He described the means by which he effected it to be recalling some melancholy images, and yielding to gloomy reflections. His recovery, as may be expected, was attended with excessive anxiety. The pulse wholly stopping is not always a fatal symptom, though if it continues any time it is desperate. In a case recorded in the Breslaw collection, it failed eight days before death; and in one in the Commercium Norimbergense, five. Morgagni has recorded a similar occurrence from a dropsy of the pericardium. On the contrary, the pulse sometimes remains firm and good even a few hours before death, particularly when life is extinguished by causes which have no effect on the circulation. Even in a case of suffocation, from a suddenly supervening stricture in the upper part of the trachea, the pulse was not affected five minutes before death.

When the number of strokes continues the same, the pulse may be strong and hard, or quick (celer), and apparently weak. A strong, firm, pulse is consistent with high health; for the heart contracts only when full, and then acts with vigour. But the strongest pulse has some degree of softness if healthy. If it strikes the finger like a tense cord, it shows a tendency to disease, distinguished by the appellation of diathesis phlogistica, consisting in morbidly increased tone of the arterial system. If, with this hardness, it is increased in frequency, inflammatory fever is present.

It has been doubted whether the pulsus *celer* can be distinguished from the pulsus *frequens*. By the former term, which for distinction we shall style the *smart* pulse, is meant, that in which the systole is completed in a less time than the diastole. The rival professors at Halle, Stahl and Hoffman, differed in this point; but there is little doubt that such a distinction exists. It is not, however, obvious, but in a pulse of moderate quickness, and we should greatly doubt if it could be ascertained, when the number was above ninety; for that would require a distinction of the differences in the division of $\frac{1}{180}$th part of a minute. Yet this, we think, a delicate finger can ascertain. The cause of this more rapid contraction is the presence of a stimulus; but if it occurs chiefly in putrid fevers, in mortification, in hectics, and in all cases where a stimulus is combined with debility, as Haller contends, it will imply a spasmodic contraction of the artery, when the ventricle is not yet full. We think that our own observation confirms this idea. The pulsus *rarus* can undoubtedly be distinguished from the pulsus tardus. The latter we have already mentioned. The *thin* pulse is when the artery does not strike the finger as if it was full, when

the dilatation is slow and apparently incomplete. In this case the artery seems to hang on the finger; for as it is filled in slow succession the stroke is longer continued. This kind of pulse often attends asthmatic cases, and an enlargement of some portion of the heart, or the larger vessels.

The *intermitting pulse* is usually referred, though with little reason, to this head. It certainly is a symptom of considerable debility, and diminished irritability; for the heart, when less irritable, is excited only from over-distension: and when at the same time weak, cannot, by one effort, remove the load of blood. It occurs too in the most dangerous pulmonic cases, when there are organic affections; and, according to Solano, presages a diarrhœa. This alarming view of the subject requires, however, some alleviation. An intermitting pulse is with many persons natural, and seldom absent, but when irritation takes place in the system, particularly febrile irritation. In many instances it is owing to fulness of the stomach and bowels, and often arises from agitation of mind. It fact, it is frequently only the irregular action of mobile habits; and in the greater number of cases, where no serious indisposition at the same time occurs, of little importance.

The *rebounding pulse* is nearly of a similar nature. This very certainly arises from obstruction. Lancisi observed it as a symptom of aneurism of the aorta, and we have more than once seen it in hydrothorax, and ossifications of the valves of the heart. It consists in two, sometimes three, rapid pulsations, with a long interval. The Latin name, *dicrotus*, implies only two rebounds, so that we have preserved the English term; but some later authors have distinguished the three rebounds by the term *coturnizans pulsus*.

We remember a singular effect of the digitalis on this kind of pulse. After it had been for some time continued, the second and third rebound grew weaker, and in the course of a single night disappeared, reducing the number of pulsations from one hundred and fifty to fifty in a minute, without the smallest change in any function, or in the nature or violence of the disease. Solano considers the pulsus dicrotus as a presage of impending hæmorrhage from the nose: and a story is recorded of Galen, on observing it, calling for a basin, which was scarcely brought before the blood gushed out with violence. If, however, he had no other marks, he might call for the basin ten thousand times before his prognostic would be again fulfilled.

The *inciduous pulse* is when a stronger stroke succeeds a weak one, and a third, still stronger, the second, as in a swelling sea the waves are successively more violent. A pulse of this kind has never occurred to us; but Solano considers it, if soft, as presaging a sweat; if hard, a jaundice.

Bordeu has been more minute in his distinctions, though he has added little but words to the observations of former pathologists. He distinguishes pulses into critical, and not critical. The former are soft, *dilated*, and free; the latter harsh, small, and contracted. These are subdivided from the nature of the disease and other circumstances. If the disease is in the upper part of the body, and the critical evacuation is to be expected from above, the pulsus dicrotus occurs, which he styles *pulsus superior*. If the complaint is in the breast, and the discharge is expected from that part, the pulse will be soft, flowing, and equable: if in the throat, somewhat harder and quicker, approaching the "cephalic pulse," which is still more hard, quick, and strong; truly a rebounding pulse. The *pulsus inferior* has unequal intervals, and is not seldom an intermittent one, joined with subsultus. It will portend vomiting, if at the same time hard and unequal; evacuations from the intestines, if more unequal, almost intermitting, and mixed with subsultus. A pulse presaging hæmorrhoids is rebounding, hard, frequent, and less unequal. The whole, however, is a superstructure raised on the foundation of Solano; but it is certainly, in a great degree, imaginary, and we find, from De Haen's Epistle to Haller, that Bordeu himself trusted little to it. The doctrine is at least inapplicable to the artificial cure of fevers by emetics, and cathartics. It may be asked if this is an improvement? We can reply most certainly; for, instead of a treatise on fevers being, as was said of Hippocrates' epidemics, "a meditation on death," febrile complaints are seldom dangerous. A critical jaundice is a certain proof that the proper alvine discharges had been neglected.

Some other minute peculiarities of little importance have been noticed respecting the pulse; but we have sufficiently enlarged on that subject, farther perhaps than its application to more rational practice will warrant.

See Galeni Tractatus varii de Pulsus in Operum, vol. iv.; Massaria de Urinis et Pulsibus; Bellini de Urinis et Pulsibus; Solani Lapis Lydius Apollinis, folio, abridged and republished in 12mo. in 1737, and again at Vienna in 1753; De Haen Ratio Medendi, Pars ix. and xii.; Nihel on the Pulse; Hoffmann Dissertatio de Pulsuum Natura et Praxi; Stahl de Differentia Pulsus Celeris et Frequentis; Floyer's Pulse Watch; Boerhaavii Institutiones cum Commentario Halleri.

PU'LVINAR, (from *pulvis*, *dust*, or *chaff*, with which they are filled). See EPITHEMA.

PULVINA'RIA. CUSHIONS or PILLOWS, made with chaff, mixed with medical ingredients coarsely powdered. Those made with hops are said to be efficacious in producing rest; an apparently idle fancy, rendered famous from the rank of the patient on whom it was tried.

PU'LVIS, (from *pello*, *to drive about*, because it is easily agitated). A POWDER is composed only of such materials as may be reduced to this form, and kept in it without any loss of virtue, or which from their levity will not increase the bulk, or by their taste render the medicine nauseous. Bitters, fetids, acrid medicines, alkaline salts, and gums, are generally improper for keeping in this form. The dose of powders should not exceed ℈ ij; and if light ʒss.

Compound powders were formerly called species.

PU'LVIS ALOE'TICUS. See HIERA PICRA.

PU'LVIS ANTILY'SSUS. See LICHEN CINEREUS.

PU'LVIS ANTIMONIALIS. See ANTIMONIUM.

PU'LVIS JACOBI. The POWDER OF DR. JAMES. An antimonial preparation, of which we found various prototypes in our enumeration of the older antimonials (see ANTIMONIUM). It was originally prepared by himself, but has since descended to the rank of a quack medicine; though, from the ingenuity of Dr. Pearson, we now approach very near it in the London Pharmacopœia.

It is supposed that, in the first preparations, calomel was added, and it has been said that Dr. James did not trust to it for the cure of fevers, but used it only as an evacuant previous to the use of the bark; and that he did not originally design to keep it a secret. It has, however, been anxiously employed since his time, and at one period the quantity exported was immense. This may probably continue.

The specification is worded with all the ambiguity of an ancient oracle, nor can it be prepared by the process described. Its succedaneum also, from many circumstances, is uncertain in its result. Dr. Pearson discovered that this celebrated powder consisted of the earth of bones, and the antimonial calx, forming a double compound, in the proportion of fifty-seven parts of the calx to forty-three parts of the earthy salt. It was doubtful, however, whether the ingredients of the earth of bones were not united with the antimony in an intimate chemical union, forming a triple compound. A little calx of iron appeared to be an accidental impregnation. The chemical state of the calx is, however, peculiar. About three-fourths may be dissolved in muriatic acid, and will afford the powder of algaroth. The remainder is insoluble in this acid, and is seemingly vitrified. If the bone ashes (phosphorated lime) are calcined in the above proportions, with the calx of antimony, and then exposed to a white heat, the result very nearly resembles James' powder. The uncertainty of the medicine apparently depends on the last part of the process. With the utmost care we have not been able to prepare it twice exactly alike.

In a medical view, James' powder is less active than its imitation. It affects the bowels and stomach very slightly, and passes off more readily by perspiration. In general, however, the difference is so inconsiderable, that we need scarcely regret the want of the real receipt of the inventor. We have thought that by uniting two grains of the pulvis opiatus with three of the antimonial powder, we imitated very nearly the effects of Dr. James' preparation. The opiate, however, certainly forms no part of the medicine sold. See Dr. Pearson in the Philosophical Transactions.

PU'LVIS FEBRI'FUGUS CRŒ'NII. See ANTIMONII REGULUS MEDICINALIS.

PU'LVIS AD GUTTE'TAM. See GUTTETA.

PU'LVIS EPILE'PTICUS. See GUTTETA.

PU'LVIS REFRI'GERANS FALCK. See DYSURIA.

PU'MEX, (from *spuma, froth;* supposed to be the froth of some liquefied mineral); *lapis bibulus, lapis scyrus,* PUMICE STONE, is found in volcanos, and hath been used as a dentifrice; but if frequently employed destroys the enamel. It is light and brittle, of a white or greyish colour, and generally contains mica. It is a volcanic product.

PU'NCTA LACHRYMA'LIA, (from *punctum, a point*), are two small holes on the upper and lower eyelids, opposite each other, on their inner edge, near the internal angles, contiguous to a small eminence. They convey the tears into the lachrymal sac, and from thence into the nose.

PUNCTI'CULA. PUNCTICULA'RIS, vel PU'NCTULA, (dim. *of punctum, a point*). See PETECHIÆ.

PU'NCTUM AU'REUM, PUNCTU'RA AU'REA. When a hernia of the intestines is reduced, an incision was made through the skin and membrana adiposa, quite down to the upper part of the spermatic vessels; then a golden wire was fixed and twisted, so as to prevent the descent of any thing down the tunica vaginalis. Modern practice rejects this method.

PU'NCTUM SALIENS; the first rudiments of the heart in the formation of the fœtus. The point where a throbbing motion is first observed. See FŒTUS.

PUNCTU'RA. A SMALL WOUND. Synonymous with vulnus.

PU'NICA. See GRANATA MALA.

PU'NICA GRANA'TUM, &c. See BALAUSTINUM.

PUORRHŒ'A, (from πυον, *pus,* and ρεω, *to flow*). A purulent discharge from the belly.

PUOTU'RIA, (from πυον, *pus,* and ουρεω, *mingo*). A purulent discharge from the bladder. See URINA.

PUPI'LLA O'CULI. The PUPIL OF THE EYE, (*à pupa, quòd intuentibus similitudo pupæ redditur*). The aperture of the iris, for the passage of the light to the retina: as the iris expands or contracts the pupil is larger or less. See OCULUS.

The pupil is sometimes closed, occasionally by the iris receding from the cornea, and has been opened by an operation, described by Pellier in his Recueil de Memoirs. It is occasionally torn in the operation for the cataract, and sometimes displaced; but in either case without injury to the sight. Chandler remarks that its mobility is not always in proportion to the sensibility of the cornea. See Janin Memoires; Richter's Essays; Weissenborn de Papilla nimis coarctata vel clausa.

PUPILLA'RIS MEMBRA'NA, (from *pupilla*). *Velum pupillæ.* In the fœtus of five, six, and seven months, a fine vascular membrane, with large arteries, passes across the part where the pupil is afterwards seen. See OCULUS.

PURGAME'NTUM STELLA'RUM, (from *purgo, to cleanse*). See CŒLIFOLIUM.

PURGA'NTIA, (from the same). *Cathartica, catocathartica, catoretica, catoterica, dejectoria, alviduca.* See CATHARTICA.

PU'RPURA A'LBA, and RU'BRA. See MILIARIS FEBRIS.

PU'RPURA A'LBA. A species of eruption to which plethoric men of a phlegmatic temperament are inclined.

PU'RPURA SCORBU'TICA; the *herpes* of Vogel; the *purpura* of Hoffmann; the *serpigo* of other writers. Hoffmann considers it as wholly scorbutic; but it is distinguished by the eruption of exanthemata of a very peculiar kind, sometimes accompanied with an acute and even a malignant fever; on other occasions without fever continuing for a greater length of time, and scarcely disturbing the functions. The small papillæ which appear on the surface are sometimes of a red, sometimes of a white, colour: in the former case, there are vesicles containing a fluid; but the latter consists of small knots, fixed deep in the skin, about the size and figure of millet-seed, rough to the touch, and filled with a thick purulent matter. When the eruption first appears, it is attended with corrugation, roughness, and dryness of the skin; and none of the exanthemata so suddenly disappear and recur. This return of the eruption, as well as its first appearance, is in general attended with a sense of heat, of itching, or pricking in the part; and the pustules are chiefly observable on the neck, breast, back, and arms.

Patients, disposed to this disease, are advised to use

for their common drink either mineral water, or pure water with a mixture of wine, and to avoid malt liquors, as well as whatever produces costiveness. Exercise, change of air, tranquillity of mind, and amusement, are of great service in preventing it. High-seasoned animal food, close rooms, and excessive heat, are said to be injurious; milk and whey serviceable. Cooling medicines, gentle diaphoretics, with moderate discharges from the bowels, are only necessary.

From respect to the authority of Hoffmann we have preserved, with some corrections and curtailments, the article of the former edition. Yet we cannot help remarking that the whole description is apparently confused and inaccurate, mixing two diseases of very different kinds. The former is a species of milliaria, the latter a pustular complaint of a very different nature. See Hoffmann's Works.

PU'RPURA URTICA'TA. See URTICA'RIA.

PURPURA'TÆ, (from πορφυρος, *purple*, from the colour of the eruptions, vulgarly called the *purples*). See PETECHIÆ.

PURULE'NTIA, (from *pus, puris*). See SUPPURATIO.

PUS, (πυον, from πυθω, *putresco*). PURULENT MATTER; that which appears on the surface of healing wounds, or on opening well-digested abscesses. It is unctuous, yellowish, nearly of the consistence of fresh cream, without any particular smell, and of a mild taste, resembling that of chyle.

We shortly considered this subject under the article ABSCESSUS, q. v. chiefly to point out rather than discuss the different opinions, as it was peculiarly connected with suppuration. The nature of pus, however, is still involved in considerable obscurity, and we can only offer some approaches to a knowledge of it.

As in abscesses there is always a loss of substance, it was a natural conclusion that at least the cellular substance, perhaps the muscular fibres, were dissolved in purulent matter, and the surgeon removed it from wounds with anxious care. Granulations of new flesh, however, appeared under it; and if in the first period it was a solvent, in the second it contributed to reproduction. Riedlin supposed it to be pituita, that fancied humour which obeyed every hypothesis; but Pringle and Gaber led the way to enquiry, though they did not succeed, by supposing it to be serum inspissated by heat, and changed by fermentation, probably a beginning putrefaction. Dr. Hendy, in an inaugural dissertation, opposed this opinion. He found that pus was less liable to putrefaction than serum; that serum and lymph confined in wounds producing good pus did not assist or hinder its formation, but themselves became putrid; and if red blood were added, the putrefaction was more rapid and considerable. Previous to this period, De Haen had contended that pus was derived from the blood (Ratio Medendi, pars ii.); afterwards that it might be separated without either pain or fever (pars ix.); and at a subsequent period that an ulcer was not necessary for its production. We have seen the appearances which De Haen describes, but they are certainly equivocal. If by ulcer is meant a loss of substance, no ulcer existed, but the investing membrane was destroyed, and the surface was covered with an albuminous matter. In this state the question remained for some years; for though in this period there were numerous publications on the subject, but little was added to the evidence.

Mr. Home, in his Dissertation on the Properties of Pus, observes, on the authority of Mr. J. Hunter, that the characteristic of pus is the appearance of globules swimming in it, but that these are not coeval with its first formation. It then resembles, in consistence, a jelly, but the globules are formed, while the gelatinous fluid lies on the surface of the sore, in a period of fifteen or twenty minutes. It differs from the blood in the nature and colour of the globules, for the purulent ones are not soluble in water; and the fluid in which they swim is coagulable by a solution of sal ammoniac, which does not coagulate serum. Mr. Hunter, in his peculiar unscientific language, informs us that the vessels *assume* the nature of a gland, as if they had an active power, and as if it had been demonstrated that a gland had a peculiar organisation. The objection to this doctrine consists chiefly in this, that pus is formed where no glandular structure apparently exists: but we know not in what such a structure consists; and, as a change in the state of the vessels can wholly alter the nature of a secreted fluid, it is impossible to say that it may not equally produce one. In this case, suppose, for the sake of hypothesis, it be admitted that the fluid effused is gluten, it meets in the cellular membrane with an oily matter, from which its nature may be altered; or suppose that from a hydrocarbonate, which it finds there, oil is formed, the chemical affinities of the fluid will then be changed. These we mean no other than suppositions, merely to suggest enquiry. Yet we own that they are not the hasty effusions of the moment, but have some collateral support.

Mr. Home concluded from his experiments that pus contains substances similar to those of the blood; that it is in a recent state free from any tendency to putrefaction; that it is friendly and bland to the parts which produce it, though it may irritate neighbouring ones. Its appearances also vary according to those of the constitution, and are affected by irregularities, anxiety of mind, &c. It is readily absorbed; and in Mr. Home's opinion without injury to the constitution. The parts which afford it become extremely vascular, and it is formed sooner in proportion as the part approaches nearer a glandular structure: thus in the internal surfaces it is often formed in five hours; in the skin, which is very vascular, in twenty; and in common muscles in forty-eight hours. It is composed, as already remarked, of globules swimming in a fluid, and is thinner when first poured out than after stagnation. In almost every respect we thus find pus resembling secreted fluids; and we certainly find secretion take place where there are no follicles, or any appearances of a complicated structure.

That pus existed independent of inflammation, and was a secreted rather than a fermented fluid, was for a considerable time a favourite opinion on the continent, though we are unable to say whether it occurred previous to Mr. Hunter's offering this explanation, since it was promulgated in his lectures, at a period not specified. The same opinion, however, was entertained by Plenciz, by Murray, Schroeder, and others, as well as by De Haen, formerly quoted; nor does any doubt remain, we believe, of the truth of this doctrine. Mr. Home is correct also in his idea, that though bland to

the part which produces it, pus is an irritating fluid to other parts, agreeing in this, as in almost every other circumstance, with the different secreted fluids. When reabsorbed we have said that it produces hectic, though Mr. Home thinks it may be so without injury to the constitution. Our reasons have been already assigned. Pus when absorbed in a considerable quantity is discharged often by other secretory organs, acting in this respect like any other foreign matter in the system; nor does there appear any difference, except that it seems more suddenly absorbed, and often more rapidly determined to some particular gland than any other substance. The discharge from the skin is not indeed an immediate effect; but that it is owing to the purulent matter is highly probable, since, when the perspiration is checked, a diarrhœa comes on. The metastasis to the kidneys, and on some occasions to the abdomen, is often rapid.

The use of the purulent matter is obvious in open wounds, since it affords a bland, protecting fluid for the tender granulations. Its distinguishing appearances show a healthy state of the system in general, and of the vessels of the part; for, if these are diseased, the fluid is thin and acrid, by no means calculated to protect the young flesh. Mr. Hunter involved himself in difficulties in his enquiries into the final cause of this secretion, by supposing the fluid which produces pus existed previously in the constitution. Like all other secreted fluids it exists materially, but not formally: like the rest it is the blood altered by its passage through vessels of a particular structure or organisation, and formed only in the emergencies which require it. Pus seems sometimes to act as an assimilating fluid. We draw a seton through a part, or apply a blister or an issue near it, when we wish to bring an indurated tumour to suppuration. Either the inflammation of the skin excites increased action in the tumour, or the pus, produced, assimilates the other fluids. Suppuration generally, in consequence, takes place, at first from the parietes of the containing sac, afterwards from the tumour.

When a purulent discharge takes place naturally, or artificially, it is often the inflammation rather than the purulent evacuation which is of service. In a critical abscess there is no reason to think that the morbid matter is there collected and confined, for in general the fever remits previous to its formation, but the balance of the circulation is not regularly restored. The fluids thrown with impetuosity on one part in consequence of the previous weakness of the vessels are impacted, and the organisation of the part is destroyed. The adjacent vessels inflame and separate purulent matter, by which the substance of the abscess, now become a matter foreign to the constitution, is separated. See INFLAMMATIO.

We purposely refer to this article to mark its inconsistency with the present. The opinion there given was adopted early in our lives, but more careful reflection and more extensive examination have induced us to change it. We have no objection at any time to offer more matured sentiments, and feel a gratification in reflecting that we daily grow wiser.

The distinction between mucus and pus is difficult, but experience will often detect a difference, to which words are inapplicable. We have already noticed the more striking characteristics of each (see PHTHISIS); but shall now add the common methods of distinguishing them.

Mucus detained in the lungs often resembles pus; but if pus be slightly agitated with water it is easily diffused, and after standing a few hours falls to the bottom of the vessel. But previous to its subsidence, if a fixed alkali be added, it is precipitated in a gelatinous mass (Grasmayer). Mucus is with difficulty diffused in water, requiring strong agitation, and then forms a permanent ropy fluid. The quantity of pus mixed with mucus may thus be often ascertained.

Another experiment is more conclusive. The expectorated matter must for this purpose be dissolved in vitriolic acid, or in caustic alkaline lixivium; and then to both solutions pure water added. If there be a fair precipitation in each, some pus is certainly present; if in neither, the matter is entirely mucus. Should it not dissolve in the alkaline lixivium, there is also reason to believe it to be pus.

See Morgagni de Sedibus, &c. ep. xxii. § 28, &c.; Home on the Properties of Pus; Salmuth de Diagnosi Puris; Plenciz Acta et Observationes Medicæ; Murray's Opuscula, vol. 1; Quesnay Traitè de la Suppuration; Medical Commentaries, Edinburgh, vol. vii. page 193; Bell on Ulcers, ed. 3d. p. 55—7.

PU'STULA, (a dim. of *pus*). A PUSTULE, or LITTLE PIMPLE; *ecthyma; eczema; eczesma.* Pustules appear often in the spring, and are of various kinds; sometimes resembling those marks of irritation produced by the application of a nettle, or the obstruction of sweat, called by the Greeks *exanthema*; at other times of different sizes and colours. Dr. Willan defines a pustule to be an elevation of the cuticle, sometimes globate, sometimes conoidal in its form, containing pus, or a lymph which is in general discoloured. Pustules are various in their size, but the diameter of the largest seldom exceeds two lines. He enumerates four different kinds of pustules, distinguished by medical authors under specific appellations, viz. PHLYZACIUM, a small pustule containing pus, raised on a hard circular inflamed base, of a vivid red colour, succeeded by a thick, hard, dark-coloured scab. PSYDRACIUM; a minute pustule irregularly circumscribed, slightly elevated, terminating in a laminated scab. See also ACHOR and PHLYCTIS.

PU'STULA O'RIS, (from *putreo, to be corrupted*). See APHTHÆ.

PUTAMEN. The bark or paring of any vegetable. In medicine the green rind of the walnut is only used, and it has been highly celebrated as an antivenereal. It is mentioned as an antivenereal remedy, in the form of a decoction, by Borelli and Ramazzini. Mr. Pearson, though he admits its utility in the pains and indurations which remain after the disease, thinks it has no salutary effect in the lues itself.

PUTICARAGA. An Indian plant, whose seeds are bitter, probably tonic. Jones in the Asiatic Researches, ii. 351.

PUTRE'DO, vel PUTREF'ACTIO, (from *putris, putrid*). PUTREFACTION.

Putrefaction has been considered as a species of fermentation, and with reason, if fermentation be defined the spontaneous decomposition of bodies, with the assistance of heat and moisture. In the vinous and acetous fermentations (vide in verbo) we have seen the decomposition of vegetable bodies gradually taking place; the

aerial products again united in new combinations; and the fluids gradually attenuated, till the ultimate resolution by putrefaction reduces the whole to its last elements. Solid bodies undergo similar changes, till all organisation is destroyed, till the earth falls down in its native form, the water combines with the air, and the gaseous products mix with the atmosphere. The phenomena, however, of this important change differ in vegetable and in animal substances; again in the dead and living animal matter. We must examine them in each state.

When vegetable substances have undergone the former processes of fermentation, which often pass so rapidly as to be little noticed, the last important dissolution comes on. A degree of heat is, however, necessary, though no considerable one; but it seldom proceeds with any rapidity under 46° of Fahrenheit, nor at a temperature so high as to hasten evaporation. Open air assists the process, but is not essential to it. Without some degree of moisture, however, putrefaction never goes on. It is probable that in this gradual decomposition the hydrogen is separated early; for this gas is a more powerful solvent of different substances than any other. The peculiar aroma of the vegetable is apparently combined with this air, and gives the appropriate fetor, which distinguishes the putrefaction of each. It is sometimes combined with sulphur, as in cabbage; sometimes apparently with phosphorus, as in the alliaceæ; sometimes with ammonia, as in the cruciform plants, and those parts of vegetables which, in approaching animal substances, contain gluten, as the husks of the cerealia, &c.

When animal matter putrefies, its colour becomes paler, and its consistence lessens; a watery matter exudes, which becomes reddish or green. All traces of organisation begin to disappear: the smell is disagreeable, approaching that of ammonia; and the bulk diminishes. If the substance be confined in a close vessel, the process at this period slackens; the smell is purely ammoniacal, and all the chemical marks of alkalinity attend. If the communication of the air be admitted, the alkaline effluvium yields to an intensely putrid one, which is in part corrected and confined by ammonia. It is this peculiar smell which is so deleterious and so dangerous to animal life. After this smell has in part disappeared, the process proceeds with more rapidity. The substance swells with bubbles of air, and again subsides; the appearance of fibres is almost lost in an offensive, uniform mass, of a soft brown or greenish colour, of little consistence, of a faint nauseous smell, and of a poisonous nature. The smell then gradually disappears, the substance becomes more solid, the colour deeper, and at last it resembles a brown, nearly friable, earth.

During this process heat is usually extricated, and various gases are emitted, chiefly hydrogen, holding in solution sulphur, carbone, or phosphorus; ammonia; water, carbonic, and occasionally, for a short period, nitric acid and azotic gas. The residuum is an earth mixed with carbone, oil, and a small portion of ammonia.

The human body, when buried, undergoes a peculiar change. As the gaseous matters are prevented from escaping, by a new play of affinities a singular compound is formed, a kind of ammoniacal soap, with an excess of frothy matter, containing also some phosphat of lime. The oily matter, separated by a diluted acid, and dried, resembled spermaceti; and a manufacture of this kind was established near Bristol, at first with some success; but it was almost impossible to deprive it of an unpleasant smell; and the attempt has, we believe, been for some time discontinued. A stream of water passing through the animal matter seems almost essential to the success of this singular change.

These chemcial facts have been applied somewhat rashly to the human body, and a putrid dissolution of the fluids and solids has been too generally spoken of as no uncommon occurrence. In the human body the concurring causes of putrefaction, heat and moisture, are constantly present; yet the system is preserved, and by its own powers. What these powers are, or by what means their effects are produced, we know not. The putrefaction of animal food is quickly corrected in the stomach; and that we may not attribute too much to the fancied powers of the gastric fluid, the same effect is produced by placing a bit of putrid flesh in the cavity of an ulcer. The prevention of putrefaction has been attributed to the discharge of excrementitious fluids, and the constant accession of fresh nourishment. The extent, however, of these effects is inconsiderable, and will not explain the facts just mentioned. It is not more singular that the stomach should correct putrefaction, than that it should have no power of digesting what has life. Each must be left among the arcana of physiology: arcana that we can never explain till we know what life is.

The effect of putrid matter in the stomach is nausea, with considerable debility, sometimes faintness and convulsions. If not evacuated, and if the stomach is unable to correct it, death must ensue. In general, however, the fatal event is avoided by its exciting vomiting, but its poisonous effect is too rapid to enable us to explain it from an assimilatory process. Breathing putrid air produces nearly similar symptoms, so that it must act as a sedative power on the nervous systems. From Dr. Evans' inaugural dissertation, published at Edinburgh in the year 1790, we find that putrid matter injected into the veins is almost immediately fatal. The human system, by habit, will, however, constantly breathe air infected to a certain degree with putrid miasmata, without injury. The constitution either resists their power, or gradually throws them off. If, however, any sudden cause of debility concur, they immediately show their peculiar virulence; and so rapidly, that we must attribute the previous immunity to the former cause. In general, also, as the effect of putrid matter communicated to the system is debility, so putrefaction only takes place in the human body from a diminution of the activity of the living principle. In the worst cases of putrid fever the blood we have found scarcely altered; for what change actually takes place is diminished by the discharge from the excrementitious excretories. The stools, the urine, the breath, and the perspiration, are offensive, while the albuminous part of the blood is only slightly attenuated. One apparent symptom of putrefaction in the blood is certainly owing to debility, viz. petechiæ. These arise from the laxity of the exhalents; and the blood, when out of the vessels, is subject to the usual changes of dead matter, while the power of the living principle is so greatly diminished.

When the powers of life are nearly destroyed, putrefaction soon takes place, and we then perceive the additional heat which attends this process. De Haen found the heat in a man, dying in a high degree of a putrid fever, two or three degrees above the usual standard; and a greater degree of heat in the hands of persons in a similar state has been the subject of observation and astonishment. It may add to the force of the former arguments to remark, that all causes of death which act immediately on the principle of life, as appears by their destroying irritability, are followed by an almost immediate putrefaction. The chief of these are lightning and narcotic poisons.

The means, then, of obviating putrefaction in the living body, is to support the energy and activity of the living principle. In fact, we have no other resource; for, while the circulating fluids are little changed, we cannot expect great effect from mechanical action of astringents, except we admit the reasoning we shall soon adduce. The nature, the kinds, and the comparative power of these it is, however, necessary to consider.

Putrefaction is prevented by cold, and by a high degree of heat in circumstances which favour evaporation. Meat is preserved in ice, and by smoking, though in the latter process the pyroligneous acid may have some effect. Heat, however, alone, while it dries, checks putrefaction. All astringents are supposed to be also antiseptics; for an obvious reason, that they contract the fibres, and separate any watery fluid that they may contain in their interstices. One other suggestion may come in aid. The tannin and the gallic acid have been lately found to be nearly connected in their nature, and in different proportions these are found in all astringents. Their action is on the albumen or gelatin, which they precipitate; and it will not escape probably the recollection of an attentive reader, that the only change which Parmentier and Deyeux could discover in the blood of persons in putrid fevers, was in this portion. May not then astringents precipitate this morbid ingredient, and may not the same change gradually taking place in every part of the body, which contains even lymph, correct the tendency to putrefaction in the whole system? It may be said, that after having combated the humoral pathology, we are reverting to it. We might plead guilty, and declare that we will not obstinately shut our eyes to any fact, however it may militate against our principles. In cases of dissolved fluids from putrefaction, however, we find often decided advantages from the purest astringents, if given in large doses, and steadily continued, particularly the oak-bark; and it would be highly improper to reject a medicine essentially of service because its effects cannot be readily explained.

The action of other antiseptics is not always clearly perceived; but a slight attention will support the reasoning just mentioned. Salt of amber, alum, myrrh, and asafœtida, are by far more powerful antiseptics out of the body than many astringents, but have little effect on putrid diseases. The bark, which is a powerful tonic, is not an active antiseptic in a phial; and chalk, which seems to accelerate putrefaction, is by no means injurious in putrid fevers.

If sea-salt be taken as a standard, all the other neutrals seemed, from the experiments of sir John Pringle, to exceed it in power. Nitre and kali were four times more powerful, and they appear to act by abstracting water, since their constant effect is to harden the meat. Alum, for a similar reason, appeared thirty times more powerful. Catechu, as may be understood from its astringency, was nearly equal; but we cannot easily explain the foundation of the power of asafœtida, myrrh, aloes, and, above all, fixed air, camphor, and charcoal, which are said to exceed sea-salt three hundred times. The circumstances of the experiments have not been clearly detailed. These substances as remedies are chiefly applicable to topical putrefaction or local gangrene.

We shall not detail these experiments more minutely, nor endeavour to reconcile many contradictions in different authors, since we find scarcely any facts applicable to medicine; and shall, therefore, point out the sources of more extensive information in the different writers. See PUTRIDA FEBRIS and SCORBUTUS.

See sir John Pringle's Diseases of the Army, appendix; Macbride's Essays; Essais pour servir a l'Histoire de Putrefaction; Dissertations sur les Antiseptiques qui ont concourues, &c. Dijon; Percival's Essays; Belengieri Considerazioni intorno alle Maladie Putride; Cartheuser de Remediis Antisepticis; Cullen's Materia Medica; Gaberi Experimenta de Putrefactione in Melanges de Philosophie, &c.

PUTRIDA FEBRIS, (from *putris*). Putrid fever, *febris continua putrida*, the plague, spotted or petechial fevers, pestilential, malignant, camp, jail fever, &c. See Culleni Nosologia; genus *typhus*.

A putrid fever has been the subject of alarm in every country, and at every period. It has on this account claimed the peculiar attention of physicians; but we can scarcely recognise it as a distinct variety, since the putrefaction is a symptom only. There is a striking distinction, as we have seen, in the exacerbating and more continued fevers; yet each may become highly putrid. Medicine has recorded no more fatally putrid diseases than the malignant remittents; and if these do not show so great a depravation of the fluids as the fever we are now to describe, it depends only on the predisposition of the patients; for this is the fever of jails and hospitals.

In reality, the putrid fever is the typhus-gravior of nosologists, distinguished by a comparative mildness of the early inflammatory symptoms, and increased debility in the progress, particularly in the latter stages. This debility, joined with the predisposition of the usual victims, occasion the high degree of putrefactive symptoms, which give it a character and a name. From the preceding article it will appear that the latter can have no other source. See NERVOSA FEBRIS.

Putrid fevers attack with more violence than the nervous; the cold is greater, the heat sharper and more permanent. The rigors, at first, are sudden, transient, and remitting; the pulse is more tense and hard, though generally quick and small, sometimes slow and regular, then fluttering and unequal. During the first twenty-four hours the alternate heat and cold are usually considerable; the fever increases every evening, and in the second week the patient becomes delirious. About the end of this period the delirium changes to a stupor; and about this time he is sometimes relieved. If a crisis does not, however, take place about the fourteenth day, or if some remarkable amendment is not observable about that time, the putrid symptoms in-

crease both in their number and degree, and the patient sinks under them. In the beginning, the headach and vomiting are violent; there is often a pain in the temples, over the eyes, and in the bottom of the orbit: the eyes are full and heavy, yellowish, a little inflamed; the countenance bloated; the temporal arteries throb, though the pulse at the wrist be small. Tinnitus aureum; great dejection of spirits; faintness; difficult respiration, mixed with sighing; breath hot and offensive; pains in the loins and limbs; an universal weariness; a load at the stomach, attended with pain and heat; a nausea, and often a discharge of blackish or bilious matter, add to the distress. In the beginning the tongue is white, then grows drier and darker, sometimes livid, black, or of a dark pomegranate colour. In the increase of the fever the thirst is greatest, and every liquor is mawkish and bitterish to the taste; but often the sense of thirst is inconsiderable during the whole of the disease. The lips and teeth are furred with a black tenacious sordes; in the beginning the urine is pale and vapid, high-coloured in the advance, and at last very brown or blackish, with an offensive smell; the stools blackish and very offensive, often passing off insensibly. After profuse evacuations by stool, the belly sometimes swells, and is tense; livid spots appear on the skin; hæmorrhages, and cold clammy sweats sometimes, though not usually, with convulsions usher in death. This happens at different periods, from the fifth to the eighteenth day.

In this fever the degrees of debility, oppression, and nausea, are more considerable than in any other; the prostration of strength, sudden and violent, has for its associates extreme despondency, or insensibility, and want of apprehension to an uncommon degree. The loss of appetite, or loathing of food, sickness, languor, with a dull pain of the head, are in the beginning always more severe than in the inflammatory, though seldom so violent as in the nervous, fever. The smallness of the pulse; the dejection of the spirits; the early insensibility; the high coloured urine and thirst; the broken texture of the blood; the purple spots, and the putrid state of the excrements, distinguish it from the milder typhus, and from inflammatory fever. Its formation is distinguished by coldness and shivering, accompanied with nausea, vomiting, confusion of the head, an extreme and sudden prostration of strength.

The prognostics are generally very uncertain. A red rash, and an inflamed scab below the nose, or about the lips, are usually favourable. Deafness at the decline is said to be a promising symptom; but it is often the effect of insensibility, which is always unfavourable. A change of voice, a wild stare, difficulty of swallowing, inability to put out the tongue, a constant inclination to uncover the breast, urine that deposits a dark or blackish sediment, insensibility to thirst, inflamed fauces, a diarrhœa with a swelled belly, bloody saliva, purple or livid spots on the skin, black aphthæ, laborious respiration, ichorous and fetid stools, cold sweats, or convulsions, are highly dangerous; and if many of these concur, little expectation of recovery can be entertained.

This fever chiefly attacks those who live in confined air, whose spirits are depressed by affliction, whose vital energy has been weakened by previous diseases or excesses. The weather most calculated to predispose the constitution to it, is a hot summer after a mild winter, fogs and rain without wind, and with a considerable temperature. A poor diet, diseased corn, and stagnant water, equally depress the living principle, rendering every cause of fever more peculiarly debilitating, and the disease itself, of course, putrid. In jails and hospitals, the confined effluvia from the human body readily become an exciting cause: in other situations, cold with damp, indigestion, the repulsion of evacuations, terror, apprehension, grief, or any cause of debility, will excite putrid fever.

The cure of putrid fever will appear from this and the preceding article to depend on every means of supporting the vital energy; but our attempts for this purpose must be conducted with some care, not only to prevent the matter already depraved and putrid from being confined, but to avoid danger from those local accumulations, which appear to constitute the essence of fever.

Bleeding is, in every view, inadmissible; but yet it has been employed, and we have repeatedly stated the foundation on which it may be useful; though in every asthenic fever we cannot advise the imitation of this rash practice.

The early appearance of nausea will appear to indicate *emetics*, and they should certainly be used, though with some degree of caution, so as not to exhaust too violently the strength. We have often remarked, that nausea is an effect of weakness, and where the vis vitæ is so certainly depressed we should, at least, keep in our view that it may arise solely from such depression. The ipecacuanha only should be used; for we do not always know how far the operation of antimonials may extend, and it should be followed by a warm cordial draught.

For all the reasons formerly assigned (see FEBRIS and CATHARTICA), *laxatives* are useful; but the acid ones, as tamarinds, prunes, and cream of tartar, are preferable. If a quicker action is necessary, the sena or jalap should be joined. Rhubarb, as a bitter and a tonic, has been sometimes employed; but the former kind has appeared to us preferable; though in the later stages, when the debility is considerable, we must trust only to clysters. Very few hours, however, should be lost in these preparatory steps; for the disease often hastens on with rapidity, and the worst symptoms sometimes occur so early as the fifth day.

Tonics, cordials, and *antiseptics,* must be very soon employed. The great dependence of practitioners is on the bark, and it must be given in considerable doses. This medicine will, even in these cases, sometimes produce a considerable stricture on the skin, and increase the uneasiness. This may be sometimes removed by the addition of camphor, which will also contribute to the benefits derived from the bark; but when this is insufficient, the aqua ammoniæ acetatæ may succeed. Should the bark be still borne with difficulty, we are constrained to add an antimonial: the safest is the powder of James; yet this can be seldom trusted, without a drop or two of the tincture of opium. The dose of bark should not be inconsiderable. If we begin with half a dram of the powder or extract, in a suitable draught of the decoction and tincture, every six hours, and find it agree with the patient, it may be soon increased to two scruples every four hours, and even farther if necessary. We have no other vegetable tonic of equal effi-

cacy in this variety of fever, and it forms an exception to the general rules laid down under the article. The oak bark may sometimes supply its place, but the dose must be much larger; and its astringency checks all discharges from the exhalents of the bowels, so as to bring on obstinate costiveness. Of the arnica we have no experience. The German physicians speak highly of its effects in putrid fever; but, from its sensible properties, and its botanical analogy, it seems to be only a narcotic bitter, with some acrid stimulating principle. (See ARNICA and BOTANY, nat. order *discoideæ*.) The other tonics most useful are the mineral acids. Of these the vitriolic is much employed, though by some authors the muriatic is chiefly recommended. They do not, at least in this disease, apparently differ: each is a valuable addition to the bark. Zinc and phosphorats have been employed apparently with the same views, but with little success.

Of every other medicine cordials only would supersede the bark; and with these putrid fever is sometimes successfully conducted, when the bark disagrees, or is rejected. The chief is *wine*, which it is necessary often to give in large quantities. We must recollect, however, that wine is an indirect stimulus, followed by a narcotic effect; so that when we begin, we must continue its use until nature can exert herself. In this case, and in all instances of putrefaction, whether general or local, our remedies are intended to supply the powers of nature. When these are roused, our exertions may be safely remitted; and we find that this effect is produced in general fever, when the pulse becomes fuller and softer, the eye more quick, the skin more clear, and the tongue more clean and moist; in partial gangrenes by a beginning separation of the mortified part. When wine disagrees with the stomach, good London porter is an excellent succedaneum, especially to those accustomed to it; and brandy may, though with less decided success, supply the place of either: to these aromatics will prove useful assistants. We say assistants; for alone they are unequal to the removal of the complaint. By the proper combination of such auxiliaries we have certainly succeeded in combating putrid fever, when the bark was inadmissible. In the latter case it has been sometimes given in clysters, we suspect with little real advantage.

There are numerous useful medicines which may be classed indifferently under the head of STIMULANTS or WARM DIAPHORETICS. They act probably in both ways, though chiefly as diaphoretics. We mean the *contrayerva*, the *serpentaria*, and the *camphor*. The two former were commonly employed by the Boerhaavians, and indeed often *misapplied* to the common bilious epidemics. In putrid fevers they are, however, sometimes useful, though less so than the cordials just noticed. The camphor is a remedy highly useful in this fever. It calms the low delirium, produces a genial glow on the surface, and seems to act as a steady permanent cordial. We have no reason to attribute any of these changes to an antiseptic power. *Opium* has often similar effects, though by no means so advantageous in putrid as in other fevers.

Of BLISTERS authors have spoken differently, according to the opinion formed of their effects. Their stimulus was supposed useful by some who dreaded the consequences of their evacuation; and the latter was thought the chief source of their utility by those who expected little from their stimulus. We have found them, on the whole, useful; have obtained little advantage from their stimulus; and had no reason to dread the debility arising from their evacuation. Having first given the result of experience when the theory had not occurred, we will add the explanation.

The usual accumulations in the head in fevers, if we except the nervous fever, the typhus mitior, seems to be accompanied with some action of the vessels, producing a degree at least of inflammation. In this variety, the vessels, in consequence of debility, yield without reaction; and the symptoms are those of fulness only, which blisters will remove; but their effects will not be so striking as when they counteract also increased activity. It has been the custom to apply numerous blisters, not only to different parts of the head, but to the arms and legs, apparently with a view of stimulating. When the patient has been capable of feeling the pain, these have been highly troublesome, and apparently exhausted the little irritability which remained. It is a practice to be wholly discouraged, as it is never useful, and often detrimental. Cataplasms to the feet, to render the circulation more equable, if not to rouse the patient, is a more probable remedy. Yet, we think, we never saw them advantageous.

Through the whole course of the disease, the bowels, either by the acid laxatives, by fruits, or by clysters, should be kept soluble, without such a discharge as to weaken. Two or three stools daily may be safely borne, though if so great an evacuation should appear to debilitate, even this number must be curtailed. It may be owing to this plan that we have never found the fixed air, in the form of *yeast*, necessary. Yet the experience of others speaks highly in its favour; and it is a remedy so easily procured, and at the same time so innocent, that to neglect it in emergencies is unpardonable. It has been used under our eyes; but apparently to us without benefit or injury. If the petechiæ suddenly disappear, a blister should be applied to the head, and large doses of camphor, with the warmest cordials, be given; but the patient can seldom be preserved. If vomiting continue, after the first exhibition of an emetic, the columbo root, with a slight opiate, will often relieve it. Too great evacuation by stool is best prevented by rice gruel, with cinnamon, and by clysters containing about sixty to eighty drops of tinctura opii.

From this view of the treatment of putrid fever, which contains the observations of the first practitioners, it will be seen how little dependence is placed on the most powerful antiseptics, and how much on cordials and general tonics. Asafœtida, for instance, is equally powerful as an antiseptic with camphor; but is never substituted for it. In this enumeration of the remedies, we have neither mentioned volatile alkali as a diaphoretic, nor the powder of chalk as a restringent; for both are septics. Yet we can truly add, that we have used each in the worst putrid fevers with advantage, for the purposes mentioned. Putrid fevers are, however, now so uncommon, that in this article we have been obliged to recur to cases of a very distant era. We can perhaps truly say, that we have not seen more than two accidental instances of putrid fever in thrice as many years at least; while, within a year, at a more distant

period, we have visited thirty. However it may be accounted for, such is the fact.

The general management of putrid fevers is not peculiar. The room should be large and airy, the liquors cold, the diet acid and acescent, consisting chiefly of the vegetable acids. Acid vapours, or even heated vinegar, in private practice, are of little use, if free ventilation be admitted. The stools, &c. should be immediately removed, the linen frequently changed, the communication with the external air kept up in different degrees day and night. The nurses should be frequently changed; and when relieved they should carefully wash themselves, and very often change their linen. With these precautions there is little danger of infection.

See Stoll, Aphorismi de Febribus et Ratio Medendi, part i. ii. and vii.; Hoffman Historia Febris Malignæ Petechizantis Halæ Grassantis, Supplem. ii. 2; Stahl de Malignitatis precipue Febrilis indole; Saalman Descriptio Febrium Malignarum in genere; Bianchini Lettere Medico-prattiche; Sarcone Istoria ragionata di Maladi a Napoli; Huxham, Grant, and Pringle on Putrid Fevers; Fordyce's Elements, part ii.; an Inquiry into the Causes, &c. of Putrid Fevers, by W. Fordyce, M.D.; Sydenham's Works, p. 201.

PYCNO'TICA, (from πυκνυω, *to condense*). See INCRASSANTIA.

PY'GÆ, (πυγη, *the buttocks*). See CLUNES.

PYLO'RICA ARTE'RIA, (see PYLORUS,) is a branch of the hepatic artery, which runs and is ramified on the pylorus, from thence to the cardia, anastomosing with the arteria gastrica dextra, and terminating on the pylorus by an anastomosis with the coronary artery of the stomach.

PYLO'RICA VE'NA is a branch from the vena portæ ventralis, sometimes a branc honly of the gastrica dextra. It passes over the pylorus to the short arch of the stomach, where it anastomoses, with its coronary vein.

PYLO'RUS, (from πυλη, *a door*, and ωρεω, *to guard*), the right orifice of the stomach; *janitor; portorarium, ostiarius.* It is a circular aperture, surrounded by a broad, thin, circular border, which consists of a duplicature of the two internal coats of the stomach, with distinct fleshy fibres in the doubling of the nervous coat. The inner edge of this ring is plaited and turned obliquely towards the stomach, and it certainly acts as a sphincter.

This part is subject to many diseases. In the Medical Observations and Inquiries is a case where it was contracted by an union with the liver; and Haller has observed it filled with abscesses. Contractions in this organ have arisen from substances swallowed, as a piece of money (Kerkringii Spicilegium); by cartilages (Bonetus); by callosities (Richter); by schirrosities (Andry Histoire de la Societé Royale de Medecine, and Cortier apud Haller Bibliotheca Medica); by steatoms and strumous glands (Brunner). It is diseased also by wounds, by cancers, and by palsy. Each disease is unfortunately beyond the reach of medical aid.

PYO'SIS, (from πυοω, *to suppurate*). See HYPOPYON.

PYRACA'NTHA, (from πυρ, *fire*, and ακανθα, *a thorn*; as its pyramidal leaves were supposed to resemble the flame of a candle). See LYCIUM BUXI FOLIIS.

PYRAMIDA'LES MU'SCULI. The PYRAMIDAL MUSCLES of the BELLY present themselves next to the ascending and descending oblique muscles, and were first discovered by Fallopius. They are situated before the extremities of the recti, arising from the fore part of the os pubis, close to the symphysis. They grow smaller as they proceed, end in a point like pyramids, and are lost in the linea alba, or the recti. Fallopius called them succenturiati, auxiliary muscles, from a supposition that they are only supplemental to the recti in their action, as the order of the fibres in both agree; and the latter are absent when the recti are continued fleshy to the juncture of the ossa pubis.

PYRAMIDA'LIA CO'RPORA. (See MEDULLA OBLONGATA.) The SPERMATIC CHORD, is also called *corpus pyramidale.*

PYRAMIDA'LIS NA'SI MUSCULUS, is also called *triangularis* and *anterior.* One extremity is inserted in the synarthrosis of the os frontis, and ossa nasi; from whence it runs down the side of the nose, and is again inserted into its cartilage.

PY'RAMIS, (so called from its shape). See CONUS FUSORIUS.

PYRE'THRUM, (from πυρ, *fire*; because of the fiery heat of the root). *Buphthalmum Creticum, bellis montana putescens acris; salivaris herba*; PELLITORY of SPAIN; *anthemis pyrethrum* Lin. Sp. Pl. 1262, is a trailing perennial plant, with finely divided leaves, and naked thick stalks, bearing each a large flower, with a yellow disk, surrounded with white petals on the upper side, and of a fine purple underneath. The root sinks deep in the ground like a carrot, is of a brownish colour on the outside, and white within. It is a native of the warmer climates, and is brought to us from Italy, but bears the cold of the northern regions, flowering from January to May. The roots which grow in England are larger than those from abroad.

The root is hot and pungent to the taste, but has little or no smell. Its pungency, which resides in its resin, is scarcely extracted by water, but completely by spirit. In distillation neither water nor spirit carries over any portion of it. The watery extract is most copious, the spirituous most active. It is chiefly used as a masticatory in toothachs and rheumatic affections of the face, to produce salivary discharge; and it has also been recommended as a stimulant in lethargic complaints, and paralysis of the tongue. Internally it is given in palsy, in amænorrhœa and cachectic cases, where the circulation is languid, in the same manner as arum root, in a dose of from five to ten grains. Dr. Lewis recommends a decoction of these roots with the tinct. aloes in clysters for the saturnine colic. As a stimulant gargle it is considered useful. ℞. Pyrethri contusi ʒss. aquæ distillatæ ℔i. coq. ad dimidium, colaturæ adjiciantur aquæ ammoniæ ʒij. m. It is not certain that the pellitory of the moderns is the same with that of the ancients. See Neumann's Chemical Works; Lewis's Materia Medica.

PYRE'XIÆ; πυρετικος, (from πυρετος, *febris*, and that from πυρ, *fire*). FEBRILE DISEASES; the first class in Dr. Cullen's Nosology. See FEBRIS.

PYRIFO'RMIS MU'CULUS, (from *pyrus, a pear*,

and *forma, shape*), *illiacus externus*, rises from the lower part of the os sacrum, where it is joined to the os ilium, passes through the sciatic notch, and is inserted into the inside of the root of the trochanter major, serving as a rotator, an extensor, or abductor, according to the direction of the thigh. See QUADRAGEMINI.

PYRI'TES, (from πυρ, *fire*), *marcasita*, *fer sulphure* of Haüy, iv. 65, is yellow, resembling bronze, crystalising in regular octoedra, of a specific gravity from 4.1 to 4.7. It strikes fire with flint; and is for this reason sometimes styled fire-stone. It contains sulphur; and when exposed to the air the sulphur attracts oxygen, producing sulphuric acid. Pyrites are never used in medicine.

PY'RIUS PU'LVIS, (from πυρ, *fire*). GUNPOWDER.

PYRMONTA'NA A'QUA. PYRMONT WATER, one of the principal chalybeates, is found in the county of Pyrmont, in the circle of Westphalia, in Germany. The spring is situated in one end of the village, and the water, as it rises up from the springs, seems to boil in its basin, and sparkles in a glass like the brightest champagne. It seems to yield different quantities of solid matter, at different times. Dr. Rutty mentions that the residuum which he obtained was of a pale brown colour, with a nauseous bitter taste, not deliquescing; of which about one-third was vitriolated magnesia, mixed with a little of sea-salt, the remainder consisting of selenite, calcareous earth, and ochre. Bergman found the Swedish kanne, containing 42,351 grains of this water, to be impregnated with ninety cubic inches of aerial acid, which is in the proportion of 130½ cubic inches from the English gallon of 61,440 grains: and the solid contents from his analysis were, from the English gallon of aërated iron, 4½ grains; of arerated lime, $29\frac{1}{6}$; of vitriolated lime-selenite, 55½; of aërated magnesia, $65\frac{1}{11}$; of vitriolated magnesia $36\frac{1}{11}$; of common salt 10½. Dr. Higgins obtained from a Winchester gallon of Pyrmont water, of selenite two pennyweights 13.2 grains; carbonated lime one pennyweight 22 grains; carbonated magnesia 15.6 grains; vitriolated magnesia 15.6 grains; oxide of iron 2.6 grains; vitriolated magnesia one pennyweight 6.7 grains; sea-salt 10.1 grains; with 192 measures of acidulous gas. At Pyrmont, the quantity of two, three, or more English pints of this water are sometimes drank in a morning, and it chiefly operates by urine. Its laxative effect is often assisted by the addition of vitriolated magnesia. It is chiefly used in debility of the stomach, and in bilious complaints. See AQUÆ MINERALES.

PYRO'LA ROTUNDIFO'LIA, (from *pyrus*, because its leaves resemble those of a pear-tree). See PARNASSIA.

PYRO-LIGNEOUS ACID, (from πυρ, *fire*, and *lignum, wood*); an acid obtained by distillation from beech, birch, or box wood, of a brown colour, and a somewhat acrid, burnt, smell. Fifty-five ounces of very dry beech chips yielded seventeen ounces of rectified acid, of an amber colour, not empyreumatic, somewhat heavier than distilled water. It has all the qualities of an acid, and supports the action of heat when joined to an alkaline base; but by a strong heat alone it is burnt like all other vegetable acids. It has a greater affinity to lime and barytes than to pure alkalis; but in other respects follows in the order of its affinities the acetous acid, from which it only differs by holding in a strong union a small portion of empyreumatic oil.

PYRO-LI'GNIS, (from πυρ, *fire*, and *lignum, wood*). PYROLIGNITES. Salts formed by the union of the pyrolignic acid with different bases.

PYRO-MUCOUS ACID is obtained from sugar, gum, and mucilages, by distillation, in which process carbonic acid and hydrogen gas are first copiously evolved, and a spongy coal remains. When rectified it has only a slight yellow tinge, and it cannot be concentrated by heat, as it is equally volatile with water; but by freezing it is rendered stronger, and has a pungent taste. When burnt in close vessels it leaves a coal like that of sugar; and is apparently a mixture of acetic and oxalic acids.

PYRO-MU'CIS, (from πυρ and *mucus*.) PYROMUCITES. Salts formed by the union of the pyro-mucic acid, and different bases.

PYRO-TARTAROUS ACID. The acid produced by distilled tartar in the naked fire. It differs little from tartar except in an acrimony derived from its oil.

PYRO-TA'RTRIS, (from πυρ and *tartarum*). PYROTARTRITES. Salts formed by a combination of the pyro-tartareous acid, and different bases.

PYRO'PUS, (from πυρ, *fire*, and ωψ, *aspect*). See PHOSPHORUS.

PYRO'SIS, (from πυροω, *to burn*). The WATER-BRASH, in Scotland; BLACK-WATER, in England; *pyrosis suecica* of Sauvages; *cardialgia sputatoria* of Linnæus. Dr. Cullen places it among the spasms, defining it a burning pain of the epigastrium, with a quantity of water, usually insipid, sometimes acrid, discharged by the mouth. He considers the pyrosis as an idiopathic disease; and observes that it is frequent among people in lower life, occurring also, though more rarely, in people of superior rank. It appears more frequently in persons under middle age, but seldom before that of puberty. When it has once taken place relapses are common, though but seldom in persons considerably advanced in life. It affects both sexes, but more frequently the female, when unmarried, or when pregnant, sometimes those only who are in that condition. The fits of this disease usually come on in the morning and forenoon, particularly when the stomach is empty. The first symptom is a pain at the scrobiculus cordis, with a sense of constriction, and as if the stomach was drawn towards the back: it is increased by raising the body into an erect posture, and is often very severe. After continuing for some time, it brings on an eructation of a thin watery fluid in considerable quantity; sometimes acid, but more frequently insipid. The eructation is frequently repeated without relieving the pain which preceded it, though at length it terminates the fit. No exciting cause can be discovered; but it more frequently attacks those who live on milk and farinacea. Cold applied to the lower extremities, and often every considerable emotion of mind, will appear to bring them on. The disease, according to Dr. Cullen, seems to begin by a spasm of the muscular fibres of the stomach, communicated to the blood-vessels and exhalants, so as to increase the impetus of the fluids in the vessels, while a constriction takes place on their extremities. The increased impetus pours out a

larger quantity of fluid than usual, while the constriction upon their extremities allows only the pure watery parts to pass, analogous in every respect, he thinks, to what happens in the diabetes hystericus. Opium relieves the paroxysm. The vitriolic ether, volatile alkali, &c. are sometimes of service; and Linnæus speaks of the nux vomica as useful. These, however, relieve only for a time, and to prevent the returns of this disorder is not easy. The metallic tonics have not been sufficiently tried; and the zinc, perhaps the bismuth, may be salutary. See Cullen's First Lines, vol. iv.

It is also the name of a disease in the ear, which affects the patient as if a burning coal was applied.

PY'RUS, (because its fruit is shaped like the flame of a candle). The PEAR-TREE, *apios*. The tree and fruit are sufficiently known: from pears the liquor called *perry* is obtained by expression; a light pleasant drink, though without a sufficient strength to agree with weak stomachs. Like champagne, it abounds in an aerial fluid, probably carbonic acid gas.

PY'RUS CYDO'NIA. See CYDONIA.

PY'RUS MA'LUS. See MALUS SYLVESTRIS.

PY'THON. See OB.

PYU'LCON, (from πυον, *pus*, and ἑλκω, *to draw*). An instrument to draw the matter from the cavity of the breast or any sinuous ulcer.

PYU'RIA, ARTHRI'TICA, MUCO'SA, vel VIS'CIDA, (from πυον, *pus*, and ουρον, *urine*). See DYSURIA.

PYXIS, a BOX; sometimes the name of the acetabulum of the hip-bone, from its resemblance to a box.

Q.

Q. P. *Quantum placet;* as much as you please.

Q. S. *Quantum sufficit;* as much as is sufficient.

Q. V. *Quod vide;* which see, when the preceding word is referred to.

Q. V. *Quantum vis;* as much as you will.

QUACKS, and QUACK MEDICINES. The appellation of QUACK arose from *quacksalber*, the German appellation of quicksilver; since on the first appearance of lues the irregular practitioners only employed this reputedly dangerous medicine. At present it is confined to those who sell a pretended nostrum, the preparation of which is kept secret; but may be applied to every practitioner who, by pompous pretences, mean insinuations, and indirect promises, endeavours to obtain that confidence which neither success nor experience have entitled him to.

The human mind is captivated by confident promises, especially if, like the oracles of old, they are couched in ambiguous language, and if they are directed to those points which are most interesting, and which chiefly influence the imagination. We have often observed that the idea of a latent lues is with difficulty eradicated; and that no failure is so sensibly felt as that connected with the function by which the species is reproduced. For these reasons, remedies are held up with the most indecorous ostentation as infallible in such cases; and the mind is allured by promises that the medicine is equally safe and secret. We know a single individual who, on the latter pretence, for years expended from 70*l.* to 100*l.* annually in trash like the solar tincture, and the balm of Gilead; and the author of this article was asked if he had not a high opinion of Dr. Freeman, by a patient who professed himself almost ruined in the pursuit of quacks, and had determined to leave them.

There are undoubtedly various remedies sold by plausible, captivating titles, which are truly insignificant; others of some service; others highly useful. Had the remedies of quacks been always despised, we should have wanted the compound powder of ipecacuanha; the sudorific powder of Ward; some of the aloetic tinctures and pills; the powder of Dr. James; the paste of Ward, &c. The nature of these remedies is now known; but there are others which are valuable, whose nature we know, though the particular preparation we are unacquainted with.

We had intended to have noticed the quack remedies at some length, and could have pointed out the principles of many with some certainty; but we found that we "walked on burning coals ill concealed by delusive ashes." We shall, therefore, add only a few remarks on the different classes just distinguished.

Of the trifling, insignificant remedies, those recommended for coughs and consumptions are the most inert. The balsam of liquorice, of lungwort, and honey, are little more than opiates in disguise; for it is well known that the valuable parts of each medicine consist in mucilage, which is incapable of concentration. Godbold's balsam is of a similar kind. We have, however, reason to believe that it was first prepared from the various, supposed expectorants of an old herbal, since Godbold (the elder), though an ignorant, seemed an honest, man; and he professed that he had given us the receipt. This idea is since supported in a late periodical publication, the "*Medical Observer.*" At present, however, it is certainly only vinegar and honey, with a proportion of laudanum, and some aromatic, varied apparently at different times. The solar tincture, the balm of Gilead, and the whole tribe of pretended restoratives are at best trifling, unless, as is suspected, the balm contains a stimulus, which gives temporary activity at the expence of the little remaining strength. Many of these cordials owe their reputation to the spirit; and we knew a lady who thought she could not live without them, till her brother filled an empty bottle with brandy only, which she continued taking without discovering the difference till he explained it, and convinced her of her folly. Our own country, however, does not exclusively furnish dupes. The continent, particularly Germany, swarms with them; and one of the latest as well as the grossest impositions of this kind was Dr. Lendhart's liquor for accelerating delivery, which was found to be a solution of Glauber's and Epsom salts, disguised by an innocent colouring. But though in itself an imposition, it were to be wished that every quack remedy were ultimately so useful; for by inspiring confidence it reconciles the patient to delay, when nature frequently succeeds in the attempt. Numerous are the valuable remedies introduced, in this secret way, first in Germany; among the rest is the zinc, styled the *luna fixata Ludemanni*, first detected by Gaubius.

There are certainly many medicines of some utility under this disgraceful form; and if those who object to the charges of an apothecary will be contented in this way to pay them ten times told, the revenue will gain, and no one be materially injured. There can be little

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doubt of Dr. James' analeptic pills being accurately prepared at a moderate expence, and Anderson's pills may undoubtedly be sold at an inferior price of equal goodness. The antimonial in the pills of Dr. James probably suggested to Mr. Barclay, as it did many years since to ourselves and many others, the union of emetic tartar with the resinous purgatives. It undoubtedly quickens and facilitates their action; and Barclay's pills are a warm, useful laxative, particularly convenient for those to whom aloes may be injurious. It is not to our purpose to add that every apothecary's apprentice could have composed an equally useful medicine, and one less inconvenient from its bulk, or that from any apothecary it could have been purchased at a much cheaper rate. *Si populus, &c.* It reminds us, however, of an application made by a druggist to an apothecary to furnish a composition of this kind, which he engaged to vend in considerable quantities, by the simple expedient of affording a larger allowance to the retail trader than he received by any rival medicine.

Whitehead's essence of mustard is a similar medicine, and an elegant form of turpentine, with camphor, perhaps opium, which was well known, and used long before Mr. Whitehead's existence. The various remedies for the hoopingcough, when internal, are either opiates or the white vitriol; when external, the polish embrocation of oil of amber, ammonia, &c. The soda-water is well known; and the sodaic powder, which is, however, a solution of soda, with a rapid *extrication* rather than the *union* of fixed air, we have already mentioned. If added to the water, and the whole immediately confined with wire in a strong jug, soda water may undoubtedly be prepared from it; but an effervescing saline draught is, in its proposed form, an equally efficacious and a more elegant remedy.

There are other preparations which contain active medicines, which should not be entrusted to common hands. Of these the secret remedies for the venereal disease, which stare every one in the face, at the appropriate corners, where the disease is most felt, are particularly obvious. All these preparations undoubtedly contain mercury in its most active forms, and the authors defy detection by the smallness of the dose, the deep colour, and the viscidity of the fluid which contains it. Modern chemistry has, however, many resources, which cannot fail to discover the deception. Gowland's lotion is equally a mercurial, and highly pernicious. Numesous are the lives which have been sacrificed to it within our own observation; and those who have escaped, have passed their remaining days in torture or distress. Spilsbury's drops, a solution of muriated mercury, are less injurious, because the dose is small and they do not repel; but indiscriminately used have been highly injurious.

The composition of Ching's lozenges is well known, and they contain calomel; in the brown kind united to resin of jalap. They are undoubtedly active medicines, and often on that account injurious when indiscriminately employed; nor is it certain in these preparations that the calomel is always properly prepared. The opium in Godfrey's cordial and Dalby's carminative is also frequently dangerous, by indiscriminate use, and many children's lives have been sacrificed to the impatience of nurses, though in proper hands each is a pleasing and useful anodyne. The concentrated essence of ginger, in the same manner employed in the relief of colic, has more than once induced inflammation of the bowels under our own eye.

We have thus selected some of the most common medicines as instances of the different forms which empiricism assumes, viz. merely picking the pocket, without any advantage; demanding an extravagant price for common medicines; and holding up confident promises by medicines of real activity, which, by undistinguishing ignorance, become really injurious. The legislature demands the receipt of the remedy before it grants the patent; but this is eluded by general directions, by multiplying useless steps in the process, as in Whitehead's specification, often concealing some leading observation essential to its success; nor is any security given that the medicine shall be always prepared according to this process. Every patent requires, we apprehend, that the *principle* should be new; and if it be not, an action cannot lie for its infringement. If this be true, we would engage to show the principle of every patent medicine in works long since published, and very often the process described much more accurately than in the specification.

The confident promises are supported by numerous attestations. How these are procured is well known; and common names, in remote parts of the metropolis, or in distant provincial villages, are secure from detection. The answer of one man, who had given a countenance, perhaps an attestation, to every quack who visited the town in which he lived, will perhaps explain the mystery. "I thought it an honest way of gaining half-a-crown; for I did no one any injury."

The conduct of those in superior ranks of life, who sanction by their names the circulation of the most injurious medicines, demands some severer strictures. "What," it will be alleged, "should hinder me from publicly saying that I was relieved from a given disorder by such a medicine?" The very circumstance that, as you know not the disease, you cannot ascertain the reality of the cure; nor can you say it was owing to the medicine. A physician who has spent his life in study and observation finds himself often baffled in these conclusions; and yet they are rashly drawn by persons wholly unacquainted with the subject, whose minds have received little cultivation, or who have directed their attention to very different sciences. Credulity and confidence are the constant companions of ignorance; and the wisest man must be ignorant of professional subjects if that profession has claimed no share of his attention.

QUADRAGE'SIMUS DIES. The fortieth day was, in the opinion of the ancients, the last to which acute distempers could extend. Dr. James observes, that he hath seen an acute disease which continued sixty days; but the logical rather than the medical accuracy of the observation might be questioned if the subject merited a moment's consideration.

QUADRANGULA'RIS, (from *quadrus, four square,* and *angulus, an angle*). A leaf of a plant that has four prominent angles in its edge.

QUA'DRANS. See CYATHUS.

QUADRA'TI MU'SCULI. See OCCIPITALIS MUSCULUS. DEPRESSORES LABII INFERIORIS.

QUADRATUM, (from *quadra, a square*). See CUBOIDES.

QUADRA'TUS BUCCAS DE'TRAHENS. See ADDUCTOR AURIS.

QUADRA'TUS FE'MORIS. This muscle is flat, thin, and fleshy, by no means square: it rises tendinous and fleshy from the lower edge of the tuberosity of the ischium, and is inserted into the line between the trochanter major and minor, serving to bring the thigh outwards.

QUADRA'TUS GE'NÆ. See PLATYSMA MYOIDES.

QUADRA'TUS LA'BII INFE'RIORIS. See DEPRESSOR LABII INFERIORIS.

QUADRA'TUS LUMBO'RUM, *quadrigeminus*, and *lumbaris externus*. This muscle rises from the posterior part of the spine of the ilium, whence it goes to the transverse processes of the four upper lumbar vertebræ, and partly from these transverse processes to the last rib, and by a small tendon passing under the diaphragm into the side of the last vertebra of the back. This muscle, therefore, lies between the contents of the belly and the erectors of the back, serving to pull the body to one side, by bringing the last rib down. See ABSCESSUS LUMBORUM.

QUADRIFO'LIUM, (from *quatuor, four*, and *folium, a leaf*). A grass with four leaves on each stalk. See TRIFOLIUM.

QUADRI'GA, (from *quatuor*, and *juga, yokes*). *Cataphracta*. A bandage for the sternum and ribs, called from its resemblance to the trappings of a four-horse car. It is twenty-four feet long, three or four fingers broad, with two heads, to bind upon the thorax and sternum when the ribs are fractured. The middle is placed on one side of the body; the two heads are carried so as to intersect on the opposite shoulder; they are brought back to where they begin, and then pass circularly round the body.

QUADRIGE'MINI, (from *quatuor*, and *geminus, double*). A name for the following muscles taken together, viz. *pyriformis, gemini*, and *quadratus femoris*.

QUADRIGE'MINUS. See QUADRATUS LUMBORUM.

QUADRIJU'GUS, (from *quatuor*, and *jugum, a yoke*). A leaf composed of four pair of folicles.

QUADRILO'BUS. A leaf consisting of four lobes.

QUADRILOCULA'RIS. A berry with four cells.

QUANTICAMO'TLI. See CASSADA.

QUA'QUARA. See CHINA ORIENTALIS.

QUA'RANTAINE. (French.) QUARANTINE, or QUARANTAIN. The term is derived from the space of forty days, being the time which a ship suspected of infection is restrained from any intercourse or commerce, lest that infection should be communicated to the inhabitants of the country. We have already made some observations on this subject (vide PESTIS), to which quarantine is chiefly applicable. Infection, however, is not so much dreaded; and, as we have remarked on the subject of the yellow fever, the apprehensions need not in many cases be considerable, unless the constitutions of the inhabitants could be imported with the disease. See Howard on Lazarettos.

QUARTA'NA FE'BRIS, vel QUARTA'NA LEGI'TIMA. An AGUE, or QUARTAN INTERMITTENT FEVER, which Dr. Cullen defines similar paroxysms within the space of twenty-four hours nearly; the accessions coming on in the afternoon. (See INTERMITTENS, vol. ii. p. 98.) It receives different names from its symptoms, viz. *quartana comatosa, siphylitica*, &c. (See Cullen's Nosology.) A quartan is usually both more violent and obstinate than a tertian, and is called spurious when the fit begins at any other time of the day than about four or five o'clock in the evening.

The quartan is distinguished by the steadiness of its attack, about four or five in the afternoon, seldom anticipating or retarding, and by the shortness of its paroxysm. It is seldom attended by much agitation; but the coldness continues often for more than two hours. Vomiting and diarrhœa are less frequent than in tertians. The heat is less violent; but the sweating is inconsiderable. The intermission is never perfectly complete, and is sometimes very imperfect, much fever continuing in the intervals. It has then the name of *quartana continua*.

The quartan was supposed to be the opprobrium medicinæ; and to cure a quartan was supposed to be the acme of the art, and the highest power of any febrifuge. We have said, that in thirty-five years practice we have seen but one quartan, brought from Coxheath camp. This had resisted every remedy; but was at last cured by arsenic; perhaps by a change of air.

QUARTA'NA SPU'RIA. SPURIOUS QUARTAN, hath no certain period for its returns, which generally occur in the forenoon: the heat also is greater, and affects the patient more than the cold fit does.

QUARTA'RIUS, (from *quartus, fourth*). A measure which contains about four ounces, or one quarter of a pint.

QUARTA'TIO, QUARTU'RA. QUARTATION is an operation in chemistry, by which the quantity of one thing is made equal to the fourth part of the quantity of another. Thus, when gold, allayed with silver, is to be separated, we are obliged to facilitate the action of the aqua fortis by reducing the quantity of the former of these metals to one-fourth part of the whole mass, which is done by sufficiently increasing the quantity of the silver, if it be necessary. Some extend this name to the operation of parting. See DEPART.

QUA'SSI LIGNUM, vel QUA'SSIA AMA'RA. QUASSI WOOD, or BITTER QUASSIA, called from a negro who lived at Surinam, and used it medicinally, with success, in intermittent, malignant, and putrid fevers; *quassia amara* Lin. Sp. Pl. 553. The wood hath no smell, and is a very pure bitter, without any astringency. An infusion in boiling water is the best preparation. A dram may be infused in a pint of boiling water, and an ounce may be given for one dose; but the proportion of the wood is sometimes greater, without adding to the virtues of the medicine. The watery extract is given in a dose of from ten to twenty grains.

It scarcely differs from a pure bitter; but was given with serpentaria, in the intermission of malignant tertians, when the bark could not be borne. Any other bitter would have had a similar effect; nor has the quassia superior powers to the gentian or the camomile flowers, except in the optics of weak minds or quacks. We observe among the quack medicines the *anima quassiæ*. It is the *soul* of the author, as of the licentiate in the Introduction to Gil Blas. Cullen's Materia Medica.

QUA'SSIA, *simaruba*. See SIMARUBA.

QUATE'RNUS, (from *quater, four times*). When the leaves of plants stand four on each side.

QUA'TRIO, (from its four sides). See ASTRAGALUS.

QUE'RCERA. See EPIALA.

QUE'RCULA, (a dim. of *quercus*), *calamandrina*. See CHAMÆDRYS.

QUE'RCUS. THE OAK-TREE, *quercus robur* Lin. Sp. Pl. 1414. The COMMON ENGLISH OAK-TREE. The bark is a strong astringent, moderately bitter, without any particular smell; striking with iron an inky blackness. It hath been used with success in intermittent fevers, for restraining hæmorrhages, alvine fluxes, and other immoderate evacuations; in gleets, gangrenous wounds, and ulcers. (See PUTREDO.) It yields its virtues both to water and rectified spirit, and is used as an astringent, in decoction, in slight tumefactions of the mucous membrane of the fauces, a prolapsus uvulæ from a slight cold, and a cynanche tonsillaris; as a fomentation, or lotion, in *procidentia ani et uteri*. Alum often renders it more efficacious. Half a dram of the powder given every two or three hours during the intermission of a fever, joined with camomile flowers, is said to have prevented the returns of paroxysms of intermittents. The same virtues are said to belong to the scaly cup, which embraces the bottom of the acorns, called *glandes*, and *balani*. Cullen's Materia Medica.

The bark is often used in the following form as an astringent lotion. ℞ quercus contusi ℥ii. aquæ distillatæ ℔ij. coquantur ad ℔i. See GALLÆ.

QUE'RCUS COCCI'FERA. See CHERMES.

QUERCUS MARI'NA. See KALI.

QUE'RQUERA, (from *querquero, to quake*). See PHRICODES.

QUIETA'LES, (from *quies, rest*). Diseases in which the voluntary, the involuntary motions, and the senses, are diminished; a class in the nosology of Linnæus.

QUI'NA QUI'NA. See CORT. PERUV.

QUI'NCUNX. See CYATHUS.

QUINQUE-COCCUS. Having five berries.

QUINQUEFO'LIUM, (from *quinque*, and *folium*); *pentaphyllon*. COMMON CINQUEFOIL, FIVE-FINGERS, or FIVE-LEAVED GRASS, *potentilla reptans* Lin. Sp. Pl. 714, is a trailing plant, with serrated leaves, set five together, on long pedicles; perennial, growing wild on clay grounds, and flowering in June. The roots are astringent; yielding their virtue to water and spirit. The leaves resemble in their nature the roots. See Raii Historia.

It was employed by Hippocrates in the cure of intermittents, and according to Ray still used by the peasantry with this intention. The external or cortical part of the root, containing chiefly the medicinal quality, is employed internally in diarrhœas and other fluxes, and externally in gargles and astringent lotions. As the cinquefoil is inferior in efficacy to many other plants of the same class, it is now rarely used, though it may be found no bad substitute for several of the other astringents. Dose in substance, one dram.

QUINQUE-JU'GUS, (from *quinque, five*, and *jugum, a yoke*). A leaf composed of five pair of lesser leaves.

QUINQUE-LO'BUS. Composed of five lobes.

QUINQUEPARTI'TUS. A leaf consisting of five divisions down to the base.

QUINQUI'NA, (corrupted from *cinchona*). See CORTEX PERUVIANUS.

QUINQUE-NE'RVIA, (*quinque, five*, and *νευρα, strings*). See PLANTAGO MINOR.

QUI'NTA ESSE'NTIA. The peculiar, most concentrated essence of a plant prepared by agitating with any essential oil twelve times its quantity of pure alcohol till the oil disappears. If these are distilled in a close vessel, with a fire of 90°, the alcohol will rise with only the purer part of the oil. If the thinner part is several times carefully separated, by repeated gentle cohobation, the alcohol will be impregnated with a still purer oil, or, in other words, the oil will gradually disappear.

What are styled quintessences are sometimes made by dissolving an aromatic oil in alcohol, adding ten times its weight of sugar, finely powdered, and placing the mixture in a proper vessel to exhale the spirit. The sugar will remain dry, but with the virtues of the oil in it. A scruple in a glass of wine is a good cordial, but both are now disused.

QUINTA'NA, (from *quintus, the fifth*). An AGUE, the paroxysms of which return every fifth day, while the second, third, and fourth, are free from fever. This, as well as the *sextana, septana, octana, nonana, decimana*, &c. are generally denominated *erratica*; for the periods are never regular, and they require no peculiar treatment. For the varieties, see Sauvages' Nosologia Methodica.

QUISQUI'LIUM. See CHERMES.

QUOTIDIA'NA FE'BRIS, *amphemerina, amphemerinos, methemerinos*. A QUOTIDIAN INTERMITTENT intermits, but returns every day, generally early in the morning: when the fit approaches at any other time, it is called spurious or anomalous. Dr. Cullen defines it an intermittent fever, in which similar paroxysms occur in the space of twenty-four hours; the paroxysms attacking in the morning. When its attack is general, returning at the same hour in the morning, it is called simple or true quotidian; when partial, it receives the name of the part affected, as *quotidiana cephalalgiea, ischiadica*, &c. &c. The hysteric, catarrhal, and strangurious quotidians which have evening paroxysms, appear to be only symptomatic. See INTERMITTENS FEBRIS. When the intermissions are not distinct, it is called a *remittent*, sometimes a *continued quotidian*.

QUOTIDIA'NA SOPORO'SA, vel TERTIANA CAROTICA. A tertian fever attended with comatous affections.

R.

R. The abbreviation of RECIPE, the inelegant commencement of a prescription, concluded often more barbarously. The imperative mood, though it was conspicuous in every line of the former edition of this Dictionary, is always inelegant; and the verb *recipere* has scarcely in any instance a meaning analogous to the English word " take," which should be confined to the pages of Hannah Glass. How much more elegant would be a commencement of this kind: *Habeat haustus solvatur, misceatur,* &c. previous to the enumeration of the ingredients, and *haustus hujusmodi sumatur,* instead of *misce fiat haustus?* The pages of Celsus contain no such word. We cannot, however, expect a reform in this respect, while prescriptions are written by those to whom the grammatical construction of their own language is often a science yet untaught.

RABDOIDES, (from ῥαβδος, *virga,* and ειδος, *similis*). See SAGITALLIS SATURA.

RA'BIES CANI'NA, (from *rabio, to be mad*). See HYDROPHOBIA.

RACE'MUS, (a dim. of *ramus, a branch*). A BUNCH of GRAPES, of IVY-BERRIES, or other fruit which grows in clusters; sometimes a stalk divided into several branches, sustaining each a flower or fruit, set thick together.

RACHIA'LGIA, (from ῥαχις, *spina dorsi,* and αλγη, *dolor*). Pains of the bowels, supposed to arise from the nerves of the spinal marrow. See COLICA.

RACHIA'LGIA PI'CTONUM; META'LLICA; AB ADIAPNEU'STIA; TRAUMA'TICA. See COLICA.

RACHITÆ, or RACHIÆ'I, (from ῥαχις, *the spine*). The muscles belonging to the back.

RACHI'TIS, (from ῥαχις, because it was supposed to be a disease of the spinal marrow). The RICKETS, *cyrtonosus;* the ENGLISH DISEASE, because it first appeared in England about the middle of the seventeenth century, and from thence is said to have spread over Europe. Dr. Glisson thinks that it was first observed in the west of England, between the years 1600 and 1620; but from many passages of Latin authors ridiculing deformity; from Thersites, the supposed Æsop of Greece; the Vari, Volgi, &c. of the Romans, deformities almost exclusively derived from this disease, we may reasonably suppose it a very ancient one, especially as it certainly does not arise from any specific infection. Van Sweiten and Trinka contend for its novelty, Zeviani for its antiquity.

Usually the first appearance of this kind is in the eighth or ninth month of the child's age. The several parts of the body by degrees become disproportioned, the skin grows lax, the belly flaccid, the muscles are extenuated, particularly those of the neck; the joints of the hands, arms, knees, and feet, are enlarged, so that there seem to be excrescences on the bones of the wrists and ankles; the bones and the spine, too weak to support the body, are at length incurvated; the child walks with more difficulty, until this exercise becomes too troublesome to be continued; the carotids and jugulars swell, but the other blood-vessels disappear; the head grows large; the sutures are more visible; the fontanel is often membranous; the neck too weak to support the head steadily. The countenance is, however, lively, and the child is more sensible than usual at the same age; the breast is strait, and compressed on its sides; the sternum rises up in a point, and the extremities of the ribs are enlarged and crooked; the hypochondria swell; fever, with symptoms of consumption, comes on, and the patient sinks from debility. In children predisposed to rickets the teeth come forward slowly, and soon decay. The appetite, however, seldom fails; but digestion is seldom perfect.

The rickets chiefly prove fatal from the attending hectic, consumptive symptoms, or asthma. If the disorder continues after the fifth year of the child's age, the body usually continues weakly and deformed for the whole life. When from a damp air or a bad diet, if succeeded by the small-pox, the itch, or other cutaneous eruptions, and not accompanied with considerable incurvation of the bones, or inability to motion, the cure is not very difficult. The bones of the legs, though very crooked, will become nearly, often perfectly, straight during the growth of the child, if it becomes strong and healthy.

It is a species of cachexy, thus defined by Dr. Cullen. The head large, and much swelled anteriorly; the knees swelled; the ribs depressed; the abdomen tumid, and the other parts of the body emaciated. He distinguishes two varieties, the simple and the complicated rachitis. On dissection the muscles are found pale and flaccid, the livers indurated, the mesenteric glands enlarged and hardened, the bones spongy. Its usual period of attack is from six months to two years. Stoll

in his Lectures, and Thomas in the Journal de Medecine, mention its attacking adults. The top of the spinal marrow is said to have been uncommonly hard and obstructed; water is sometimes found between the dura and pia matter; and the brain is enlarged.

The remote causes are those of debility only. A cold moist atmosphere disposes to the disease, and it is, therefore, more frequent in marshy countries, as in Holland, at Halle in Saxony, and in the marshy districts of this kingdom.

The exciting causes are want of exercise and unalimentary food, particularly those substances which abound with water, which are not susceptible of change by the process of digestion, and consequently are not animalised. This defect of animalisation, as hinted in the article MORBI SOLIDI SIMPLICIS, q. v., seems the chief cause of rickets. The digestive powers and the general strength are impaired before the disease comes on; the belly swells, from flatulence and a retention of the more solid matter, in consequence of an obstruction in the lymphatic glands. We have observed, in the article just referred to, that animal gelatine differs from vegetable gelly chiefly from the addition of nitrogen; and this addition renders it less soluble in water. The bones of young infants are gelatinous; and in this jelly the osseous matter, we have said (see BONES), crystallises. If this jelly then is not animalised, at least in some degree, it is dissolved in the water of the blood, and washed away. This view of the disease connects very strikingly the early symptoms and the cure.

A deficiency of bony matter in the system has been supposed by some late French pathologists to be the cause of rickets; but if the observations just adduced have any weight, the disease should rather be attributed to a want of the proper matrix in which the bony matter is deposited. We now know, from the later experiments with madder, that the serum rather than the bony matter is the medium of its deposition and removal; nor is it improbable that the watery state of the lymph is the real cause of the softness of the bones in this instance. By these means also we remove the objection, started by a late author, that the mollification of bones has been found connected with gout, where the phosphat of lime is apparently in excess; an objection, however, of little importance, and perhaps easily replied to on other foundations.

The ratio symptomatum is perfectly obvious. The ribs fall down from want of resistance; the child straddles in his walk, from the bulk of the belly, and from debility, and the legs are consequently bent. The upper part of the bones, where the cancelli are most numerous, yield most easily to the pressure, and consequently are enlarged in their diameter. The head swells in consequence of the diminished resistance of the bones to the distending arteries; the sutures and the fontanelle consequently separate.

We know not whether the freer circulation through the brain may render the intellectual powers more clear and brilliant. It is, however, highly improbable, when we compare the state of the cranium in different diseases with the changes in the intellectual functions; and we would rather refer the increased acuteness to the less active life, to more frequent opportunities for observation and reflection; which we find in many diseases, where the young patient is confined to his chair.

As the digestive powers are apparently injured, it is the first object to clear them from mucus, and every impurity which would impede digestion or absorption. The directions, therefore, in every practical author, are to begin with emetics, followed by gentle, steady laxatives. The rhubarb, as a bitter, has been selected, sometimes calomel. Tonics are then employed; and steel, either in filings, combined with ammonia, or in tincture, has been preferred, and sometimes used with rhubarb. Copper, as a tonic, is recommended by Buckner and Dupau. Peruvian bark is spoken of in general terms, as if not tried, or used with little decisive effects. Our own experience in this disease is inconsiderable; but we should certainly prefer tonics, which had no admixture of astringency, and even the pure bitters to the bark.

Fourcroy recommended breathing oxygen gas; but it was probably not successful, for it has not been imitated. Madder has been frequently given in this disease, though we are unable to ascertain the principle of the practice, except the vague idea of its having the strongest affinity to the bony matter, which we now know to be fallacious. Joined with fixed alkali, according to the plan of Abilgaard, in the Copenhagen Medical Transactions, it may be apparently of service from its accompanying medicine. The cicuta is warmly recommended by Storck; but his cases and reasoning are more astonishing than convincing.

Saponaceous medicines are mentioned as deobstruents; and in the fourth volume of the Edinburgh Medical Commentaries we find a striking instance of the good effect of the fixed alkali joined with bark. We can easily perceive the source of the relief derived from the former medicines; for the alkali would probably contribute to dissolve the lymphatic tumours, or might possibly supply azote to the blood. The empirical practice in the western islands strongly confirms the theory of the disease which we have suggested; for they rub the arms and wrists, and successively the whole body, with the oil of the skate. It is evident that this furnishes a supply of animal matter to the blood, for it excites fever; and when this effect is no longer produced, the surface to be rubbed is increased, and at last the shirt is wholly impregnated with it. Edinburgh Medical Commentaries, vi. 105.

Dry frictions and the warmest stimulating liniments are also recommended, and sea-bathing is often very salutary, though, if the child be very weak, the tepid sea-bath at about 82° should be premised.

The diet should be generous and nutritious, chiefly animal, though in a fluid form; and the stomach may be stimulated by a slight addition of spice. The air should be dry and moderately cold, and the child kept much abroad, occasionally allowed to walk, but seldom for a long time together, so as to fatigue. The swing will afford proper exercise, and occasionally he may be carried on a horse.

Wine is seldom highly useful; nor do we find that the mineral acids are spoken of with warm commendations, though a promising remedy. If alkalis, however, are eminently successful, no great advantages can probably be derived from their opposite. The French physicians, in pursuance of their theory, have given phosphat of lime, but without any decided benefit.

See Boerhaave's Aphorisms; Buchner de Rachitide;

Sydenham's Works; Glisson de Rachitide; F. Hoffmanni Opera, tom. iii. p. 487, &c.; Medical Museum, vol. i. p. 66. 71; Edinburgh Medical Commentaries vol. ii. and iv.; Cullen's First Lines, vol. iv.; Zaviani della cura de' Bambini, attachati della Rachitide; Memoires de la Societè de Medecine.

RACHO'SIS. (from ῥακοω, *lacero*). Excoriation of the relaxed scrotum.

RACK. A Tartarian liquor, highly intoxicating, prepared from mare's milk.

RADIÆ'US, (from *radius*). See FLEXOR CARPI RADIALIS.

RADIÆ'US EXTER'NUS. See EXTENSOR CARPII RADIALIS, LONGIOR and BREVIOR.

RADIA'LIS, (from the same). The nerve so called. See CERVICALES.

RADIA'LIS, vel RADIÆ'A ARTE'RIA, is a branch of the humeral artery, running down the side of the radius, covered by the supinator longus. At the wrist it divides into two; one, passing over the palm of the hand, is lost in the fleshy part of the thumb; the other in its progress between the metacarpal bone of the forefinger and the first bone of the thumb plunges into the palm, and forms an arch. In its course it sends off branches which run on both sides of the hand, communicate with the cubical branches, and are lost among the metacarpal bones.

RADIA'LIS MU'SCULUS. See FLEXOR CARPI RADIALIS.

RADIA'LIS EXTE'RNA VE'NA. When the cephalica hath reached the bend of the arm, it divides into two principal branches, one of which, spreading over the fore-arm, has this appellation.

RADIA'LIS INTE'RNA VE'NA, a long branch from the mediana cephalica.

RADICA'TUS, (from *radix, a root*). Leaves from which roots shoot out. This is the case with the succulent plants, the ficoides, stapeliæ, and aloes.

RADI'CULA, (a dim. of *radix, a root*); strictly speaking, the small fibres of the principal root; in a medicinal view, equally active in most instances with the body of the root. See RAPHANUS HORTENSIS.

RA'DIUS, one of the bones of the fore-arm, denominated from its resemblance to the spoke of a wheel; *cercis*; *focile*. Its upper extremity is formed into a small circular head, hollowed for an articulation, by arthrodia, with the tubercle of the os humeri at the side of the trochlea; and the half of the round circumference of the head, next to the ulna, is smooth, to be received into the semilunated cavity of that bone. The part below the head, rendered smaller by the action of the supinator radii brevis, is called its *cervix*; at the external root of which a tuberous process rises for the insertion of the biceps flexor cubiti. From this a spine runs downwards and inwards, for the insertion of different muscles.

Internally, it has a sharp spine, to which the interosseous ligament is fixed; but this is wanting at the upper end, where the supinator radii brevis, and flexor digitorum profundus, are connected. Both ends of the bones of the fore-arm are first cartilages, and then epiphyses at the earlier periods. The lower extremity of the radius is much larger than the superior, flattened before, and grooved backwards by the tendons of the muscles. The extremity of the radius is hollowed for the reception of the bones of the wrist. The reason why the fibres of the interosseous ligament run obliquely upwards from the ulna to the radius is, that, as the latter is very slightly articulated to the os humeri, the force of it would in a fall be communicated to its upper extremity, and easily dislocate it, if this ligament was not to take off the force of the shock. The fibula is also so called.

RA'DIX, (from ῥαδιξ, *a lower branch*). A ROOT, that part of a plant by which it receives nourishment. Some roots are fleshy, others fibrous, others woody. Linnæus divides them into fibrous, bulbous, and tuberous, which are again subdivided, chiefly in the following manner:

RA'DIX ASPHODE'LI, composed of several oblong fleshy knobs, as the king's-spear, and the day-lily.

RA'DIX BULBO'SA, composed of several coats, involving, or of several scales lying over, one another. The first of these is called tunicated, as the onion; the last squamous, as the lily.

RA'DIX CARNO'SA. FLESHY or ESCULENT ROOT, as the carrot.

RA'DIX FISTULA'RIS. TAP ROOT, or that part which runs perpendicularly deep into the ground. In taking up trees, it should be neither cut nor broken; and in planting them, a hole should be made proper for its reception.

RA'DIX FIBRO'SA, consists only of small fibres like hairs, as those of grass and corn.

RA'DIX GRANULO'SA, consists of many small fleshy knobs, which resemble grains of corn, as the white saxifrage.

RA'DIX GRUMO'SA, usually a pendulous root, consists of many oblong fleshy knobs, joined to one centre at the top, as that of the ranunculus.

RA'DIX PALMA'TA, a tuberous root, divided apparently into several fingers, so as to resemble a hand, as the handed-orchis.

RA'DIX TESTICULA'TA, a double tuberous root, consisting of two knobs, resembling the testicles, as in the orchis. Roots are sometimes styled *comosæ*, which send out fibres from the top, at a knot between the trunk and thicker part of the root; *fusiformes*, when they gradually lessen to a point; *entire*, as in liquorice, and *parted*, as in St. John's wort. Perennial roots are styled *radices fruticosæ*.

RA'DIX TUBERO'SA, consists of an uniform fleshy substance, and is generally roundish, as that of the potatoe.

RA'DIX BRASILIE'NSIS. See IPECACUANHA.

RA'DIX DULCIS. See GLYCYRRHIZA.

RA'DIX I'NDICA LOPEZIANA. *Radix serpentum ophiorriza mungos* Lin. Sp. Pl. Pharmocopœiæ Edinburgensis; Gaubii Adversar. cap. vi. The root of an unknown tree, growing at Goa, or Malacca, and brought to Batavia. The pieces are sometimes of two inches diameter. The woody part is whitish and very light, softer, more spongy, and whiter next the bark, including a denser, somewhat reddish, medullary part. The bark is rough, wrinkled, brown, soft, woolly, pretty thick, covered with a thin paler cuticle, without any remarkable smell or taste, or any appearance of resinous matter. When boiled in water it has no smell, and the strained liquor, of a yellow hue, is almost insipid, impressing the tongue with a very light bitterishness,

without viscidity. The tincture is brown, and equally insipid. The extract obtained by evaporating the decoction is equally void of sensible activity. After drawing off the spirit from the tincture a balsamic matter remains, which bubbles and flames in the fire, with a bitterish taste, like that of opium.

This root is regarded in the East Indies as a medicine of extraordinary efficacy in diarrhœas. Gaubius found it effectual in abating colliquative diarrhœas, particularly those attending the last stage of consumptions. It seems to be a narcotic bitter not unlike the simaruba, but in Gaubius' opinion more efficacious. The powder is given in doses from fifteen to thirty grains, repeated three or four times a day. A tincture made with common spirit is said to be equally effectual with the root; and its dose was a tea-spoonful three times a day: a dose somewhat disproportioned to that of the root and to its sensible qualities. Lewis's Materia Medica, edit. 3.

RA'DIX RHO'DIA. See RHEDIA.

RA'DIX RU'BRA. See RUBIA.

RAIJIS DE MOSAMBIQUE. See COLUMBO.

RAMA'LIS VE'NA, (from its minute branches). See PORTA VENÆ.

RA'MENTA. SHREDS or FILINGS.

RA'MEX, (*ramus, a branch*, from its protruding forward like a bud). See HERNIA.

RA'MEX VARICO'SUS. See CIRSOCELE.

RA'MUS, (*quòd radice manet*). A BRANCH, the subdivision of a stem of a tree.

RA'MUS INFE'RIOR. See MAXILLARIS INFERIOR NERVUS.

RA'MUS SUPE'RIOR. See FRONTALIS NERVUS.

RA'NA, (Hebrew, *ranah, to croak*). The FROG, or PUDDOCK. The spawn of frogs was formerly used as a refrigerant, but now wholly neglected. See RANULA.

RA'NA ESCULEN'TA. The hind legs of the frogs are only eaten. They resemble delicate veal, and are much less luscious than the tortoise.

RA'NA RUBE'TA. See BUFO.

RA'NGIFER, (from *ramus, a branch*, and *fero, to bear*, named from its branching horns). See CERVUS RANGIFER.

RANI'NÆ ARTE'RIÆ and VE'NÆ. (*Quia nigræ sunt instar ranularum.*) See SUBLINGUALIS.

RA'NULA, (a dim. of *rana, a frog*). *Batrachos, hypoglossus, rana.* An indolent tumour under the tongue, named from its situation in the venæ raninæ, or perhaps from its altering the voice of the patient. This tumour is formed in the salivary glands, and is seated on either side of the frænum: it is often of a scrofulous kind, defined by Vogel a folliculous tumour, containing a thick or tofaceous matter; but the nature of the matter varies, and it is sometimes like the white of an egg, at others more solid, and even sandy, purulent, or differing from each. It has been styled a hydatid, and is said by Siebold to be an expansion of Wharton's duct. When it grows suddenly, both the speech and swallowing are impeded with much pain; but it generally increases gradually, and its effects are not violent. Instances, it is said, have occurred of these tumours degenerating into cancers; but this is highly improbable, for they are with great difficulty dispersed or brought to suppuration, and generally require the knife for their removal. The actual cautery has sometimes been employed, and the oil of hypericum recommended. If a tumour of this kind is seated where the salival ducts enter into the mouth, incisions must never be attempted, because of the danger of wounding these ducts, and we must wait till nature discharges the contents. If seated on either side, great care is required, lest the nerves or the blood-vessels should be injured; but if we hold up the tongue, and make an incision transversely into the tumour, the matter will be safely discharged. The wound must be dressed with honey of roses acidulated with spirit of vitriol, that the cyst may also be destroyed, to prevent a return of the disease. Mr. Justamond relieved a patient who would not submit to an operation, by rubbing it daily with a strong solution of alum.

See Heister's Surgery; Bell's Surgery, vol. iv. p. 525; White's Surgery, p. 275.

RANUNCULOI'DES PRATE'NSIS, (*ranunculus*, and εἶδος, *likeness*). See CALENDULA PRATENSIS.

RANU'NCULUS, (because found in marshy places where frogs abound). CROW-FOOT, is a plant with perennial, pentapetalous, rosaceous flowers, set in five-leaved cups, and followed each by a round cluster of naked seeds. A name also for the *myosuros*.

RANU'NCULUS BULBO'SUS, Lin. Sp. Pl. 778, *tuberosus major*, ROUND-ROOTED or BULBOUS CROW-FOOT, hath a round tuberous root, the size of an olive; the leaves are divided commonly into three segments, and further subdivided; the stalks are erect, the flowers of a bright glossy yellow, their cups turned downwards; common in pasture grounds, and flowers in May. This is one of the caustic species.

RANU'NCULUS LONGIFO'LIUS PALU'STRIS MINOR; *ranunculus flammula* Lin. Sp. Pl. 772, *citrinula*, SPEAR-WORT, or SMALLER WATER CROW-FOOT, with fibrous roots, long narrow leaves, accuminated at both ends, leaning on procumbent stalks; growing in watery places or moist meadows, and flowering in June. The roots and leaves have no smell, but an acrid fiery taste. Internally they appear to be deleterious, even when boiled in water so long as to discover no pungency to the palate. The effluvia of the less acrid species, or varieties cultivated in gardens, when freely inspired, have occasioned headachs, anxiety, vomitings, and spasms. The leaves and roots applied externally blister the part, and destroy it. For this purpose they are used in Mrs. Plunket's remedy for cancers. Indeed all the species are highly acrid, exciting itching, inflammation, blisters, and ulceration on the tongue or on the surface. In the stomach they have all the effects of an acrid poison. The most virulent species are the *r. bulbosus, sceleratus, acris arvensis, thora*, and *illyricus*; but the acrimony resides, sometimes in the roots, occasionally in the stalks, leaves, or flowers. The acrimony of the ranunculus alpestris, according to Haller, is most considerable; but no medicine will counteract the virulence of this tribe. The wild plants are more acrid than the cultivated ones: their pungency is diminished by drying, and destroyed by long keeping. See Raii Historia; Lewis's Materia Medica; Kraft Experimenta de nonnullorum Ranunculorum Venenata Qualitate, Vien. 1766; Mayr de Venenata Ranunculorum indole eorumque usu, Viennæ, 1783.

RANU'NCULUS VI'RIDIS. The name of a species of frog: the term *ranunculus* is also given to several other of the vegetable class, viz.

RANU'NCULUS FICA'RIA and VE'RNUS. See CHELEDONIUM MINUS.

RANU'NCULUS NEMERO'SUS. See MOSCHATEL LINA.

RANU'NCULUS PHRAGMI'TIS. See ANEMONOIDES.

RANU'NCULUS TRIDENTA'TUS VE'RNUS. See HEPATICA NOBILIS

RAPA, (from the Arabic term *rapagh, to germinate*). The TURNIP, or ROUND-ROOTED TURNIP, *rapum*, a plant with jagged leaves, yellow flowers, with small round, smooth, reddish or blackish seeds, in long pods. The garden turnip is supposed to be a variety produced by culture from the smaller sort, which grows wild in sandy grounds in some parts of England. It is biennial.

Turnips are to many an agreeable food; but watery and flatulent; in weak stomachs inconvenient. They are said to be detergent, laxative, and diuretic; are mild rather than sweet, but contain no sugar, and very little amylaceous matter. The yellow turnip has a sweeter and more mucilaginous taste, and is therefore apparently the most nutritious. (Cullen's Materia Medica.) The liquor pressed from them, after boiling, and sometimes from the raw root, is taken medicinally in coughs and disorders of the breast; and applied to the mouth in aphthæ, the seeds are styled *alexipharmic, diaphoretic*, and *diuretic*; they have no smell, but to the taste are mildly acrid. The female turnip is of a less rounded shape, and preferred. See Raii Historia; Lewis's Materia Medica. See RAPISTRUM.

RAPHA'NIA, (a disease supposed to arise from eating the BASTARD RADISH. *Raphanus raphanistrum* Lin.) *Convulsio soloniensis*; *eclampsia typhodes*; *necrosis ustilaginea*; *kriebel, krankheit*; is defined "a spastic contraction of the limbs or joints, attended with convulsions and excruciating periodical pain."

Rothman observes that it had been frequently epidemical in Sweden, though considered as a new disease, and he has traced it in the works of different authors from the year 1596 to 1727, so that it has been common in other parts of Europe. He adds, that this dreadful distemper sometimes continued for three or four weeks, and that it terminated fatally from a diarrhœa or convulsions. The poorer people were the chief subjects of this complaint, and were usually attacked in autumn, soon after eating bread made of new corn. The lollium temulentum, and the disease of corn styled ergot, by which the end of the seed is elongated like a horn, have been accused, as well as the charlock (*rapistrum*), of producing the disease; but it most probably proceeds from the ergot.

Valerian, castor, camphor, and other similar antispasmodics, were given with little advantage. Camphor has been sometimes combined with vinegar, and the animal oil of Dippell, with scarifications, blisters, and emetics, have been repeatedly employed with no decided success. See Pulteney's View of the Writings of Linnæus; Memoires de la Societé Royale de Medecine, at Paris, Annee 177 , , 86; Rothman's Dissertatio de Raphania; Amœnitates Academicæ, vol v.; Rosenstein de Morbo Convulsivo Spasmodico; Tissot Epistolæ Medico-practicæ; Marcard von Einerder Kriebelkrankheit.

RAPHANI'STRUM, (from *raphanus*, in consequence of its likeness to the raphanus minor). It agrees with this plant also in its medical virtues; and is sometimes the appellation of *miagrum*.

RA'PHANUS, (παρα το ραδιως φαινεσθαι, from its rapid germination). The RADISH.

RA'PHANUS AQUA'TICUS. See SISYMBRIUM AQUATICUM.

RA'PHANUS HORTEN'SIS, *radicula, raifort; raphanus sativus* Lin. Sp. Pl. 935; COMMON GARDEN RADISH. The root is attenuating, occasionally carminative; and all the parts of the plant are antiscorbutic. The roots are more acrid after drying than when fresh, but this acrimony is soon dissipated by boiling. It is commonly eaten raw with its cortical part, in which its acrimony consists; and this rather serves as a condiment to its acescent substance, and which therefore seldom proves flatulent. It is, however, in weak stomachs indigestible.

RA'PHANUS RUSTICA'NUS, MARI'NUS, and SYLVE'STRIS. HORSE-RADISH, *cochlearia armoracia* Lin. Sp. Pl. 904. The leaves are large, long, and indented about the edges. It is found wild about the sides of ditches and rivulets, but for medicinal and culinary purposes cultivated in gardens; perennial, flowering in June. It rarely perfects its seeds, but is propagated by transverse cuttings of the roots.

The smell and taste of the roots are quick and penetrating; but they contain also a sweet juice, which sometimes exudes in little drops upon the surface. Its pungent matter is very volatile, dissipated in drying, and carried off in distillation, both by water and spirit. As the pungency exhales, the sweet matter, though partly dissipated, becomes more sensible. It impregnates both water and spirit by infusion or distillation very richly with its acrimony, and in distillation with water yields a small quantity of essential oil, exceedingly penetrating and pungent. This root differs from mustard-seed in the volatility of its pungent matter, and its solubility in spirit. It is properly employed as a condiment with animal food, as it stimulates the stomach and promotes digestion. Externally applied, it is an useful rubefacient in palsy and rheumatism. Its infusion often cures hoarseness, when it depends on the interrupted secretion of mucus; and it readily proves emetic, when taken in infusion, or assists the action of other emetics. Infused in wine, it stimulates the whole nervous system, and is useful in palsy; but employed in large quantity it is often injurious by the excess of heat which it excites, though on this account useful in chronic rheumatism. Cut down into very small pieces, without bruising, and swallowed without chewing, according to Bergius, it has been extremely useful in arthritic cases, perhaps of the rheumatic kind. Its pungency passes to the kidneys, and often proves a powerful diuretic; and by promoting urine and perspiration, it has long been known as a powerful antiscorbutic. Held in the mouth it proves a certain and good sialagogue. The syrup of horse-radish is made by infusing one dram of the root in four ounces of water, and forming that into a syrup, in a moderate heat, with sugar. An infusion of it with bruised mustard-seed, either in wine or boiling water, acts as a stimulant and diuretic, and is often prescribed with success in dropsical and paralytic complaints. An infusion of this root in milk is also one of the safest and best cosmetics.

If the root be kept in a cool place, and buried in dry

sand, its virtues are long retained. Dr. Alston thinks that it may be dried and powdered without losing any considerable portion of its virtue.

The London college directs the following compound spirit, *spiritus raphani compositus*, to be kept.

Horse-radish root fresh, the exterior rind of Seville orange dried, of each two pounds; fresh garden scurvy-grass, four pounds; bruised nutmegs, an ounce; are added to proof spirit of wine, two gallons, with water, a sufficient quantity to avoid an empyreuma: distil two gallons. Pharmacopœia Londinensis, 1788. See Neumann's Chemistry; Lewis's and Cullen's Materia Medica.

RA'PHANUS SYLVE'STRIS. See LEPIDIUM.

RAPHE, (from ῥαφη, *a suture*). The longitudinal eminence which divides the scrotum, passing through the perinæum to the anus.

RAPHE CEREBRI. The longitudinal eminence which divides the corpus callosum.

RAPHONTICOI'DES LU'TEA. See BEHEN ALBUM.

RAPI'STRUM, (from the resemblance of its leaves to those of the turnip). *Rapa lampsana, miagra, sinapi arvense præcox semine nigro*, CHARLOCK, CHADLOCK, KEDLOCK, or WILD MUSTARD; a plant said to be antiscorbutic, but never employed in practice.

RAPOCAULIS, (from *rapa*, and *caulis, the cabbage*). See BRASSICA CONGYLODES.

RAPU'NCULUS, RAPUNTIUM, (from *rapa*). Plants which much resemble the campanula in external appearance. See CERVICARIA.

RASH. A familiar name for any papular eruption.

RASPATO'RIUM, (from *rado, to scrape*). A SURGEON'S RASP.

RAUCE'DO, RAU'CITAS, (from *raucus, hoarse*). A HOARSENESS, a diminution of the voice, sometimes attended with a preternatural asperity or roughness of the parts affected, the aspera arteria, and particularly the larynx. It is generally a symptom of catarrh, but sometimes a species of PARAPHONIA, q. v.

It is chiefly occasioned by an inflammation, sometimes a want of tone in the nerves of the part; for whether the whole larynx acts as a wind, or its ligaments bring it nearer to a stringed, instrument, a due activity of the nerves is necessary. In the first case it is a symptom of cold, or it may arise from swallowing acrid powders. When it occurs also from measles, smallpox or repelled eruptions, it is probably owing to the same cause.

It is, however, often a symptom of hysteria, and then is probably owing to an altered state of the recurrent nerve; for the voice involuntarily changes from an acute to a grave tone, goes off, and returns suddenly. Sometimes hoarseness comes on from swallowing deleterious substances, as in the instance recorded by Plater, where a beetle swallowed produced it; sometimes it is said to be a symptom of pregnancy.

Its most common causes are, however, fixed organic diseases of the trachea and neighbouring parts, often from syphilis. An ossification of the thyroid and cricoid cartilages; a thickening of the first ring of the trachea (Fantonus); an erosion of the epiglottis (Haller); an ulcerated larynx (Wathen's Memoirs of the Medical Society, London, vol. i.); and an erosion of the uvula (Lentilius), are all said to have produced the disease. Substances fixed in the œsophagus are said in the Memoirs of the Academy of Surgery, to have had the same effect.

Various are the remedies prescribed for the complaint, not always with a rational view of its cause. If Plenck found the arnica, the bark, and the aqua vulneraria useful, it must have been in a case of debility. The erysimum and horse-radix often given in the form of a syrup, must have succeeded on the same principle. Breathing watery vapours, bleeding, whey, cold water, and demulcents could only be of service in the inflammatory disease; the seton of Hildanus, when it arose from a topical complaint; and mercury when it was a symptom of the venereal disease.

RAU'CITAS. See BRANCHUS and RAUCEDO.

REA'LGAR, *arlada, auripigmentum rubrum, arsenicum rubrum factitium*, and *abessi*. A composition of sulphur, orpiment, and unquenched lime; of a red colour, always glossy, but not always transparent. See ARSENICUM ALBUM.

RE'BIS, *abessi, azoth*. The alvine sordes, in old authors; or the hair of choleric or plethoric men. Amongst alchymists it means the seed from whence gold is generated; and it has obtained the barbarous name *rebis*, because its first two ingredients, by long coction, become one in species and number. For a similar reason the *mercurius duplicatus philosophicus*, consisting of sulphur and mercury, is called *rebis*.

RECEPTA'CULUM CHY'LI, vel PECQUETI, (from *recipio, to receive*), *diversorium, sacculus chyliferus*, the RECEPTACLE OF THE CHYLE, first demonstrated by Pecquet at Paris, 1651, 1652, though Eustachius and Asellius were in some degree acquainted with it. It lies on the right side of the aorta, at the union of the last vertebra of the back with the first of the loins, and is in reality the union only of the different lymphatics somewhat enlarged; but by no means a sac in the human body, as it is sometimes described. The upper portion lies between the aorta and the vena azygos, and forms a particular canal which runs up through the thorax, called the DUCTUS THORACICUS, q. v. See Monro's Osteology.

RECEPTA'CULUM. A RECEPTACLE, by Ray called *sedes*; by Boerhaave, *placento*; and by Vaillant, *thalamus*, is the basis upon which the other six parts of fructification are fixed.—1. *Receptaculum commune*, connecting many flosculi. 2. *R. floris*, a basis to which are fixed the parts of the flower exclusive of the germen. 3. *R. fructificationis*, common to the flower and fruit. 4. *R. fructus*, a basis for the fruit only. 5. *R. proprium*, belonging to the fructification only. 6. *R. seminum*, the basis on which the seeds are fixed within the pericarpium.

RE'CIPE. TAKE. It is usually placed at the beginning of prescriptions, and is generally wrote thus, R. or ℞. or with the character for tin, ♃. As this is the astronomical character for Jupiter, it has been ridiculously supposed an invocation for success. See ℞.

RECLINA'TIO, (from *reclino*). An inactive state of the muscles; in botany a leaf which bends down, and whose top is lower than its base.

RECTIFICA'TIO, (from *rectifico, to make clear*). See DEPURATIO.

RE'CTOR SPI'RITUS. See SPIRITUS.

RE'CTUM INTESTI'NUM, (from *rectus, strait*),

apeuthysmenos, longanon, archos, cyssaros. This last of the large intestines is every-where covered by longitudinal muscular fibres, and hath strong circular ones for expelling the fæces. It is not furnished with bands like the colon, nor covered with the peritonæum, as the other intestines. At the lower extremity of the rectum are cryptæ, supposed to be the seat of worms, and vascular ridges between the cryptæ, the seat of hæmorrhoids, apparently raised by the fat between the membranous and muscular coats, interspersed with little glandular follicles, which separate mucus. The folds near the extremity are longitudinal, forming little lacunæ of a semicircular form, turned upward toward the intestine. This gut is a continuation of the last convolution of the colon, which having passed below the lowest vertebra of the loins to the inside of the os sacrum, is bent backward in the concave side, to which it is connected; and having reached the os coccygis it runs in the same direction, bending a little forward, terminating beyond its extremity. The arteries are from the hæmorrhoidalis interna, the last branch of the mesenterica inferior, which communicate with the hypogastrica, and particularly with the hæmorrhoidalis externa. The veins are branches from the mesaraica minor, or hæmorrhoidalis interna, which communicate with the hypogastrica. The nerves are from the plexus mesentericus inferior and the plexus hypogastricus.

Sometimes hard, schirrous lumps, without pain, are seated near the anus, which are thrust out at every effort to void the fæces, and are then slightly painful; but at no other time, unless handled. If they have a small basis, Mr. Pott advises their speedy removal; for otherwise they certainly prove fatal. The early symptoms do not elucidate their nature: the first sensation is that of wanting to void a large stool, but without effect. This unavailing inclination frequently returns, and on trying a clyster, the pipe is obstructed by a hard substance. The nature of the case is often discovered; but we can in general only palliate. A tumour perhaps of this kind was apparently dissolved by the external application of the beladonna. Medical Commentaries, i. 4?4

Another disease of this gut is a general relaxed state of its whole substance When extruded through the anus, it is bound by the sphincter muscle, and resembles a fungus with a narrow basis; a true fungus is, however, uniform, and the finger may pass round it; it is soft to the touch, yet from irritation may be as painful as a cancerous one. It is, therefore, proper to distinguish them with accuracy, as the first may be cured, but the latter cannot. The cancerous fungus within the rectum is seldom uniform, but generally unequal, spreading from a large basis, and discharging an offensive ichor or gleet.

Another disease of the rectum is a schirrous contraction It occurs usually about an inch or two above the anus, and the first symptoms are obstinate costiveness, alternated by a watery diarrhœa, of a short continuance. The fæces are usually retained. Hemlock, and all the variety of medicines, have been tried with little success The cure is palliative only. The existence of the disease can often be ascertained with accuracy, as it is within the reach of the finger.

The anus is sometimes contracted by hæmorrhoids, sometimes by venereal tubercles; and in the Memoirs of the Academy of Surgery, vol. i. and iii. there are instances of an abscess formed in this part, in consequence of swallowing some foreign bodies, or of substances forced into the gut. In the Medical Commentaries of Edinburgh, a case occurs of a calculus formed in it. Palsy and gangrene, sometimes cancers, of this part are said to have followed the abuse of drastics; and ulcers of the rectum are endemic in the Brazils. They are always with difficulty cured, though Dr. Rowley boasts of his success with antimonials and salts. See FISTULA.

Siebold Dissertatio de Morbis Intestini Recti; Wrisberg de Preternaturali, Intestini Recti cum Vesica Coalitu; Rowley's Seventy-four Cases; Memoirs of the Medical Society, London, vol. ii. art. 2 and 25; Edinburgh Commentaries, ii. 373.

RE'CTUS. STRAIT. The name of several muscles, denominated from the rectilinear direction of their fibres.

RE'CTUS ABDO'MINIS. The recti muscles of the belly arise from the os pubis, are inserted into the sternum, and are expanded upon the cartilages of the fifth, sixth, seventh, and sometimes of the eighth ribs, having expanded into a thin aponeurosis, which passes under the pectoral muscle, and is said sometimes to extend far up the sternum. In their course they are divided into four or five portions, by tendinous intersections, most apparent on the anterior surface. They lie on the fore-part of the belly, immediately under the integuments; and the vessels which pass underneath the upper parts are the mammary artery descending, and its vein ascending; those of the lower part are the epigastric artery ascending, and its vein descending. In this muscle certain white lines and impressions are perceptible, called by Vesalius *perigraphæ*. Its use is to compress the abdomen, and to assist in raising the body.

RE'CTUS ANTE'RIOR. See RECTUS CRURIS.

RE'CTUS A'NTICUS BRE'VIS. See RECTUS INTERNUS MINOR.

RE'CTUS A'NTICUS LO'NGUS. See RECTUS INTERNUS MAJOR.

RE'CTUS ATTO'LLENS. See GENIO-HYOIDÆUS.

RE'CTUS CRU'RIS; *rectus femoris, rectus anterior*, or *gracilis anterior*, rises by a strong tendon from the anterior and superior process of the ileum, and from the cartilaginous tip of the acetabulum, and is inserted into the upper part of the patella.

RE'CTUS DE'PRIMENS, et INFE'RIOR O'CULI. See DEPRESSOR OCULI.

RE'CTUS EXTE'RNUS O'CULI. See ABDUCTOR OCULI.

RE'CTUS INTE'RNUS; *gracilis internus*, rises close to the edge of the os pubis, where it joins to the ischium, and runs to the internal condyle. It serves to bend the thigh forward.

RE'CTUS INTE'RNUS MA'JOR; *rectus anticus longus, flexor capitis*, lies before the rectus internus minor; rises commonly by as many tendons from the transverse processes of the fifth, fourth, third, and second cervical vertebræ, and is inserted into the anterior part of the cuneiform process of the os occipitis, bending the neck forward

RE'CTUS INTE'RNUS MI'NOR, A'NNUENS: *rectus*

internus minor of Cowper; *rectus anticus brevis* of Winslow; is also named *renuens*. It rises from the root of the transverse process of the atlas, and is inserted into the cuneiform process of the os occipitis, just behind the groove where the lateral sinus forms the beginning of the internal jugular. This muscle gives the head a lateral motion upon the atlas.

RE'CTUS INTE'RNUS O'CULI, rises from the bottom of the socket near the hole by which the optic nerve enters the orbit, passes on the side of the globe next the nose, and is inserted into the sclerotica. It draws the eye towards the nose. See ABDUCTOR OCULI.

RE'CTUS LATERA'LIS, rises from the transverse process of the atlas, and is inserted into the os occipitis and os temporis, near the mastoid process. It bends the head to one side.

RE'CTUS MA'JOR; *rectus capitis posticus major*, rises from the upper part of the spinal process of the dentata; runs upwards and outwards, and is inserted by a flat tendon, near where the os occipitis is joined to the os temporis, serving to bring the head backwards. It is in part a rotator of the head, and though styled *rectus* is in reality an oblique muscle.

RE'CTUS MI'NOR; *rectus capitis posticus minor*, rises from the knob which answers to the spinal process of the atlas, and passes thence to the head. It can only move the head upon the atlas.

RE'CTUS SUPE'RIOR O'CULI. See ELEVATOR OCULI.

RECU'RRENS, (from *recurro, to return*). The RECURRENT NERVE. See PAR VAGUM, and NERVUS.

REDDLE. An argillaceous ocre, formerly used as a tonic, and externally as an astringent.

RE'DUC, vel RE'DUX, (from *reduco, to bring back*). A FLUX, or a POWDER by which oxides are reduced to a metallic form. Fluxes are generally either of the vitreous or the saline kind: by the former are meant all those that are, or readily assume a glassy form in the fire; the chief of which are the glass of lead, or of antimony, and borax: by the latter those composed of salts. There are fluxes of a yet cheaper kind; such as dried wine-lees, dried cow-dung, dried horse-dung, dried river-mud, fuller's earth, iron-filings, &c.; and a variety of compound fluxes, some of which are chiefly adapted for particular ores: indeed almost every operator has his favourites. For the common black flux, see CALCINATIO.

REFECTI'VA. (from *reficio*). See CARDIACA.

REFRIGERANTIA, (from *refrigero, to cool*). A class of medicines of peculiar utility in all cases of increased tone or action of the sanguiferous system. As increased action of the vessels produces increased heat, so, on the other hand, different causes of the latter influence the former. If it were necessary to make any distinction in a class of medicines so simple, we should say, that they are adapted either for a sudden or a permanent effect. Of the former kind, cold is the principal remedy; of the latter, a diet of weak alimentary powers, or, more strictly, every means of lessening the proportion of the gluten in the circulating mass.

Cold is administered in the form of cold air, cold water, or the different fluids which attract caloric. The more temporary effect of cold produces, we have seen, reaction, so that the continuance of its application is necessary. The neutral and earthy salts are, in different degrees, refrigerant; and nitre is perhaps the most powerful, or a combination of nitre with crude sal ammoniac. The acid fruits and the native acids appear to be refrigerant from the same principle, though they have some influence, when long continued, as weak aliments.

Sedatives, however, repress inordinate circulation by an action apparently chemical, and hold a middle rank between cold and the diminution of the denser parts of the blood. Emetics in nauseating doses are of this kind; probably the acid products of fermentation; more certainly the preparations of lead. Avoiding all stimuli must be also a comparative cause of diminished action.

The great source, however, of the change intended by this class of medicines is the diminution of the denser parts of the blood. Thus all evacuations of blood are permanently refrigerant; for though watery fluids are quickly supplied to fill the vessels, the gluten and red globules are of slower production. Low diet is a remedy of the same kind; and when we consider the effects of vinegar in reducing the bulk, we are tempted to believe that it may have some effect on the digestive process, and added to its sedative quality, obvious in the mouth and on the lips, may also lessen the proportion of gluten in the blood.

The great utility of refrigerants is chiefly seen in all inflammatory affections, and in all the pyrexiæ of Dr. Cullen, which depend on increased action, particularly hæmorrhages and inflammations. In these cases the diminution of the symptoms only affix the limits; but in the continued action of refrigerants of every kind we have reason to dread the most permanent chronic debility. The greatest caution is consequently necessary, in their employment.

REFRIGERA'TIO. See HORROR.

REFRIGERATO'RIUM, (from *refrigero*). A REFRIGERATORY; the vessel filled with water, through which the worm passes in distillations, to condense the vapours as they pass through it.

RE'GIA A'QUA. See NITRUM.

RE'GIMEN, (from *rego, to govern*). The REGIMEN, or the regulation of the diet, with a view to preserve or to restore health. See DIÆTA; (Stahl de Regimine.) In chemistry it is the regulation of fires.

REGIONA'LIS MO'RBUS, (from *regio, a country*). See ENDEMIUS.

REGI'STERES, (from *rego*). REGISTERS, or OPENINGS, in different parts of furnaces, to be shut occasionally. By their means the fire may be regulated, for the heat is increased or diminished in proportion to the access of air. These holes should be from two to four inches wide, if the internal diameter of the furnace does not exceed a foot.

RE'GULIS BARBADE'NSIS vel JAMAICE'NSIS. See PALMA NOBILIS.

RE'GULUS. A metal in its metallic form; from *rex*, because the alchemists expected to find gold in the metal.

RELAXA'TIO, (from *relaxo*); *chalasis*. See PROCIDENTIA UTERI, and ATONIA.

REME'DIUM, (from *re*, and *medeor, to heal*); a REMEDY; *boethema*; a medicine by which any illness is cured. See MATERIA MEDICA.

REMITTE'NTES, (from *remitto, to abate*). REMITTING DISEASES are fevers in which the paroxysm abates without wholly receding.

As we have spoken so fully of intermittents, diseases of a similar nature with remittents, we have less temptation to enlarge on the present subject. Some considerations were, however, referred to this article. We have seen that the true regular intermittent has but one paroxysm in twenty-four hours. When a remittent first assumes the form of an intermittent fever, the remission is regularly more distinct; the sweat comes on, and the urine drops a more copious sediment. This remission becomes, by degrees, more perfect, and after the sweat there is some interval of apyrexia. The disease then soon becomes an intermittent. When the contrary change takes place, the paroxysm is prolonged, and its crisis is less complete. It is seldom prolonged to the period of the next attack; but the fever remains in a less degree, and its violence is gradually increased in each interval till the remissions are indistinct.

In general, every fever begins with exacerbations and remissions, but the exacerbations of the true remittent are, on the alternate days of the continued fever, every evening, and more slightly every day about eleven or twelve. Every fever approaches, however, the tertian type. Remittents generally show it very strikingly, and the most continued fevers have, as already observed, their more remarkable changes on alternate days, down to the fourteenth; the period, independent of accidental circumstances, of every continued fever. With respect to remittents, however, this is perceived most strikingly, for twenty tertian remitting epidemics are described for one quartan or quotidian remittent. In examining the symptoms of different epidemics, the succession of the paroxysms may appear to oppose this opinion, and quotidian remittents to be more common than we have represented. On a closer examination, however, these apparent amphimerinæ are in reality double tertians. Stahl has pointed out numerous instances of this kind in his dissertation De Tertiana, Febris genium universum manifestante. It is a principle which should be always kept in view, in every consideration relating to the progress of fever.

We found it difficult to explain why, after a complete solution of the paroxysm of an intermittent, the same series should recur. With respect to remittents there is little difficulty, for almost every epidemic of this kind is attended with asthenic symptoms, or rather with the most extreme debility. At the conclusion of the paroxysm, the sensorial energy is not restored: the fomes remains, till the returning evening exacerbation, or, more often, the returning tertian tendency renews the train of symptoms. These considerations render it highly probable that the true reason of the renewal of intermitting paroxysms is the imperfect restoration of the sensorial energy by the former fit; a cause already suggested, and which the remaining languor in the intervals strongly supports. This reasoning acquires more force when we find that all the febres comitatæ of Torti are remittents, and that the accompanying symptoms are chiefly those of debility. As we may suppose the nosology of Dr. Cullen to be generally known, it is sufficient to refer to his enumerations of the tertianæ comitatæ of Torti, page 53, vol. ii. 1780. To this we may add the various accounts of the yellow fever of the West Indies and America; the epidemics observed by Sarcone at Naples; and the different publications respecting camp fevers, and those occurring in long voyages, especially in transports conveying large bodies of troops.

It is easy to say with our predecessors in this work, that we must "empty the bowels and *throw* in the bark." It is the language of inexperience and ignorance; but we need not enlarge on the more difficult parts of the treatment, as we have already noticed them in our account of the yellow fever.

The asthenic remittents of warm climates are the diseases in which cold applications are found chiefly useful; and the account which sir John Chardin gives of the treatment of the fever which he experienced at Gombron is a good example of the practice. It consisted in cold drinks and cold applications. Cold affusions are too violent repellents of the blood from the surface; and sponging the body with cold water and vinegar is all that can be allowed in this line. The bark may assist recovery, but there is seldom any proper period for its use during the fever.

RE'MORA ARA'TRI, (from *remoror*). See ANONIS.

REN, (*a kidney*), *nephros*. See RENES.

RENA'LES ARTE'RIÆ, (from *renes, the kidneys*), *emulgentes arteriæ*, are generally two in number, and go out on each side from the lower descending aorta, immediately under the mesenterica superior. The right is situated more backward, and is longer than the left, because the vena cava lies on the right side between the aorta and the kidney. They run commonly without division, almost horizontally to the kidneys, into the depressions of which they enter by several branches which form arches in the inner substance of the viscera. From these arches many small branches go out toward the circumference, or surface of the kidneys. Sometimes two arteries go into one kidney. Generally the right renal artery passes behind the vena cava, and the renal vein in the other side; and the left artery first behind, and then before the vein. Sometimes they send branches to the glandulæ renales, membrana adiposa of the kidneys, and even to the diaphragm.

RENA'LES VENÆ, *emulgentes venæ*, spring from the inferior cava, when it arrives at the kidneys, into which these branches are sent. They are the largest veins connected with the vena cava, between the liver and the bifurcation. The right emulgent is the shortest, the left the longest; for it crosses the trunk of the aorta. Usually the left emulgent vein receives the left spermatic vein.

RENE'LIUS. See RHENCOS.

RE'NES, (ἀπὸ τοῦ ῥεῖν, from the flow of urine). The KIDNEYS are two oblong flattened bodies, extending from the eleventh and twelfth ribs to the fourth lumbar vertebra. The right kidney lies under the great lobe of the liver, and is lower than the left, which is situated under the spleen. They resemble in shape a large bean, of which the concave side is towards the vertebræ. Their length is double their breadth, and the latter double their thickness. The upper extremity is broader and more incurvated than the lower, and the depression

in the concave side is oblong, surrounded by small tubercles. The kidneys themselves are covered chiefly with a cellular substance; for the peritonæum is extended only over the upper and fore-side, so tha twhen the kidney adheres to the muscles, matter and even stones may be discharged through an abscess, without danger from access of air to the cavity of the abdomen. The aorta descendens, and the vena cava inferior, lie between the kidneys, pretty close to the bodies of the vertebræ. (See RENALES ARTERIÆ and VENÆ.) Each artery is surrounded by a nervous net-work, from which the nerves enter with the arteries. The kidneys are covered on one side by the peritonæum, and the whole substance is invested by a capsule, composed of two laminæ, connected together by cellular substance. The external lamina is thin and smooth, rendering the kidney uniform, and passing by numerous elongations into its substance. In children the convex part is divided into little lobules; a form sometimes continued in adults. The substance of the kidney is divided into the external or cortical, and the internal, tubular, or mammillary portion, the latter of which is made up of a number of pyramidal bodies, about twelve in each kidney, whose points are received into the pelvis, so that the cortical part not only lies round the outer surface of the kidney, but its processes pass into the interstices. The cortical part is wholly vascular, but in minute injections, certain appendages, called CORPORA LOBOSA, are observable. These are natural cells, where the small arteries seem to be expanded. Ruysch thinks them only convoluted arteries. In the veins no cryptæ are seen, so that they are not extravasations; they are also uniform, and confined to the cortical part.

The ramifications of the blood-vessels are peculiar; for in their ultimate branches they resemble stars, and in this form are lost on the proper membrane of the kidneys. The medullary, the striated, and the mammillary portions, are apparently continuations of the same substance, differing only in the proportion of red vessels. Every anatomist has refined in his observations on the structure of the kidneys; but these refinements are sometimes doubtful, and scarcely in any instance applicable to physiology. Each mammilla lies in a kind of membranous calyx, or infundibulum, which opens into a common membranous cavity, called the pelvis. After the infundibula have contracted into a conical form round the apices of the mammillæ, each forms a small short tube, which, uniting at different distances along the bottom of the sinus of the kidney, constitute three large tubes, passing from the sinus obliquely downwards, and uniting into one trunk, called the *ureter*. This excretory duct runs down obliquely on each side, with a small degree of inflexion, to the lateral parts of the inner side of the os sacrum, and passing between the rectum and bladder terminates in the latter at its inferior part, near the vesiculæ seminales. The ureters perforate each coat distinctly in a slanting manner; so that their oblique insertion answers the purpose of a valve, when the bladder is distended. The internal ligamentary membrane of each ureter does not end with its passage into the bladder, but is continued toward the prostate gland, where it seems to be inserted; keeping the lower part of the bladder from too great distension, and the ureters fixed. The artery is in the upper part of the sinus of the kidney, and partly before the vein; the vein is about the middle, and between the artery and the ureter, which is in the lower part, a little behind the vein, and partly surrounded by a branch of the artery. Nephrotomy therefore appears impossible; and the operation, however represented, is only opening an abscess in the loin, when from inflammation a concretion between the kidney and peritonæum has taken place. See NEPHROTOMIA.

One kidney is occasionally absent (Stoll Ratio Medendi, ii. 380), sometimes of a monstrous size, from calculus or from purulent matter: it has been found to weigh thirty-five pounds. (Histoire de l'Academie des Sciences, an. 1732, and Haller de Renibus Monstrosis). When one has decayed, the other has been enlarged. (Morgagni de Sedibus, &c. ep. xl. 14). The most frequent changes are, however, a depraved substance and a diminished bulk. It has been found by Warton (Adenographia, p. 90) so small as not to weigh more than a dram; to be gangrenous; eroded; full of hydatids, or tubercles; and ossified. (Fearon in the Medical Communications, i. 27). The principal complaint is, however, ulceration, of which we have numerous instances in the works of physicians of every age from the time of Hippocrates. (See NEPHRITIS.) Worms have been sometimes found in the kidneys; but rarely in the human kidney, except when ulcerated or consumed. Wounds in the kidneys are sometimes healed (Haller Pathologia Obs. 69); but frequently fatal. Haller, in the Gottingen Commentaries, describes a case in which it was displaced, and also degenerated; and, in his Opuscula Minora, iii. 40, is an instance of the two kidneys coalescing. See also CALCULUS.

RE'NES SUCCENTURIA'TI, (from *succenturio, to supply or fill up*). These supplementary kidneys are sometimes peculiarly large, sometimes wanting, and occasionally double, without any peculiar affection of the function, and their use is little known. See CAPSULÆ ATRABILIARIÆ.

RENI'SUS, (from *renitor, to resist*). RESISTENCE, properly belongs to hardness, which resists impressions, or to perfect elasticity, if such existed. The renitentes corporis dispositiones are those powers of the body which resist the effects of morbific miasma, or contagion. Galen, and Vander Linden.

RENOVA'TIO, (from *renovo, to renew*). RENOVATION, or the restoration of a mineral body from an imperfect to a perfect state.

RENU'ENS MU'SCULUS, (*renuo*, because it throws back the head). See RECTUS INTERNUS MINOR.

RENUNCIA'TIO, (from *renuncio, to declare openly*), *elogium*, an opinion or judgment given by a physician or surgeon to a magistrate or judge with respect to the mortality of a wound; of poison being taken, &c. See Ambrosius Paræus, Tractatus annexus Chirurgiæ de Renunciationibus.

REPELLE'NTIA, (from *repello, to drive back*). REPELLENT MEDICINES; those which prevent such an afflux of a fluid to any part as would excite tumour or inflammation. These are chiefly astringents and stimulants. See DISCUTIENTIA and INFLAMMATIO.

RE'PENS, (from *repo, to creep*.) The epithet of a plant which creeps on the ground.

REPRODU'CTIO, (from *reproduco, to reproduce*, or *renew*). *Regeneratio, resurrectio*. This function has

been considered as more extensive and important in its operation than sound observation will support. In the lower orders of animals, composed like vegetables of a congeries of buds, each part can become a living animal, and this power is greater in proportion to the simplicity of the structure; but we have remarked, that fibrous, primordial parts are not reproduced in their original organised forms. We greatly doubt of the reproduction of the glans penis, recorded in the Medical Essays of Edinburgh, for this reason, that even the sensation is said not to have been injured; and totally disbelieve the Ephemerides Naturæ Curiosorum, where veins and the tongue are said to have been regenerated. If either could happen, it would not occur in solitary instances. See REUNIO.

Ambrose Parey Opera Chirurgica, lib. xxii.; Domier de Viribus Naturæ in Reparandis Partibus, &c.; Goldhagen de Reproductione Partium.

REPU'LSIO, (from *repello, to drive back*). REPULSION, an action of bodies opposed to attraction: a principle of the most extensive application in chemistry, indeed equally with attraction. It is supposed to depend on a polarity in the particles of bodies, analogous, if not similar, to that observed in magnetism. This is, however, explaining ignotum per ignotius; for we know little of the causes of magnetic phenomena. Repulsion, however, we know to be connected in general with caloric; but as antagonising attraction it apparently acts independent of caloric. The French philosophers often confound it with resistance and elasticity.

RES NATURA'LES. According to Boerhaave these are life, the cause of life, and its effects, which remain in some degree whatever may be the disease. See CIRCUMSTANTIA.

RE'SEDA, (from *resedo, to appease*; from its allaying inflammation). See BARBAREA.

RESINÆ, (from ῥέω, because it flows from vegetable substances). RESINS are the productions of the vegetable kingdom, and sometimes exude spontaneously from trees, and at others are separated by chemical art. Except when they spontaneously exude, they are usually mixed with extractive matter and with gum. From the first they may be separated by sulphuric ether, and from the latter by alcohol. Yet in each case the resin is seldom wholly pure.

Resins are usually in some degree transparent, and their taste is sometimes pungent, though this vegetable substance is more frequently tasteless. Its colour is yellow or brown; its specific gravity about 1.10, and it is an electric. It is insoluble in water, soluble in alcohol, ether, and volatile oils; easily melts; burns with a white flame, much smoke, and a strong smell. When distilled it yields a large proportion of volatile oil, with a very inconsiderable one of acid: the latter is sometimes absent. When its solutions in alcohol, ether, or oils, are evaporated, the resin remains unchanged, with a smooth shining surface, styled a varnish. It is scarcely acted on by alkalis or acids, and distilled in close vessels furnishes some acid, and a large proportion of empyreumatic oil.

From these facts it might be supposed that resin is another form of oil; and, in fact, if volatile oils are exposed to oxygen, they become resins, forming in their change a little water, so that they probably lose a portion of hydrogen. If we wish to discover whether any vegetable substance contains resin, we should pour on it sulphuric ether, and expose it to the light; when the resin, if any exist, will become of a brown colour. Resin has, therefore, apparently the same analogy to volatile which wax has to fixed oils.

Resins appear to be of almost infinite variety, and indeed every difference in the taste and flavour of the essential oils influences the sensible qualities of the resins derived from them. The principal resins are, *Chio turpentine*, from the *pistacea terebinthus* Lin.; the *Venice turpentine*, commonly employed in medicine; the *Strasburg turpentine*, from the common fir; *pitch*, from the pinus picea; *elemi*, from the amyris elemifera; *mastich*, from the pistachia lentiscus; *guaiacum*, from the guaiacum officinale; *ladanum*, from the cistus ladaniferus; *dragon's blood*, from the dracena draco; *balsam of Mecca*, from the amyris opobalsamum; *balsam of copaiba*, from the copaifera officinalis. Benzoin, the balsams of Peru and Tolu, and the storax, contain resin joined with the benzoic acid. See BALSAMUM.

All vegetable extractive matters, by an union with oxygen, seem to be in part changed to resin; so that the London college has properly directed decoctions of bark to be boiled only for a short time in close vessels. There are a variety of gum resins used in medicine, of which the principal are the fetid gums, aloes, and opium.

The acrid resins exhibited by themselves often adhere to the coats of the intestines, irritating and inflaming them. These inconveniencies are remedied by alcaline salts, by soap, and in a great degree by sugar, if previously triturated with the resin. Essential oils are said to correct resins; but the oil soon separates in the stomach, and the resin is equally active with the added stimulus of the oil.

The action of these medicines is extended beyond the primæ viæ, as is evident from the children being purged by the milk of those nurses who take them. See Neumann's Chemical Works; Aikin's Dictionary of Chemistry.

RE'SINA A'NIME. See ANIME.

RE'SINA FLA'VA remains after the distillation of oil of turpentine, and is the common resin of the shops, chiefly employed in external applications. It forms part of the composition of several plasters, and gives a name to one ointment, *unguentum resinæ flavæ*. (See BASILICON.) Lewis says, in taste it is considerably bitter, and sometimes given as a corroborant and diuretic, in preference to the turpentine, as containing less of its stimulating qualities. On trial we could not find any remarkable medicinal virtue in it, even in large doses. Materia Medica. See ABIES.

RE'SINA LUTEA AUSTRALASIÆ. The yellow resin of New Holland, is produced from a low herbaceous plant, which bears its fructification at the end of a long hollow reed. The resin seems to exude from different parts of the plant; but is found in the earth after the tears have separated, and may be obtained in large quantities. Its most powerful menstrua are alcohol and ether; but it is wholly soluble in the water of pure kali. It seems to be slightly tonic and antispasmodic, to which pectoral qualities have been liberally added; but does not promise to be an important addition to the materia medica.

RE'SINA RU'BRA AUSTRALASIÆ. The red resin of

New Holland, is a production of the *eucalyptus resinifera* of Wildenow, ii. 977, and Linnæan Transactions, iii. 84. It resembles in every respect the gum kino; nor is it in a medical view superior.

RE'SINA TO'STA, FRICTA, NIGRA. See COLOPHONIA.

RE'SINÆ FLAVÆ UNGUENTUM. See BASILICON FLAVUM.

RESPIRA'TIO, (from *respiro, to take breath*). BREATHING, *anapneusis*, the action of taking in and discharging the air from the lungs, including, therefore, inspiration and expiration.

This function is of the most extensive importance, since there are few animated beings to whose circulating fluids the occasional access of air is not essentially necessary, either in its gaseous state, or as combined with water. In general the weight of the air is alone sufficient for its impulse, and it is necessary only to make some vacuum to admit either air or water. In the amphibia, and in fish, the aperture of the mouth, and the action of the jaws propels the fluid, either air or water, into the lungs, or over the gills, that the blood may partake its salutary influence. In insects we find no apparatus to assist its action, though some such apparently exists, since the spiracula lead to canals which pass through the whole body, anastomosing freely with each other. The numerous spiracles seem to show, independent of these anastomoses, some separate influence, since by varnishing them in succession, so as to prevent the access of the air, the parts become successively paralytic; but the animal does not die till the upper apertures are closed.

In the human body air is received into the lungs in consequence of a vacuum formed by the elevation of the ribs. With their action the diaphragm seems to correspond; and from a convex form towards the cavity of the thorax, it becomes nearly straight. It has been represented as becoming concave; but this is wholly inconsistent with the phenomena of muscular action. When the action of the intercostals is remitted, the chest falls in consequence of the elasticity of its ligaments, and relaxation is a constant alternating state with contraction in every muscle, unless when diseased. This statement is now generally acknowledged to be correct; nor need we enlarge on the very different opinions which have been offered on the subject, or attempt to elucidate the difficulties, which, on other views, have been felt. The only remaining difference of opinion relates to the respective share of the diaphragm and intercostals in this function. The latter are said by some late authors to fix the ribs only, and that the enlargement of the chest is chiefly effected by the contraction of the diaphragm. Each, however, produces some effect, though the chief agent is undoubtedly the diaphragm. In women the intercostals seem to have a greater share in enlarging the thorax than in men, from the greater arches of the ribs, and the final cause is to assist respiration, when the motion of the diaphragm is impeded by the enlarged uterus. We have said, that all the ribs are raised, and this is perhaps strictly true, though Sabatier contends that the lower ribs descend. (Memoires de l'Academie Royale, Année 1778). Other physiologists have, however, drawn different conclusions, both from the structure of the parts, and from observation. It has been contended also, that as the external and internal intercostals cross each other obliquely, their action must be different, and even opposite; but this has been fully contradicted by an experiment of Haller. In this experiment, it was also found, that in inspiration the ribs did not approach, but rather receded, and the space was, in part, gained by their protruding the sternum.

If, as we find in pregnant women, near the time of delivery, the intercostals carry on the function of respiration almost exclusively, so at other times it is chiefly, if not wholly, effected by the diaphragm. The union of the ribs with the sternum has been anchylosed sometimes with little injury to respiration, though more often with dyspnœa. When, from various causes, respiration is difficult, or, in other words, when water, inflammation, or other causes prevent the access of the air, or the elevation of the ribs, different neighbouring muscles are brought to the assistance of the usual agents, particularly those of the thorax in inspiration, and those of the abdomen in expiration. To give a more fixed point to the former, the elevatores scapulæ are exerted, and the shoulders are raised.

In the whole of this function, the lungs are passive. Contiguous to the pleura, or at least separated only by an halitus, they are in contact with that part of the membrane which lines the ribs, both in inspiration and expiration, following in each the motions of the chest. The apparent object in this function is to expose every particle of blood, in succession to the air. The circulation seems to stagnate through serpentine vessels during expiration, and to flow freely when these are distended by the distension of the lungs. This, though apparently obvious, has been denied, chiefly on the principle, that the regular return of blood irritates the heart to regular contraction. Yet when the lobules are distended the canals of the vessels are necessarily straiter, and when respiration is more frequent, the pulse is quickened. Whatever be the state of this function, there is always sufficient blood carried back, to stimulate the heart to regular action. The blood-vessels, we have seen, dispersed freely on the cellules into which the extremities of the bronchiæ terminate, and the containing coats are there so thin that the wax of the injection exudes. Whether air can pass or repass has been the subject of some controversy; and however discordant the calculation respecting the extent of surface to which the blood is exposed, physiologists have generally agreed that it exceeds considerably the whole surface of the body.

The capacity of the thorax, the quantity of air taken in at each inspiration, and that remaining after complete expiration, has been differently estimated. Dr. Goodwyn, Mr. Coleman, Dr. Menzies, Mr. Kite, and Mr. Davy, by different experiments, have endeavoured to determine these questions; but the results have greatly differed. The subject does not appear to us one of considerable importance, so that, without any extensive disquisition, we shall adopt the conclusions of Dr. Bostock, in his late Essay on Respiration. He thinks, that about forty cubic inches of air are taken in, at each inspiration; that the lungs, in their natural condition, contain about 280 cubic inches; and that about 109 cubic inches are left after an ordinary expiration. Were we inclined to be critically minute, we think we could show that each number is somewhat too high; though, on the whole, these conclusions are supported by the

best physiologists. According to this calculation, however, about one-seventh of the contents of the lungs are discharged by an ordinary, and somewhat more than half by a violent, expiration. A bulk of air nearly equal to three times the contents of the lungs will be thus discharged in a minute, and about 4114 times their bulk in twenty-four hours.

The uses of respiration were for a long time unknown; and imaginary effects were imputed to this function, particularly a more intimate mixture of the blood, by its fancied rapidity through the lungs. The whole mass of blood was supposed to pass through the lungs in the same time that it did through the rest of the body, and, of course, it was thought that its course must be more rapid, though it would be apparently obvious, that if the circuit was shorter, the celerity need not be so great. There is, however, no evidence, except the most uncertain calculation, that the whole mass does pass through the lungs in a corresponding period with its circulation through the whole system: nearly the same quantity is returned in the same time; but if we can measure, or at least approximate, the capacity of the vessels of the lungs, we are unacquainted with the extent of the vessels of the general, or as it may be styled, the aortic system. The nerves, in their passage through the diaphragm and the liver, from the compression of this muscle, were supposed to be affected; and the alternate contraction and relaxation of the diaphragm, as well as of the heart, were attributed to it. The nerves in general, however, pass through the more tendinous portion; and, as the diaphragm in its contraction is only less concave, the pressure on the liver cannot be considerable. The concurring actions of the stomach and abdominal muscles are the only powers which seem to emulge the biliary ducts. The influence of respiration on the course of the chyle in the thoracic duct is wholly imaginary; for pressure would only be useful if there were valves in it; but there are none; and, in experiments on living animals, the chyle is seen to move in the duct, though respiration be impeded or prevented.

The necessity of a supply of fresh air in respiration must have been known from the earliest periods; but the source of this necessity was little understood, till Boyle found the respired air loaded with aqueous vapour, and diminished in bulk. Mayow, whose fair fame has lately been rescued from oblivion, showed that some principle, which he called a volatile etherial spirit, was imbibed from the air, and Dr. Black found that air respired contained carbonic acid gas. In this view of the subject, the unfitness of the air for the continuance of life was attributed to its diminished elasticity; for it was only suspected that carbonic acid gas was not fit for the continuance of this function. At last, after a period of more than twenty years, the constitution of the atmosphere was taught by Scheele and Lavoisier. They found that the apparently homogeneous atmosphere was composed of two gases of different properties, the oxygenous and the azotic, in the proportions, if bulk be considered, of 22 to 78, if the weight, of 26 to 74. This proportion of a fluid unfit for respiration, in air essentially necessary to life, was at first astonishing, till it was found that oxygen, like ardent spirit, was poisonous, by its destroying, from excessive stimulus, the excitability, and that, like it, to be innocuous, it must be lowered. Late experiments, however, seem to show that the azote is not wholly useless. In explaining the process of animalisation, we found the necessity of some principle, which could reduce the newly absorbed nutriment to an animal nature, and this appears to be azote. Yet the idea is encumbered with difficulties. Azote is an excrementitious fluid; and the changes produced in the blood, from its circulation through the lungs, are apparently those from oxygen only. It is not, however, a very absurd idea that a principle, at first necessary, may in the end be injurious from excess. In fact, Mr. Davy, in some very accurate experiments, found a remarkable deficiency of azote, amounting in twenty-four hours to about four ounces and a half.

The changes, produced in the atmospheric air, from respiration, are found chiefly to affect its oxygenous portion: this is diminished; and water, in the state of vapour, with carbonic acid gas, are substituted. It is not certain whether the latter gas is separated, or that its basis, carbone, with the oxygenous gas inspired, are its ingredients. The latter is more probable; and, though air contains a small portion of this gas (about 0.01) naturally, its proportion in expired air is very considerable. The oxygenous portion is undoubtedly that part most essential to life in general; and, from the highest order of animals to the lowest, the great difference seems to be, that in the latter the oxygen is more slowly and more completely separated. A man dies while the air still retains a comparatively large proportion of oxygen; snails separate the whole completely (Vauquelin Annales de Chymie xii. 278; Spalanzani on Respiration). In general, the greater the heat, the larger proportion of oxygen is necessary: birds, in general, die when two-thirds of this principle are exhausted. In the human body the greater the rapidity of the circulation, whether from increased temperature, muscular action or fever, the larger proportion of oxygen is required. From a hundred parts of oxygenous gas, were lost in respiration, during an hour and quarter, when the animal breathed with great difficulty, three and a half cubic inches; and of the remainder sixteen and a half were absorbed by potash. In another experiment, the proportions lost and absorbed were somewhat greater; and it seems probable that the purer the air, the greater is the proportion of carbonic acid gas, as if at least a portion of the oxygen was converted into it. The quantity of oxygen, consumed by a man in twenty-four hours, is nearly 46.000 cubic inches, or about two pounds eight ounces troy; and the quantity of carbonic gas formed probably exceeds three pounds troy. The diminution of the bulk of air by one respiration is about $\frac{1}{85}$ of the whole. Mr. Abernethy supposed, that in common respirations the bulk of air was actually increased. It must undoubtedly be expanded by the heat of the body, a circumstance perhaps not sufficiently taken into the calculation; but he supposed also, that the carbonic acid gas was a superadded portion by exhalation from the vesicles of the lungs, while the diminution, apparent when an animal was long confined in air, arose, in his opinion, from its absorption. The quantity of moisture which is discharged has been differently estimated. It appears to have varied from 11180.57 to 13704 grains in twenty-four hours: the average is 12442; but perhaps the quantity of watery fluid, discharged at different times, varies. It is supposed, by Lavoisier, that this water is formed by the union of the oxygen with hydrogen.

Other physiologists have attributed it to a common exhalation; but, when the quantity of oxygenous gas which disappears is accurately examined, it will be found greater than can be accounted for, if we even admit portions to be employed in forming the water and the carbonic acid gas. It is highly probable, therefore, that it is in part absorbed. It is not, however, equally probable, that the water arises from the union of the oxygen with hydrogen. In general, the union of these gases is effected with some difficulty, and we suspect that, in every instance, the co-operation of the electric fluid is requisite. This fluid is generally found free, in the atmosphere, and may become an intermede in the present process. In the change also from a vegetable to an animal nature, hydrogen is generally lost; so that, though some of the water in expired air arises from exhalation and evaporation, some perhaps may be formed.

The changes produced on the blood by respiration are now more clearly understood than in the time of Boerhaave and Haller. Blood which has passed through the lungs is of a brighter colour than the venal blood, and has a greater capacity of heat. The colour we now know to be owing to the influence of the oxygenous gas, and the darker colour of venal blood to carbone. Blood, stagnating without the access of air, becomes of the nature and colour of venal blood: it assumes the same appearances, when exposed to any of the unrespirable gases.

When we considered (see DIGESTION) the different nature of the alimentary substances taken in, which are generally in part vegetable, we found an accumulating portion of carbone, and sometimes of hydrogen, while in the animal fluid these in part disappeared, and the predominating principle was azote. We can detect the source of the carbone in the blood, in conformity to this idea, from the thoracic duct, and we perceive that the newly formed aliment is anxiously conveyed, immediately on its reaching the blood-vessels, to the lungs. The oxygenous gas is there united with it, and carbonic acid gas immediately formed, which is carried off by the air. At the same time probably a portion of hydrogen becomes water, while the azote taken in more completely animalises this new fluid, and adapts it for furnishing the different secreted fluids. In the course, however, of the circulation, the oxygen more completely unites with the remaining carbone, so as to form an oxide, which thus assumes a dark colour, and requires a new supply of oxygenous gas, to change it to carbonic acid air, and fit it for its discharge.

The change thus induced by the circulation is chiefly chemical, since it may be imitated out of the body, and the successive variations, from the florid colour to the darker hue, and the contrary, may be effected by confinement from air, and again restoring the blood to the access of oxygen. The oxygen, in this instance, will have its effect through a small bladder, or indeed any vessel of the body, if the cellular substance be removed. The effect therefore will be more certain and speedy through the thin vessels of the lungs, whose diameters admit but a small proportion of the blood. It acts also through the serum, and, as Mr. Davy supposes, by its previous solution in this fluid. The reason of the more striking change to the florid hue we do not, however, understand, as we are so little acquainted with the nature of the red globules. Their colour is found from some late experiments to be owing to phosphorated iron, with perhaps some uncombined oxide of the same metal. That the oxygen and hydrogen may form this acid, which immediately unites with the uncombined oxide, is not an improbable, though an unsupported, suggestion; but we are apparently on the eve of obtaining more satisfactory information. The azote absorbed in this function contributes to form the gluten of the blood, which probably differs, in this respect only, from albumen; and, in an increased proportion, the fibrin. Whether this last principle can supply any waste or destruction of the truly fibrous parts of the body is doubtful. We have never been able to detect any such supply, nor has, in any instance, a truly organic portion of the body been reproduced, within our observation or recollection. Where organs are reproduced, it is not probably in a single animal, but in a congeries of animals propagated, analogously to vegetables, from buds.

One effect of respiration has been already considered, viz. the heat of animals. (See CALITUM INNATUM). We again introduce the subject to remark, that were this the effect of the chemical changes which take place in the lungs, this part of the body should be warmer than any other, which is by no means true. It is probable, therefore, that if wholly owing to a chemical change, it is produced by the gradual incorporation of the oxygen with the carbone, during the circulation, an opinion first suggested many years since by Dr. Duncan. The increase of heat which actually takes place in the lungs, from the play of affinities, is apparently compensated by the cold produced by the evaporation of the moisture.

With respect to other gases, the hydrocarbonate is the only one decidedly injurious from powers certainly sedative; for nitrous, vitriolic acid, and alkaline airs, are only these substances in a gaseous form. The carbonic acid air cannot be breathed for any considerable time, even when diluted, without pain; and hydrogen and azote appear to be only injurious inasmuch as they exclude oxygenous gas. Carbonic acid air, unmixed, produces an immediate spasm on the lungs, and cannot be taken into them. The last experiments of Lavoisier (Memoires de l'Academie des Sciences, 1789), we perceive, afford great room for doubt whether the last is capable of any great advantage or injury, unless from constant use.

Annales de Chymie, vols. iv. v. vii. ix. xii. xxi. xxiv. xxix. xxxiv. xxxvi. xliii.; Journal de Physique, vols. xxv. xxviii. xliii. xlvi. xlvii. lii.; Memoires de l'Academie des Sciences, pour 1739, 1724, 1729, 1777, 1778, 1780, 1789, 1790; Memoires de la Societé Royale de Medecine, année 1782-3; Philosophical Transactions, 1776, 1779, 1797; Hales' Statical Essays; Richerand's Physiology; Blumenbach's Institutiones Physiologiæ; Fourcroy Medicine Eclairée par les Sciences; Davy's Researches; De la Rive de Calore Animali; Goodwin on the Connection of Life with Respiration; Kite's and Abernethy's Essays; Menzies and Coleman on Respiration; Lavoisier's Elements; Higgin's Minutes; Thompson's Chemistry; Bostock on Respiration; Spalanzani on Respiration.

RESTA BOVIS, (because it hinders the plough). REST-HARROW. See ANONIS.

RESTAURA'NTIA, (from *restoro, to revive*). RESTORATIVES, *analeptica, resumptiva*. Medicines suited to restore lost strength; but chiefly confined to those medicines which repair the waste of fluids, and in that sense nearly synonymous with the *nutrientia* and *stimulantia*. See CARDIACA.

RESUPINA'TUS, (from *resupino, to turn upwards*). A leaf of a plant turned the lower side uppermost.

RESUSCITATIO, (from *resuscito, to revive*), the art of reviving persons apparently dead. Apparent death, as remarked in the article MEDICINA FORENSIS, arises from narcotic poisons, either fluid from intoxication, or deleterious gases introduced into the lungs; excessive evacuations, extreme cold, sudden terror, hanging, or drowning. A stroke of lightning has been added to the causes; but the apparent death from this cause is real: the victim rarely recovers. The signs of death we have also enumerated in the same article; but having remarked their equivocal nature, we need scarcely add, that unless the cause has long continued, or the symptoms are peculiarly decisive in their degree, they should not deter us from continuing our attempts.

The principal cause of death in these instances is the destruction of the irritability of the muscular fibres, or a diminution of the fulness of the vessels to such a degree that they are no longer able to support the due tension of the brain. Hanging or drowning as connected with topical injury, we shall reserve for a separate consideration under the appropriate articles SUSPENSIO and SUBMERSIO.

The apparent death from loss of tension in the brain occurs where the evacuations, chiefly the sanguineous ones, have been excessive, or where it has followed sudden terror, which seems to paralyse the heart, or at least greatly to diminish its force. In the first case, if the sanguineous discharges continue, we must not too eagerly attempt resuscitation, as death will probably ensue from the return of the hæmorrhage. It requires the most careful attention, and the exhibition of such restoratives as will preserve life, but will not powerfully excite the action of the heart and arteries: such cases are not usually fatal, and we recollect no instance where increased discharges of any other kind produce apparent death, which requires the exertion of the medical powers of resuscitation.

Sudden terror partakes of each cause; for though it immediately destroys the irritability of the heart, yet it is fatal by depriving the brain of the tension which it derives from the fulness of the vessels. Its remedies will, therefore, be considered under the next head.

To restore the irritability of the sanguineous, and nervous system, plans apparently the most improbable and absurd have been employed, sometimes with success. *Bleeding* is one of these, and when the immediate cause of the loss of irritability is a congestion in any system of vessels, or when a debilitating cause, from relaxation, occasions an accumulation of fluids, this evacuation is often useful. Thus it is equally beneficial in those cases of apparent death which follow a suddenly altered determination of the blood, or which proceed from deleterious gases of a sedative nature. Taking off from the load will often occasion an immediate contraction, as we know from the observation of Mr. Coleman, so often repeated; and when a chain of actions is once begun, it is usually followed by those before associated with it. The blood in this case should be taken from a large orifice, that the necessary discharge may be made in the smallest space of time, and produce the desired alteration with as little debility as possible. For this reason topical bleedings, though directed to the affected part, are less beneficial, since the discharge is slow.

Emetics have been directed from an indiscriminating empiricism, rather than sound argument or judicious induction. Yet so general has been the practice, that it would be rash to deny their utility in some cases. The first action of emetics inducing nausea is undoubtedly sedative; and during the whole of this introductory process, emetics are debilitating powers. We know not that on this account these remedies should be rejected, since relaxation, in many instances, is the *novi motus initium*. Yet reasoning of this kind is too fallacious to support their use. The action of vomiting, on the other hand, we have found useful, even, we suspect, in cases where there is a considerable congestion of blood in the head. If then we can produce this action, without any, or with a very slight preceding nausea, we may perhaps assist recovery without adding to the debility. This effect may be produced by the vitriolated zinc, assisted by mustard whey, or camomile tea, with the aqua ammoniæ; or, if we still want a more active power, by a few grains of vitriolated mercury. It is obvious, however, that this remedy is confined to that period of recovery, or that degree of asphyxia, where the patient has retained, or possesses the power of swallowing.

Cathartics are also confined to the period when the powers of life have been partly roused, or are not wholly lost; and they should be of the most active kinds; but in the form of clysters they are among the earliest and most useful aids. In a moment of emergency three or four ounces of common salt may be dissolved in a pint and half of water; three or four ounces of soap, or a large table spoonful of the soft black soap, in the same quantity. If more time be allowed, three drams of the pulp of colocynth may be boiled in a pint and half of water to a pint, and a bunch of groundsel, a weed found in every garden, will add to its activity. Tobacco clysters are subject to the same objections as emetics, and indeed are chiefly used for the relaxation they produce. Those who adopt the idea of relaxation contributing to a new chain of associated motions may employ them; but, though the theory might be rendered plausible, experience will contradict it, and tobacco clysters, with nauseating emetics, should be banished from the resuscitating powers.

Of the *diaphoretics* warmth and friction are only admissible, and these, with a few exceptions, are to be very early employed, and steadily continued. Clysters contribute to resuscitation by their warmth; and warm air blown into the lungs is highly useful. Expanding the chest we found the chief agent in the function of RESPIRATION, q. v. and in every case of apparent death there is usually an accumulation of mucus in the lungs, which the warm air will contribute to dissolve. Air of a higher quality, if at hand, will be more useful. Carbonic acid gas and, as we shall find, water in persons drowned, produce a constriction on the glottis, which may not be removed; and indeed the difficulty of inflating the lungs, except by the most experienced operator, is considerable. Bronchotomy has been there-

fore advised; and this operation may be easily performed by a small, flat trochar, which may be introduced safely through the rings of the trachea, after cutting the skin, to lessen the resistance, which would otherwise require so great a force as might carry it beyond the posterior part of the tube.

General stimulants of the most active diffusible kind are immediately necessary, and the good effects of friction are greatly increased by every rubefacient, as common salt, flour of mustard, aqua ammoniæ, tinctura cantharidum, diluted vitriolic acid, &c. When the patient can swallow, wine or spirits, as nearest at hand and most congenial to the feelings of the attendants, are generally employed, and they will not be improper: the volatile alkali is, however, always more useful, since these, though diffusible, are indirect stimulants. If given, they should be followed by warm fluids, impregnated with some of the common aromatic herbs, and particularly by nourishing broths, warmed by condiments, as the cayan or common pepper. Among the stimulants electricity and galvanism have been usually reckoned; but as higher degrees of each destroy by exhausting irritability, even the lowest are suspicious; nor can either be safely admitted in the form of shocks. Drawing sparks by an electrical machine will undoubtedly stimulate with less danger; but in this view it is by no means a powerful agent, and we have not yet learned to manage galvanism in the same way.

We have hinted at exceptions to the general directions respecting warmth, and we alluded to the cases of apparent death from intoxication, deleterious gases, and perhaps sudden terror. In these *cold water*, dashed against the face and breast, is often quickly efficacious. The seamen immerge their comrades in the sea; and the poor victims of the carbonic acid gas, in the Grotto del Cani, are recovered by throwing them into a neighbouring lake.

RETE, (from the Hebrew term *reshta*). A congeries of vessels, or any contexture of fibres resembling a net.

RE'TE MALPI'GHI. See PULMONES.

RE'TE MIRA'BILE, *dictyoides*, a congeries of blood-vessels in the brain.

RE'TE MUCO'SUM. *Corpus mucosum* and *reticulare*. The true skin on its whole surface is covered with two lamellæ; the inner, styled *rete mucosum*, the exterior the cuticle. The former is the principal seat of colour in man; in Europeans transparent, in mulattoes brown, and in negroes black. One of its uses is, to keep the papillæ moist, which would otherwise be unfit for sensation; and its colour apparently depends on the blood, which is darker in the African than in the European: the bile and semen of the Africans are said to be darker than of the Europeans. Wherever the cuticle thickens, the rete mucosum becomes thicker in proportion; and in the fœtus of nine months the rete mucosum is yellower than the cuticle. In Africans it is more easily separated from the cuticle than in Europeans.

RETE'NTA, (from *retineo, to keep back*). See EXCRETA.

RETICULA'RIS MEMBRA'NA, (from RETICULUM, q. v.) See CELLULOSA MEMBRANA.

RETI'CULUM, (a dim. of *rete, a net*). The second stomach of a ruminating animal. (See ABOMASUM.) It sometimes means the *omentum*.

RETIFO'RMIS, *amphiblestroides*, an epithet applicable to any net-like appearance, used to express the coat of the eye, encircling, according to Galen, the vitreous humour; in modern language the *choroides* which forms the plexus choroides, or retiformis. See CHOROIDES, and PLEXUS CHOROIDES.

RETINA, *amphiblestroides*, the expansion of the optic nerve on the inner surface of the eye. Though it is supposed to be a production of the medullary substance of the optic nerve spread like a membrane, and from its resemblance to a net, called *retina*, its medullary substance cannot be clearly traced as continued on to form it. There is, however, little doubt of its being an expansion of the nerve, and the seat of vision. (See OCULUS.) Haller records a case in which it was changed to a solid substance.

RETRA'HENS AURI'CULUM, (from *retraho, to draw back*). See ABDUCTOR AURIS.

RETROVE'RSIO U'TERI, (from *retroverto, to turn backward*). See PROCIDENTIA UTERI. In this disorder the womb falls backward, between the rectum and vesica, with its fundus on the intestinum rectum, raising the os tincæ to the upper part, and drawing the meatus urinarius from its natural position. It sometimes happens that the fundus is thrown over the os pubis, and the meatus drawn backward; but this cannot be a *retroverted* uterus, and indeed seldom occurs but in women who have borne many children. The retroverted uterus often happens in the early stages of pregnancy, seldom later than the fourth month, occasioning first a difficulty, then by degrees a suppression of urine, soon after of the intestinal discharge. The urine is in this case to be drawn off by means of the catheter, and a stimulating clyster injected. The woman is then placed on her knees and elbows, with her head downwards, and by introducing one hand up the vagina, we endeavour to draw it forwards, assisted by two fingers in the anus. After repeated trials in different positions we often succeed, and we must then be cautious to keep the woman in the most perfect state of rest till the uterus rises above the pubes. See London Medical Observations and Inquiries, vol. iv. p. 388, &c.; Hunter's Tables; Denman on the Retroversion of the Uterus; White's Surgery, p. 163.

REUNIO, (from *reuniri, to unite again*). The union of parts separated by wounds or accidents. This is a very important function of the human system, and most happy provision of nature to prevent the consequences of injuries. When any part is wounded, an inflammation of the extreme vessels apparently takes place, and an effusion, as in common inflammations of membranous parts, follows. This effusion consists of the gluten, perhaps the fibrin, of the blood; and when the solution of continuity is in the bone, the divided arteries retain their function of separating the calcareous phosphat. The watery parts, in which the gluten and the fibrin were dissolved, are absorbed, and the solid substance constantly assumes a looser texture; in fact becomes a cellular membrane, more or less dense in proportion to the quantity of fibrin; in other words, to the strength of the constitution. Sometimes arteries seem to shoot into the inorganic mass of a firmer texture, which seems to defend the divided extremities, and suggested to Mr. Hunter his opinion of the vitality of the blood; but this extension of the arterial sys-

tem is limited, and not in a greater degree than can be accounted for by the convolutions of the extreme vessels. In reality, with the utmost attention we have been able to exert, we have never seen in the human system the reproduction of an organised part; nor in the cellular substance any thing but inorganic matter. See REPRODUCTIO.

Journal de Medecine, vol. xxxiii.; Domeier de Viribus Naturæ Medicatricibus, in Reparandis et Coadunandis Partibus Corporis Humani abscissis; Richter's Chirurgical Observations; Theden Neue Bemark, i. 85.

REVU'LSIO, (*à revello, to draw back*). See DERIVATIO and CIRCULATIO.

See Goelicke de Revellentibus et Derivantibus Veterum; Halleri Opera Minora, i. 212; Gohlius de Motus Tonici Demonstratione per Revulsionem et Diversionem Veterum; Watts' Dissertation on the New Doctrine of Revulsion.

REX METALLO'RUM. See AURUM.

REX VEGETABI'LIUM. See CROCUS.

RE'XIS ANE'BION. See ANCHUSA.

RHA VE'RUM ANTIQUO'RUM, (Ῥα, from the river *Rha*, the Volga, upon whose banks it grew). See RHAPONTICUM.

RHABA'RBARUM, RHUBARB; *rheum; lapathum Orientale; et Chinense.* The latter Greeks are said to have called it *barbaricum*, because it was brought from a country lying on the Sinus Barbaricus.

It is the *rheum palmatum* Lin. Sp. Pl. 531, a plant resembling the docks. The seeds of different species were at various times brought to us, particularly those of the rheum compactum et undulatum; but the seeds of the true kind, the rheum palmatum, we owe to the care of Dr. Mounsey; though different naturalists contend that rhubarb is sometimes procured from the other species just mentioned. The leaves are palmated, acuminated, and slightly hairy. The root, the only part in use, is brought from China, and from Siberia, by way of Russia. The latter is generally brought to us from the Levant, and has consequently obtained the name of Turkey rhubarb. It is of a finer grain than the Chinese, is perforated in the middle, and less active as a purgative, though supposed to be a more powerful astringent. The English rhubarb is a still more active laxative; but inferior in every other respect. The root is always raised too soon, for it should not be less than twelve years old. All the foreign rhubarb is, however, brought from nearly the same place, a chain of high mountains near Sini in China, extending from the thirty-fifth to the fortieth degree of north latitude: the difference owing, it is said, only to the care in selecting and drying the roots. The Turkey rhubarb is in flattish round pieces perforated in the middle, the Chinese (East Indian) in cylindrical ones.

The rhubarb which is in smell aromatic, in taste subacrid and bitterish, of a lively colour when cut; firm, and solid, but not hard; easily powdered; when powdered of a bright yellow; and when chewed imparting to the saliva the same colour, without a mucilaginous taste in the mouth, is always preferable.

Rhubarb yields its purgative quality most freely to water: after digesting with water it becomes inactive; but after repeated digestions with alcohol, it retains a portion of its purgative virtue. The powder is most active given in a dose from ℈i. to ʒi. An infusion in water follows; but the spirituous tincture, though less purgative, retains more of the aroma and of the astringency of the root. The watery infusion, reduced to an extract, is less powerful; but the spirituous extract is nearly of the strength of the powder.

The tincture of rhubarb of the London college is directed to be prepared in the following manner: Take of rhubarb sliced, two ounces; smaller cardamom seeds, husked and bruised, half an ounce; saffron, two drams; proof spirit of wine, two pints: digest for eight days, and strain.

The compound tincture of rhubarb is prepared by digesting two ounces of sliced rhubarb; ginger powdered, and saffron, of each two drams; liquorice root bruised, half an ounce, in twelve ounces by measure of proof spirit for fourteen days, adding a pint of distilled water.

Wine of rhubarb.—Take of rhubarb sliced, two ounces and a half; smaller cardamom seeds, bruised and husked, half an ounce; saffron, two drams; Spanish white wine, two pints; proof spirit of wine, eight ounces by measure: digest for ten days, and strain. Pharm. Lond. 1788.

These are intended for stomachics and tonics, as well as for purgatives. Spirituous liquors chiefly extract that part of the rhubarb in which the two first qualities reside. When given with the first intention, a spoonful or two is a dose; but when used as purgatives, from two to three ounces must be given.

The Edinburgh College directs *an infusion in water*, in the proportion of an ounce to a pint, adding to each pint an ounce of the spirituous cinnamon water.

Toasting rhubarb, supposed to add to its astringency, only diminishes its purgative power, so that a larger dose may be taken.

Rhubarb is a mild cathartic and astringent, strengthening the intestines, and leaving the belly costive. It is consequently preferred in diarrhœas and dysenteries; but in the latter is often inconvenient from its astringent property. It is by no means peculiarly advantageous as a purgative, though for ages highly valued, since it acts with considerable irritation and much pain. It is chiefly useful in weak stomachs as a laxative, uniting an astringent power; and often as a cholagogue, since it seems to irritate in a peculiar manner the orifice of the biliary ducts.

It is often advantageously joined with neutral salts, and these appear to form an useful laxative in fevers, as the salts seem to act more quickly, and to assist the solution of the rhubarb. Soap in obstructions of the bile is not only a convenient addition, but the medicine appears to act with more success. In the diseases of children, it is apparently useful by dislodging the viscid mucus, and discharging the bile; and in this effect it is assisted by magnesia. Alkalis, absorbent earths, and neutral salts, change its yellow colour to a red, and seem to produce some chemical change in its nature; for with these additions it is more quick in its operation, and apparently more mild. Chemistry has not, however, taught in what this change consists; for rhubarb has ceased to be the fashionable medicine it once was. The extractive matter is the chief repository of its virtues; but the aroma apparently consists in the resin; and when rhubarb has lost the aroma, its purgative powers are greatly diminished. As the extractive matter is soluble both in water and alcohol, it probably

contains a portion of resin, which is dissolved in the aqueous fluid by the intermede of the gum. The vinous tincture, which we have described, is apparently its best preparation. Neumann obtained from 480 grains 180 of alcoholic, and afterwards 170 of watery extract. By inverting the process, the former amounted only to five grains, and the latter to 350. Rhubarb also contains some tanin, and about one sixth of oxalate of lime.

It has lately been applied to ulcers with some success, though the particular species of ulcers to which it was best adapted, or the principle on which it is supposed to act, have not been explained. It is sprinkled over the wound lightly once, sometimes twice, a day; but in cases of great irritability, one part of powdered opium is added to eight of rhubarb. The compound powder of rhubarb, formed of equal parts of rhubarb and ipecacuanha, has been employed for the removal of warts.

See Lewis and Cullen's Materia Medica; Neumann's Chemistry.

RHABA'RBARUM A'LBUM. See MECHOACHANA ALBA.

RHABA'RBARUM DIOSCO'RIDIS. See RHAPONTICUM.

RHABA'RBARUM MONACHO'RUM. See LAPATHUM HORTENSE.

RHABA'RBARUM SIBERICUM, *rheum undulatum* Lin. Sp. Pl. 531. See RHABARBARUM.

RHABDO'IDES, (from ῥαβδος, *a straight twig*, and ειδος, *form*). See SAGITTALIS SUTURA.

RHACHIS. See SPINA.

RHACHISA'GRA, (from ῥαχις, and αγρα, *pain*). See ARTHRITIS.

RHACHIÆ'I, or RHACHITÆ, (from ῥαχις). The muscles belonging to the spine of the back.

RHACO'SIS, (from ῥακος, *a rag*), *detritio*. A ragged excoriation of the relaxed scrotum.

RHA'GADES, (from ῥηγνυμι, *to break off*). CHAPS, CLEFTS, or FISSURES in the SKIN; are usually caused by a want of moisture, either from a defect of perspiration, or from an unusual dryness of the air. They are seated about the anus and various parts of the pudendum muliebre, the corners of the mouth, nostrils, eyelids, nipples, &c. From these chaps issues a thin, sharp ichor, sometimes venereal, or the production of other acrimony; at times they are very painful. If newly contracted, they are easily removed; but if their lips are deep, callous, and inflamed, the difficulty is considerable. Emollient and sedative applications are the most useful; but the hard, callous lips must be scarified. See a Treatise on the Venereal Disease, by N. D. Falk, M.D. edit. 2. 1774.

Different from the rhagades, in appearance, are the chaps in the palms of the hands and soles of the feet; proceeding often from syphilitic virus, but more frequently either from too great dryness, or some occupations which destroy the organisation of the cuticle and cutis, as dyeing, brass-work, soldering, &c.

RHA'MNUS, (from ῥαιω, *to destroy*, because of its thorns). *Spina cervina, solutiva, purgatrix, infectoria, cervi; hippophaes.* BUCKTHORN, and PURGING THORN, *rhamnus catharticus*, Lin. Sp. Pl. 279, is a prickly bush, or a low tree, common in hedges, having pointed leaves; producing small green flowers in June, and in the beginning of October black berries, which contain a dark green juice, with four seeds in each.

It is usual to find these berries mixed, with the berries of the black elder, and of the dog-berry tree: but the juice of the buckthorn berries is green; and the buckthorn berry hath four seeds. These berries have a faint unpleasant smell, a bitterish, acrid, nauseous taste; operate briskly by stool, and have frequently been employed as hydragogues. They occasion dryness in the mouth and throat, with thirst, and pain in the bowels, unless warm liquor is frequently drank during the operation. Twenty of the fresh berries; forty or sixty in decoction; a dram or a dram and a half of the dried berries; an ounce of the expressed juice, or half an ounce of the rob, or extract, are the usual doses: but the juice made into a syrup is generally preferred by physicians, though it is rarely prescribed alone. If the berries are not pressed, the juice is more pleasant, and also more active as a purgative. The inner bark of the tree is said to be a strong purgative, and to occasion vomiting.

The London College order the syrup of buckthorn to be made in the following manner: take of the juice of the berries of buckthorn, ripe, and fresh gathered, one gallon; ginger bruised, one ounce; pimento in powder, one ounce and a half; sugar, seven pounds. Strain the juice after it has stood some days to subside; and in a pint of it macerate the ginger and pimento for four hours, and strain. Boil the remaining juice to three pints; add that part in which the ginger and pimento has been macerated, and make the whole with sugar into syrup. (Pharm. Lond. 1788.) From one to two ounces are given for a dose, but it is rarely used, on account of its naseous taste, and sometimes its violent operation. When the berries, however, are not pressed, its taste is pleasing. See Cullen's and Lewis's Materia Medica; Neumann's Chemistry.

A name also for the *paliurus, hippophaes, alnus nigra,* and *frangula.*

RHA'MNUS ZI'ZIPHUS. See JUJUBA.

RHAPO'NTICUM, (the RHA of PONTUS). RHAPONTIC, *rheum; rheum ponticum; rha verum antiquorum, rheum Dioscoridis; rhaponticum Alpini; rhabarbarum Dioscoridis;* ENGLISH RHUBARB; *rheum raponticum* Lin. Sp. Pl. 531. Leaves smooth and roundish, pedicles somewhat channelled: grows wild on the mountains of Thrace, whence Alpinus brought it into Europe about the year 1610; and it bears the hardest winters in our climate. The roots are often mixed with those of the true rhubarb, but are detected by their mucilaginous taste when chewed, and not tingeing the saliva of the bright yellow of the true rhubarb. The rhapontic when cut through appears regularly marbled in a radiated manner; is dusky on its surface, and of a loose spongy texture; more astringent than the rheum palmatum, and less purgative; requiring for the latter purpose two or three drams. See Raii Historia; Tournefort's Materia Medica.

RHAPO'NTICUM VULGA'RE, *rhaponticum folio heleni incano, centaurium majus, centaurium magnum.* GREAT CENTAURY, COMMON RHAPONTIC; *centaurea rhapontica* Lin. Sp. Pl. 1294, is a large plant, with leaves composed of oblong serrated segments set in pairs on a middle rib, edged in the intermediate spaces with a serrated margin; the stalk divides towards the upper

part into several branches, which bear on their tops round, soft, scaly heads, from which arise blueish flosculi, followed by down, inclosing the seeds. It is perennial, a native of the southern parts of Europe, and raised in our gardens. The root is of a dark black colour on the outside, internally reddish, yielding, when fresh, a juice of a deep red; with a slight, not disagreeable, smell, and in taste viscid, with sweetness, roughness, and some degree of acrimony. It is considered as an aperient and corroborant, and supposed to be particularly useful in diarrhœas; but very much inferior to the true rhapontic. See Raii Historia; Tournefort's Materia Medica.

RHATANIA, a native of South America, not yet introduced into any botanical system. This root is about the size of a crow-quill, and the cortical part is very thick, the ligneous very fibrous. When recent it is succulent, and full of extractive matter, which, when pressed out and evaporated, furnishes what has been styled the *American extract of bark*, and an astringent, coloured, ingredient for the red wines of Portugal. The extract mixes readily with water; and the powder resembles that of the pale bark. It precipitates a greater proportion of tanin than the Peruvian bark, is more pleasing, it is said, to the taste, and sits easier in the stomach. Half a dram of the extract makes a turbid solution in eight ounces of water, said to equal in virtue the same quantity of a strong decoction of the Peruvian bark.

RHE'NCHOS, (from *ῥέγχω, to snore*). *Rhochmos; ronchus; stertor*, SNORING; a sound supposed to be made betwixt the palate and nostrils by persons asleep. Independent of sleep, this noisy respiration is a symptom of apoplexy, in which the mucus from the fauces is forced through the nostrils. Slevoght attributes it in some instances to the premature healing of the parotid ulcers of children. See Halleri Dissertationes, ii. 43; and Alberti de Rhoncho Dormientium.

Cerchon or *cerchnos* is that rattling noise made in respiration, from the larynx, or the aspera arteria, when the air passes through an accumulated fluid, in cases of asthma, or the last struggles of exhausted nature.

RHE'ON, and RHE'UM. See RHAPONTICUM, RHABARBARUM.

RHENOPHO'NIA, (from *ξενοφωνια, vox peregrina*). See PARAPHONIA.

RHEU'MA, (from *ῥεω, to flow*). A defluction of fluids, in the language of former pathologists, on any part. More properly an increased, and often an inflammatory action of the vessels of any organ, generally confined to inflammatory action of the mucous glands, attended with increased discharge and an altered state of their excreted fluids.

RHEU'MA, CATARRHA'LE, and EPIDE'MICUM. See CATARRHUS and INFLUENZA.

RHEUMA'TICA, (from *ῥευμα*). The RHEUMATIC FEVER.

RHEUMATI'SMUS, (from *ῥευμα*). The RHEUMATISM, a painful disease, affecting the muscles in different parts of the body; sometimes it is supposed the viscera also. It is with or without a fever; called the *acute*, or *chronic rheumatism*. Dr. Cullen places it among the *phlegmasiæ*, defining it a disease arising from an external, and for the most part from a perceptible cause, attended with fever, pain about the joints, following the course of the muscles, affecting the knees and larger joints, rather than those of the hands and feet, increased by external heat. The acute rheumatism is called *myositis*, when the pain is seated chiefly in the muscles; *lumbago, lordosis, nephralgia rheumatica*, and *tabes dorsalis*, when in the loins; *ischias*, when in the muscles of the hips; *pleurodine rheumatica*, and *pleuritis spuria*, when in the muscles of the thorax.

The chronic rheumatism is considered by Dr. Cullen as generally the mode in which the acute rheumatism terminates, and he styles it *arthrodinia*, defining it, after the rheumatism, some violent exertion, or subluxation, pains of the joints or muscles, much increased, particularly on motion, more or less erratic, and alleviated by the heat of the bed, or other external heat. The joints are weak, rigid, very readily or spontaneously growing cold, not attended by any febrile affection, and for the most part without any swelling.

Each variety may be either acute or chronic; yet the latter, though often a sequela of the acute, is in many instances truly a distinct disease; and, as already observed, nearly allied to palsy. In the progress from one to the other state, as in ophthalmia, there are many shades of difference, so that we can scarcely say where the one begins or the other ends. Yet when each is fully established, there can be no doubt of ranking them as distinct species. By assuming articular pain as a genus, independent of fever, we have been able to connect these diseases, without losing sight of the operations of nature, or the rules of classification.

Persons of any age may be afflicted with the acute rheumatism; but it is usually the disease of the young, the strong, and active: while the chronic rheumatism occasionally affects those more advanced in life, and in these it is often peculiarly distressing and obstinate.

The acute or inflammatory rheumatism is attended with fever, pains in the limbs, generally felt in the joints, preventing their motion, and often accompanied with heat, redness, and swelling of the part. When the redness is fixed, and a swelling comes on, the fever and pain abate, though they sometimes continue many days, generally, though not universally, increasing in the evening.

In many instances the fever first appears, and is highly inflammatory, assuming only its peculiar local appearance after some days. The pain is often felt in the muscles, but it shoots out with the greatest violence in the joints; and as it is there felt most severely, the attention of the patient is chiefly directed to them. In many instances it is apparently as much a disease of the joints as the gout itself.

After some days, the pain commonly quits one part and attacks another; but the knees, hips, loins, nape of the neck, shoulders, shoulder-blades, arms, and elbows, are its usual seats; sometimes the feet, ankles, and wrists, are similarly affected, but seldom the fingers or toes. The tenderness of the parts diseased is extreme. The violence of the acute rheumatism sometimes continues about fourteen days, but generally longer, and unexpectedly recurs, when it has appeared to vanish. A weakness and swelling will often remain for a long time.

Rheumatism is generally attended with copious

sweats; but these contribute to support the opinion we endeavoured to establish in the articles DIAPHORETICA and FEBRIS, q. v. that warm fluid sweats, while the skin underneath feels tense and harsh, are not salutary. They certainly are not so in the disease before us, and until the sweat is less clammy, attended with less heat, and a free soft pulse, no relief follows. The urine often deposits a sediment of a dark-red colour through the whole course of the disease; but this seems to arise in part from its paucity, since the discharge is compensated by the sweating, and in part from the febrile spasm not being communicated to the renal vessels. Yet we recollect one instance, if we mistake not, in Leigh's History of Lancashire, where it is said that the urine did not contain its usual saline contents. Sometimes a red sediment is supposed to be critical; but in such cases there is reason to apprehend a mixture of gout. The blood is always sizy, even in constitutions otherwise debilitated; and in the most asthenic states of chronic rheumatism. Miliary eruptions are said to be critical; but it is observed by Dr. Rutherford, that no sweating proceeds from the pained parts, except when the disease yields; and when the perspirable matter has been retained, it often flows with such rapidity as to be stopped under the skin, and to produce papular eruptions. This seems to be the cause of milliaria, when it appears critical.

The distinction of rheumatism is often peculiarly difficult. With gout it is sometimes mixed; but more often the mixture of the two diseases is supposed to exist by those to whom accurate discrimination is an inconvenient task. We have already noticed the distinguishing symptoms under ARTHRITIS, q. v.; and we would only correct the diagnosis in one respect, viz. the remitting form of the disease. Each remits; the gout, however, irregularly; the rheumatism follows the commom febrile periods of remission and exacerbation.

We have observed, that rheumatic pains in the chest resemble peripneumony, or pleurisy, and in the abdomen, enteritis. In each case the soreness to the touch, the pain felt at the origin or insertion of the muscles, while the more appropriate symptoms of the real inflammation of the part are absent, will sufficiently distinguish the nature of the disease. The lumbago sometimes resembles nephritis, or a stone in the kidneys or ureters; but may be easily distinguished. A stone in the kidneys is attended with some irregularities in the secretion of urine, generally with sickness in the stomach; in the ureters, by sickness, a pain shooting down the thigh, with a numbness of the thigh, or a retraction of either testicle. In each case also there is no difficulty of bending the body, which is a constant symptom of lumbago. The sciatica cannot be easily confounded with any disease.

The seat of rheumatism has varied according to the fancy of every author; for reason and observation have seldom lent their aid. Dr. Motherby is decidedly of opinion that its seat is the cellular substance, and its cause acrimony, without inquiring whether the cellular substance is sensible, or what is the source of the acrimony when the disease arises from cold. Dr. Smyth, in the Medical Communications, fixes it in the muscular fibre; but of the nature of the fibre, independent of its vessels and nerves, we know nothing. Some authors suppose it seated in the ligaments, others in the cartilages; but in general it is supposed to arise from acrimony, either from the air, from dysentery, from pituita, suppressed gout, repelled eruptions, from lues, or scurvy. These opinions have been apparently suggested from rheumatism succeeding such diseases in particular cases; but neither system will bear the test of examination as a general cause.

Rheumatism is undoubtedly an inflammatory disease, and its seminium at least is inflammatory diathesis, which consists, as we have said, in increased tone of the arterial system. This is proved by the usual victims of the disease, who are the robust and strong; by the symptoms, those of inflammatory fever; and by the remedies, such as oppose inflammatory diathesis. Even in the weak and emaciated the pulse is harsh, the blood coriaceous, and bleeding often indispensable. It is an inflammatory affection also of the muscles; for motion is painful, the muscles are sore to the touch, and we may assume as a position, at present granted, that muscular organs are only affected. Though the muscles are the seat of the disease, the pain, we have said, is chiefly felt in the joints; and this Dr. Cullen explains by the general principle, that when membranes are affected, the pain is chiefly perceived at their extremities, as the irritation of a vomica in the lungs is felt at the epiglottis, and of a stone in the bladder at the extremity of the urethra. This explanation, however, we are unwilling to admit, as the present disease seems to have no analogy with membranous inflammation. In general, the more closely compacted organs, though insensible in a sound state, are more acutely painful when diseased; and whatever becomes of the question respecting the continuation of the muscular fibres in the tendons, yet both receive arteries from the same trunk, and both must suffer when these arteries are diseased; the tendons, in consequence of their structure, most severely; and thus the pain is chiefly felt about the joint, where the arteries with greater difficulty admit of distension.

It is not easy to say in what consists the difference between rheumatic and membranous inflammation; in other words, between inflammation of the arteries themselves and the membranes on which they are dispersed. That there is a difference is evident; for rheumatism seldom terminates in effusion, scarcely ever in suppuration. The joints indeed sometimes continue puffed, and the limb itself occasionally swollen. We recollect, too, that Morgagni records a case in which rheumatism terminated in suppuration (Ep. lvii. art. 20), and a similar one occurs in the second decad of the Medical Commentaries (iv. 193). We may reply, however, by the old logical axiom, *exceptio probat regulam*; so few are the cases of suppuration, that this is not the natural termination. It is not improbable that, while topical debility occasions the obstruction in the common inflammation, too great action may be its cause in rheumatism; so that while the former is relieved only by effusion, the latter is carried off by the powers of the vessels themselves. This idea is in some degree supported, when we reflect that rheumatism, of all the internal inflammations, is best relieved by stimulants after the phlogistic diathesis has been removed by bleeding.

Rheumatism, therefore, appears in every view of the

subject to consist in inflammatory action of the arterial system, and probably inflammation of the coats of the arteries themselves. This idea will meet every circumstance of its appearances, and connect the various remedies of the most experienced practical physicians. We certainly see rheumatism distinctly only in the voluntary muscles; but if these opinions have any weight, there is no reason why the internal organs should not suffer in the same way. Authors have spoke of rheumatism having affected the heart, the diaphragm, the liver, the intestines (Eyerel), and other organs, when transferred from the limbs. In cases of metastasis only the nature of the inflammation can be exactly perceived; for if these parts are originally attacked, the symptoms will not differ from common inflammation.

The remote causes are cold applied when the body is heated, or indeed any cause of the true inflammatory fever may be occasionally attended with rheumatism. It has been sometimes described as epidemic, and it may appear so in weather unusually cold and uncertain; but we suspect that these epidemic rheumatisms are truly synochi, which are often at first attended with irregular wandering pains in the limbs. The remark of Plencis is of more importance, that rheumatisms are influenced by the nature of the reigning epidemic. Acta et Observata Medica, 94.

Rheumatism is seldom fatal; but it is often a disease of peculiar obstinacy, and, in a more or less acute form, sometimes continues for many months. In these cases the phlogistic diathesis of the vessels continues, while the strength in general decays, and prevents the most salutary discharge by bleeding. The pain continues with a violence somewhat remitted, but with severe occasional exacerbations; the limb wastes; the strength, and the colour of the countenance, decline; the face sinks, and the patient often continues in this exhausted state for many months, sometimes for years. But to the disease in this chronic form we shall return, and now only add, that rheumatic patients are subject to relapses; and, as in other inflammations, the vessels, by repeated increased action, become more irritable, and more subject to spasmodic contraction.

The experience of many ages has established the utility of BLEEDING in acute rheumatism; and blood must be drawn from a large orifice, in a considerable quantity, frequently repeated. The severity of this evacuation, described under the article PLEURITIS, q. v. is not too great for the present complaint, if the patient be robust and strong. The usual guide is a more soft and slow pulse, a diminished heat, and a moist skin. We are always cautioned, however, that if we carry this evacuation too far, we may lessen the strength, and induce the disease in its more chronic form. There is probably a foundation for this caution, since, if we diminish the vis vitæ so far as to prevent the evacuation, next in point of advantage, that by the skin, we have no means of taking off the phlogistic diathesis but a repetition of the bleeding, which the strength will not bear. In general, then, when the hardness of the pulse remits, the bleedings should be stopped, and we must apply to other means of perfecting the cure.

Topical bleedings would appear highly advantageous; but we gain little from them while there is any remaining fever. The disease continues, and the affection of the limb is only a symptom; for by bleeding topically in an early stage of rheumatism we often occasion a metastasis to some other part. Another reason which seems to render topical bleeding less advantageous is, that the pain is often felt in the joint when the disease is in the whole muscle, for the reasons already assigned, so that the remedy is only in appearance topical.

Though *cathartics* generally diminish phlogistic diathesis considerably, yet they do not greatly relieve rheumatic pains; and the reason will be obvious, if our idea be correct, that rheumatism is an inflammation of the arterial system. Purging is also highly inconvenient, from the trouble and pain of moving the body; yet, on the whole, we have thought that interposing occasionally active laxatives, which contain a considerable proportion of calomel, have been useful in shortening the disease, though they have not greatly mitigated the pain. The neutral salts have been sometimes preferred; but they have not appeared to us so effectual.

The chief remedy are the *diaphoretics*, and the advantages of this evacuation must be obvious on the principles laid down. When the heat and fever are considerable, the more cooling kinds, as nitre, saline draughts, with camphor, are preferable. But the crude sal ammoniac, with the acetated ammonia, may be soon employed, and with each class the antimonials may be advantageously combined. The chief remedy we owe, however, to the sagacity or the lucky combination of Dr. Dover, his sudorific sweating powder, viz. the pulvis ipecacuanhæ compositus of the last London Pharmacopœia. The principle of this combination we have already explained (see DIAPHORETICA); and scarcely inferior to this is the sweating powder of Ward, which contains the white hellebore instead of the ipecacuanha. We have sometimes thought it superior. These remedies relax the skin so completely that we can often venture to add some stimulant, as the acetated ammonia; sometimes, as recommended by Dr. Hamilton and Dr. Riedly, calomel; and, in general, infusions of our own aromatic vegetables. It is particularly remarked by Dr. Cullen, though unaccountably overlooked by some late practitioners of eminence, that the sweating, when once began, should not be intermitted, and when it has relieved, should be suffered very gradually to decline. The warm bath is an inconvenient remedy, as it requires painful muscular exertion: it would be otherwise more frequently used in this complaint, as with moderate heat it is well adapted to its relief. The vapour bath, from its superior temperature, is better adapted to the chronic form.

The other diaphoretics of a gentler power, which require a longer continuance, are chiefly adapted to the disease, when its acute form is in some degree conquered. Of this kind are the mezereon, the seneka, the bardana, and guaiacum. In the period of the disease just mentioned each is sometimes useful, and in general some ammoniacal salt, or the ammonia itself, may be combined with the decoctions of either. The volatile tincture of guaiacum, if employed too early, has been sometimes injurious.

Narcotics have been often used to relieve pain; but opium alone, unless directed to the skin, by relaxing sudorifics, seems injurious. This circumstance has been the chief support of the opinion, that opium stimulates; but in this disease a very essential discharge is the perspiration, and if this be not produced

every medicine appears injurious. Other narcotics which have been employed we may mention in this place, though they have chiefly been employed in chronic rheumatism, viz. the rhododendron, which seems to combine a sudorific power; hyoscyamus, dulcamara, hemlock, and aconite. Each seems occasionally to lessen pain and procure sleep.

We have not considered *mercurials* under the head of diaphoretics; because it would appear as if we wished to bend every thing to a system. We, therefore, have preferred selecting the facts. The practice of Dr. Hamilton, who found calomel with opium useful (Edinburgh Medical Commentaries), we have already mentioned; and by different authors, who are, however, chiefly army physicians, the sublimate, mercurial friction, and calomel, have been recommended. We suspect, however, that these medicines have been chiefly useful when the inflammatory stage has, at least in part, disappeared. We have remarked, that we thought the purgatives which contained calomel were more effectual than others; but dare not say that any part of the relief was owing to the mercurial.

The remissions, and in some cases the intermissions, of this disease, have suggested the use of the *bark;* and this medicine has been highly commended. It has not been our fortune to have seen it beneficial; but we cannot deny our confidence to the assertions of practitioners of the highest respectability. The utility of *arnica*, recommended in the first volume of the Berlin Transactions, may rest on a similar principle.

Of the *external remedies* we have already mentioned topical bleedings, and the next in point of utility are *blisters*. These are of little service while the general inflammatory state continues; and we have found, that to render them useful in acute rheumatism, bleeding, in a quantity proportioned to the strength, should be premised. We had adopted the practice of bleeding previous to the fresh application of each blister, for the blisters must be frequently repeated, long before we entertained the ideas now suggested respecting the nature of the disease. All external applications, if employed too early, remove the pain from the part then affected, but drive it to another limb.

The tartar emetic ointment is by some practitioners employed as an external stimulus, since it is supposed to produce a more permanent effect. This may undoubtedly be the case; but the little foul ulcers which it produces soon impede its use, and other stimulants cannot afterwards be employed. Baldinger has recommended ginger, over which alcohol has been burnt, and others, the spirit of turpentine, joined with ammonia. The actual cautery has been applied, and the burning with moxa is no uncommon remedy in the east. Blisters, however, and topical bleeding, are almost the only external remedies employed in the acute stage.

Rheumatismus chronicus, *arthrodynia*. The gradual change from the acute to the chronic state of this disease admits not of any accurate limits, except perhaps the state of fever. Yet in rheumatisms strictly chronic there are evening exacerbations, which seem to destroy this distinction. In general, however, the fever is slight and almost imperceptible; the limb cold, almost immoveable, dry, or covered only with a cold clammy sweat; the pain acute, especially on changes of weather, or when heat is withdrawn; and the whole system highly debilitated. This form of the disease often continues for a long time, with little variation; nor does it sometimes terminate, except with life. The lumbago and the sciatica are frequently of this kind, and the knee is very often the part affected.

There can be little doubt of the state of the parts in this form of the disease. It is evident that the circulation is carried on imperfectly, from a debilitated state of the vessels, which occasions the frequent recurrence of spasm, especially when external heat, or internal stimuli, do not contribute to assist their action. As this atony affects the arteries exclusively, it must evidently arise from the previous inflammation; but if this inflammation was not of a peculiar kind, we should find a similar consequence after other phlegmasiæ. It is highly probable, therefore, that the disease is in the coats of the arteries themselves.

Conformably to this idea practitioners have found every internal and external stimulus of the highest service. Cantharides, the mineral acids, camphor, ammonia, the essential oils, particularly those of turpentine, cajeput and amber, flour of mustard, and the juice of horseradish, have been used singly, or combined in various forms, often with opium. Electricity and galvanism have had their advocates, though they have of late been seldom employed. In a more solid form the cummin seeds, the mustard, and ammonia, have been made into a cataplasm, with black soap, or into a plaster with euphorbium. All these are useful stimulants, and often successful.

Warm bathing, and warm pumping, are, however, remedies of greater utility; and the waters of Bath, combining probably a stimulant power, are often peculiarly useful. The application of sea-salt or brine is often serviceable, and the tepid baths of our sea-coasts have in many instances cured, when employed from about 86° to 92°. When the system is not greatly debilitated, even sea-bathing is used with success; but the reaction in the part affected must be generally assisted by friction, and the most stimulating liniments. Issues and setons near the part have been proposed, but have seldom been found useful, as they are chiefly adapted to inflammation deeply seated.

The internal medicines are the more active stimulants, and those tonics which determine to the surface. The internal stimulants which have been most successful are the arum, the seneka, the mezereon, the guaiacum, and the turpentine. The arum, in the form of a conserve, with an equal part of sugar, is often highly useful. The seneka and mezereon are exhibited in decoction, often with mercurials. The guaiacum in this form is inert, and the gum is employed with more success. The greater number of medicines has yielded, however, to Dr. Dawson's remedy, the ammoniated tincture of guaiacum, given in a dose of two or three drams, sometimes extending to half an ounce: it is much more effectual when combined with opium, or a small portion of Dover's powder. We have tried various combinations of ammonia, gum guaiacum, and opium, in a solid form, but by no means with equal success.

A very general and active stimulus is the etherial oil of turpentine; and, according to the method recommended by Cheyne, if incorporated by melting in a

gentle heat, with an equal part of honey, a much larger dose can be taken without offending the stomach. It is in every case of chronic rheumatism a valuable medicine.

Another stimulus of considerable utility is the oleum jecoris aselli, the oil of the liver of the cod-fish, recommended by Dr. Percival. It is in reality the *train oil* of the shops, and we have found it to relieve when other medicines have failed. It must be long continued, and fortunately the taste soon becomes familiar. From the sensible effects of the liver of the skate (see RACHITIS), we should expect some benefit from it in chronic rheumatism.

The tonics which determine to the surface are the metallic, of which the principal is mercury; a medicine more successful when combined with antimony. Calomel every night, in the dose of a grain, was, if we recollect rightly, recommended by Dr. Fothergill. Other authors have employed the muriated mercury; bur the Plummer's pill, in its original form, assisted by the decoction of mezereon, sometimes by the more complicated formula, the Lisbon diet drink, we have found more successful.

What share in the success the sarsaparilla may have is uncertain. One violent case of chronic rheumatism is said to have been cured by the sarsa in substance, taken in the quantity of a scruple two or three times a-day. The relief, however, was found at the end of a summer, after two winters of peculiar mildness; a change of climate is a well-known remedy for this disease. The seasons in this case meliorated our northern region.

The only other metal which has been employed is arsenic. From the few trials made by Dr. Bardsley it seemed to be highly useful. We have not been equally successful; but, in the infancy of its use, it is probable that the cases, to which it is adapted, have not been sufficiently distinguished.

See Cullen's First Lines; Smith in the Medical Communications, vol. ii.; Essay on the Nature and Cause of Rheumatism, 8vo. London, 1776; Heister de Rheumatismo; Lancisi de Nativis & Adventitiis Cœli Romani Qualitatibus, ad Calcem; Fordyce's Fragments; Demiani Adversaria; Ploucquet de Myositide & Neuritide; Sydenhami Opera, pp. 344 and 732, &c.; Saalman Descriptio Rheumatismi Acuti; Theden N. Bemarkunden, vol. i. p. 130; Stoll Ratio Medendi, p. 3 and 5; Bardsley's Reports.

RHICNO'SIS, (from ῥικνος, *rugged*). LEANNESS and WRINKLES.

RHI'GOS, (from ῥιγεω, *to shake with cold*). RIGOR; the slight convulsive tremors, most commonly following the cold fit of fevers. Dr. Cullen considers them as the first marks of reaction; but they appeared to us (see FEBRIS) rather as the effects of debility. They are not confined to fever; but sometimes arise from any disgusting object, and in some persons from the introduction of the catheter into the urethra. Bellini seems to confine it to diseases of the head, and Bonetus thinks it peculiar to inflammations of the uterus, pleura, or liver. In general, when heat does not follow, it seems a fatal symptom, and in the worst fevers the cold is often fatal without producing rigor. See Boneti Sepulchretum, lib. i. sect. 14. obs. 16. Hippocrates περι νασων; Galenus de Tremore, &c.; Opera, tom. iii.; Baglivi Praxis Medica, i. 9.

Rigor sometimes signifies an inflexible hardness and tension of the muscles; but the more proper appellation is *rigiditas*. See HORROR.

RHO'CAS. See EPIPHORA.

RHO'CHMOS. See RHENCHOS.

RHODI'NA RADIX, and RHO'DIUM LIGNUM, (from ῥοδον, *a rose*). See ASPALATHUS.

RHODODE'NDRON, vel RHODODA'PHNE, (from ῥοδον, *a rose*, and δενδρον, *a tree*; or δαφνη, *the laurel*); for its flowers resemble the rose, and its leaves the bay. See NERION.

RHODODENDRON CHRYSANTHEMUM. YELLOW-FLOWERED RHODODENDRON, DWARF ROSE-BAY, *rhododendron chrysanthum* Wildenow, vol. ii. p. 605, has been recommended in chronic rheumatisms, painful affections of the joints and bones, particularly venereal pains: it is now very generally employed in various parts of Europe, though seldom in Britain. The plant is a native of Siberia, growing in mountainous situations, and flowering in June and July. Dr. Koelpin, of Alten-stetin, used an infusion of it in water, kept twenty-four hours in nearly a boiling heat, in the proportion of two drams of the leaves and tops of the plants to ten ounces of water. It was sometimes made of double this strength, and the dose was two ounces, to be repeated after a few hours, and continued as required. Dr. Home found it an astringent, and powerfully sedative; he directs it in infusion, from half a dram to three drams for a dose. When taken internally it produces, according to Koelpin, a feverish heat, intoxication, sometimes a stupor, with a singular pricking sensation in the limbs, or other parts of the body: the intoxication leaves neither headach nor nausea. During the heat, the patient complains of intense thirst; and drinking cold water is followed by a violent but salutary vomiting, especially in complaints of the bowels; and a copious sweat on the parts affected with rheumatism or gout. In some instances the pains grow worse at first; but this increase of disease is soon followed by a remarkable relief: the pulse is rendered weaker and slower, and in venereal rheumatism its effects are very considerable. The infusion at first often produces heat and constriction in the fauces; a proof of some little acrimony: but this effect speedily disappears. In robust habits it operates quickly, and with a degree of violence; in the infirm and feeble more slowly, so that the dose should not be hastily increased. It sometimes proves fatal, and Morgagni has recorded the appearances on dissection of a woman who was killed by it; Ep. lix. §. 12 and 14, though probably this plant was the *nerium oleander* Lin. Sp. Pl. 305, sometimes called *rhododendron*. Another species of this genus, the *r. ferrugineum* Lin. Sp. Pl. 562, has similar powers.

RHOMBOI'DES MU'SCULUS, (from ῥομβος, *a square figure*, and ειδος, *form*), rises from the ligamentum colli, the spinal processes of the third, fourth, fifth, sixth, and seventh cervical vertebræ; and the first, second, third, and fourth dorsal. It is also attached below to some of the ribs, runs beneath the latissimus dorsi, and is inserted into the whole length of the basis of the scapula to bring it upwards and backwards. The rhomboides is sometimes divided into the major

and minor: the minor is then above, and the major below.

RHOPA'LOSIS, (from ῥόπαλον, *a club*, probably from the increased size of each hair). See PLICA POLONICA.

RHUS, (from ῥέω, *to flow*, because it checks fluxes), *byrsodepsicon*, *rhus coriaria* Lin. Sp. Pl 379, COMMON SUMACH, is a shrub, with oval, pointed, serrated leaves, and clusters of yellowish or greenish flowers, each of which is followed by a small, red, flattish berry, including a roundish reddish-brown seed. It is a native of the south of Europe, and cultivated in our gardens. The berries have an acid, austere taste, are cooling and restringent. The leaves and young twigs are powerfully astringent; but it is chiefly used by dyers and tanners, though recommended by foreign authors in hæmorrhages and mucous discharges. The *r. typhinum* is similar in its virtues. See Tournefort's Materia Medica; Neumnan's Chemical Works.

RHUS SYLVESTRE. See MYRTUS BRABANTICA.

RHUS VERNIX, Lin. Sp. Pl. 380, is the poison-wood tree, whose juices are so acrid as to blister the hands of those who gather them. Internally, in infusion or extract they seem less deleterious; as Fresnoi, a French physician, took twelve of the petioles (for the leaves are pinnated) in infusion, which greatly increased the urine and perspiration. He was from thence led to use this infusion in herpes and palsy, which, in his opinion, were cured by it. The leaves are in their greatest vigour in June, and thirty-two pounds of water, distilled from four pounds of the leaves, yielded a fluid somewhat odorous and highly pungent. Each pound of the leaves yields about half an ounce of extract, highly successful in our author's hands in the cure of pertussis. Half a grain dissolved in syrup was a sufficient dose.

RHY'AS or RHŒ'AS, (from ῥέω, *to flow*). The existence of this disease has been doubted; but Galen describes it as an affection of the eye, diametrically opposite to *encanthis*, consisting of a too great diminution of the lachrymal caruncle. Riverius allows the cause of it to be a consuming, exsiccating, or corrosive matter, succeeding or accompanying a fistula lachrymalis. Eyes thus affected are denominated by Ætius, ῥυαδης, vel ῥυαδης οφθαλμος, *Fasius*.

RHYSSE'META, (from ῥυσσω, *to wrinkle*). A WRINKLED FACE.

RI'BES NI'GRUM, Lin. Sp. Pl. 291. BLACK CURRANTS seem to possess a slightly sedative power, and are used in sore throats. They are said also to be diuretic. The leaves of all the currants are narcotic, resembling peach leaves.

RI'BES RU'BRUM, (from *raib*, *Arab.* or *ribah*, *Hebrew*), *grossularia non spinosa*, *ribes rubrum* Lin. Sp. Pl. 290. RED CURRANT. Currants in general have a cool, acidulous, sweet taste, agreeable both to the palate and the stomach; resembling the other subacid fruits in their medicinal qualities. They may be used with considerable advantage to allay thirst in febrile complaints; lessen the increased secretion of bile; to correct a putrid, or scorbutic state of fluids. Hoffmann and Boerhaave had great confidence in the efficacy of these fruits in obstinate visceral obstructions. The white currant tree is merely a variety of the red; the fruit therefore possesses similar properties.

RI'CÆ, ῥικος. A veil which covered the heads of the Roman women during the time of sacrifice; hence *rica, the kerchief*. The great kerchief, called by the French *le grand couvre chef*, is used after trepanning. It is made of a square cloth, and, when dexterously applied, confines strictly the dressings. By observation and experience only can a dexterity in the application be obtained. *Couvre chef en triangle*, is a square cloth, folded in the form of a triangle: the middle of the longest side is applied to the forehead, the two ends tied behind the head, and the angle, which falls behind the head, secured to the confined ends of this kerchief. Its use, in general, is to fix the dressings on the face and head.

RICI'NI O'LEUM, (from *ricinus, the spurge seed*). See CATAPUTIA.

RICI'NUS, (*quasi* ῥιν κυνος, *a dog's nose*, because they stick to dog's noses). The TICK or TYKE, a reptile which infests dogs. The name also of the spurge-laurel, whose seeds resemble the tick.

RICI'NUS AMERICA'NUS MA'JOR. See CATAPUTIA MINOR.

RICI'NUS MI'NOR. See CASSADA.

RICINOI'DES, (from *ricinus*, and ειδος, *likeness*). *Cataputia minor*. See HELIOTROPIUM TRICOCCUM.

RI'GOR. See RHIGOS.

RIG'OR NERVO'SUS. See TETANUS.

RI'MA. A CHINK, applied in anatomy to any longitudinal aperture.

RIM'ULA. A diminutive of *rima*.

RINÆ'US, (from ῥιν, *the nose*). See NASALIS.

RING-WORM. A species of herpes, or rather of lepra, in which the eruptions are annular.

RI'SAGON. See CASSUMUNAR.

RIST. See CIST.

RISUS, (*à ridendo*). LAUGHTER scarcely requires a definition. It is occasioned by short, imperfect, convulsive expirations after a full inspiration, with a contraction of the glottis, which produces a sound in men resembling those of o and a, and in women i and e. The lesser degree, a *smile*, which the verb chiefly imports, is unconnected with respiration, and consists only in the contraction of the buccinator and zygomatic muscles, while the cheeks are slightly raised, and the eyes in some measure closed. The former is the expression of boisterous mirth, in minds untutored and unregulated; the latter of complacency and pleasure.

It is singular that laughter generally proceeds from a mental cause, in most instances without any corporeal influence, and sometimes from an irritation of the nerves, wholly independent of mirth. Of the former kind is the loud laugh in hysteria; and the convulsive laugh in hysteric paroxysms, sometimes induced by the most distressing events: of the second tickling is the cause, which in excess has been used as a kind of torture to induce confession. The causes of laughter are obscure. Pleasure produces cheerfulness and complacency; unexpected happiness more frequently draws tears; and the loud repeated laugh of the bacchanal, or of the spectator of the comic humour of Munden, if analysed, will be found to arise from a source very different from pleasure. One cause of laughter is a combination of incongruous images. Chrysippus is said to have died from laughing at the idea of an ass being invited to a banquet. A similar fate, according to Valerius Maximus, attended Philemon; and we are told of a pope who died in the same way, from seeing the

tiara placed on the head of a monkey. A question which has perplexed both moralists and metaphysicians is the cause of that laughter which ensues from seeing another person fall. It is often irresistible, though considerable injury be apprehended. The maxim of Rochefoucault has been quoted on this occasion, that there is something in the misfortunes of our best friends which does not displease us; but we would, for the honour of humanity, rather refer it to a sudden agitation. We know a gentleman who on such an accident to himself, and he has often fallen from his horse, is seized with violent laughter; and Binninger has remarked, that a fall on the sinciput is generally attended by this convulsive expiration. The conclusion, therefore, must be, that it is a tremulous action of the diaphragm, not necessarily connected with mirth, but rather with surprise. The well-regulated mind, accustomed, *nil admirari*, is, therefore, seldom betrayed into it; and immoderate, frequent laughing is usually the effect of mental imbecility. Such was the decision of lord Chesterfield; and whatever ridicule may be thrown on his system of education, it must be admitted that no one was more intimately acquainted with all the intricacies of the human mind.

Laughter is peculiar to the human race. It has observed in a child just born (Ephemerides Naturæ Curiosorum); and Schelhamner remarks of one of the wild boys found in woods, that he could laugh, but not speak. We have observed dogs and monkeys grin, when pleased, apparently from imitation. The more immediate causes of laughter, or rather the connection between it and surprise, or the titillation of distant nerves, is wholly inexplicable.

Laughter is said to be useful from the effect of the successions in expediting the passage of the blood through the system of the vena portarum. Laughers are proverbially fat, and generally long-lived; but weak minds are commonly exempt from care. The injuries from sudden and immoderate laughter are numerous. The circulation through the lungs is impeded, and the blood accumulated in the head: the records of medicine are filled with narratives of ruptured vessels in the head and lungs from laughing, with some more consolatory instances of a fortunate rupture of an abscess. Castellus mentions a case where a thorn was thrown up from the throat in consequence of immoderate laughter; and Erasmus was saved from death by a fit of laughter, which burst an abscess.

The *risus sardonicus* is rather a smile, or, more properly, a grin, than real laughter. Even Hippocrates quotes, as an old observation, that it arises from a wound in the diaphragm, which modern authors have confirmed from their own experience. (Joubert du Ris apud Halleri Bibliothecam, ii. 135). Franck records it as a symptom in a bilious peripneumony, connected with rheumatism. The name was derived from the herb *sardoa*, to which it was attributed. We cannot now exactly ascertain what this plant is; but it had the leaves of parsley, and was sweet, two circumstances which meet in the œnanthe crocata, a powerful narcotic. It is the sardonic grin, which Van Helmont tells us is so unfavourable a symptom in wounds of the nerves.

The risus sardonicus has also been owing to swallowing the root of the ranunculus palustris (Ephemerides Naturæ Curiosorum, Dec. iii. an. 2, obs. 87); and in the same collection of a former year, we find an instance where it was induced by terror, and was a fatal symptom in a puerperal case. Saffron has been accused as a cause by Sennertus, apparently with little reason.

See Lyserus de Risu; Alberti de Risus Commodo et Incommodo; Platner de Risu a Splene; Halleri Physiologia; Plinii Historia, lib. xi. 629; Schelhammer de Affectibus Animi.

RIVINIANÆ GLANDULÆ. See SUBLINGUALES GLANDULÆ.

ROASTING. A culinary and chemical process. In the latter, metals are exposed to an open fire, to dissipate their inflammable or volatile parts. In the former the meat is rendered more moist, perhaps more soluble; but, as we have observed, the empyreuma communicated to the fat and skin renders roasted meat often inconvenient in weak stomachs.

ROB, (from the Arabic *rob, dense*); *robub*; a galenical form, in which fruits and leaves are preserved by sugar and evaporation, often by the latter alone. Acids, however, suffer some decomposition, and are not afterwards equally miscible with water, or equally salutary in scurvy. See EXTRACTIO and SAPA.

ROBORA'NTIA, (from *roboro, to strengthen*). See CORROBORANTIA, TONICA, and ASTRINGENTIA.

ROCCELLA; *lichen rocella* Lin. Sp. Pl. 1622; a blue dye, but, like other lichens, used in hectics. From its allaying coughs, and particularly hysteric coughs, it seems to possess some narcotic power.

RODA'TIO, (from *rodo*). See TARSUS.

RO'NCHUS. See RENCHOS.

RORE'LLA, RO'RIDA, and RO'SA SOLIS. See ROS SOLIS.

RORISMARI'NUM SYLVE'STRE. See LEDUM PALUSTRE.

RORISMARI'NUS. See ROSMARINUS.

ROS CALABRI'NUS. See MANNA.

RO'SA, (from ῥοσον, or ῥοδον, *the rose*). White roses are the weakest; so that when the damask, the *rosa pallida*, or *centifolia* Lin. can be procured in sufficient quantities, they only are used. Their odour is imparted to water and to spirit, but chiefly to the latter; and they lose little by drying, or keeping, if well managed. On distilling large quantities, a small portion of a fragrant butyraceous oil, of a yellowish colour, is obtained, which concretes in a slight degree of cold: both the water and the oil are chiefly used as perfumes.

The red rose, *rosa centifolia* Lin. Sp. Pl. 704, has but little of the fine flavour of the pale sort: to the taste the leaves are bitterish and somewhat astringent. The astringency is the greatest before the flower opens, and this quality is improved by hasty drying in a gentle heat; but by slow drying both the colour and astringency are impaired. Water they tinge with a deep red colour, and spirit with a pale one. The extract from a watery infusion is austere, bitter, and subsaline; that from spirit in a greater degree. The fixed matter of the petals is slightly laxative, and the syrup is sometimes given for this puspose to children. Former dispensatories had a syrupus rosarum solutivus. (See Lewis's Materia Medica.) The London College have directed several preparations.

Aqua rosæ.—Take of the fresh petals of damask roses, the white heels being cut off, six pounds; water sufficient to prevent an empyreuma: draw off one gallon.

Conservæ rosæ rubræ.—Red roses are to be gathered before the petals are unfolded, the heels cut off, and the leaves treated in the same manner as the wormwood. (See ABSINTHII MARITIMI CONSERVA.) The virtue of the roses is supposed to be found in this composition, and probably their best effect will be produced, when given in substance, and in considerable quantity. In phthisis and hæmoptoe they have been employed, sometimes with success, especially when joined with a diet of milk and farinacea, and gentle exercise in open air. At most, two parts of sugar to one of roses would be sufficient, and afford a better medicine than the larger proportion

A cataplasm is made of the conserve, and employed in the latter stages of ophthalmia; one dram of alum finely powdered is mixed with two ounces of conserve.

Mel rosæ.—Take the petals of the red rose not yet unfolded, the heels being taken off, first dried, four ounces; boiling distilled water, three pints; clarified honey, five pounds; macerate the petals in the water for six hours; afterwards with the strained liquor mix the honey, and boil the mixture to the consistence of a syrup.

Syrupus rosæ.—Take of the petals of the damask rose dried, seven ounces; purified sugar, six pounds; distilled water boiling, four pints; macerate the petals in the water for twelve hours, and strain: evaporate the strained liquor to two pints and a half, and add the sugar to form the syrup. For infants, the dose, as an aperient, is from half an ounce to an ounce; though its purgative effect is very inconsiderable.

Infusum rosæ.—Take the petals of the red rose in bud, the heels taken off, half an ounce; diluted vitriolic acid, three drams by weight; boiling distilled water, two pints and a half; purified sugar, one ounce and a half. Pour the water first on the petals in a glass vessel, then add the acid, and macerate them for half an hour; strain the liquor cold, and add the sugar. Pharmacopeia Londinensis 1788.

This is an elegant preparation, but its virtue consists more in the vitriolic acid than the roses. See Cullen's Materia Medica.

The *attar*, or *essential oil of roses*, so highly esteemed as a perfume, is prepared in India. Forty pounds of roses, with their calyces, are put into a still with sixty pounds of water After the ingredients have been well mixed, a gentle fire is lighted, and when fumes begin to arise, the cap and pipe are properly luted on. When the impregnated water begins to come over, the fire is lessened by degrees, and the distillation continued four or five hours, till 30℔. of fluid is come over. This water is to be poured again upon 40℔. of roses, and fifteen or twenty pounds more are to be drawn off. It is then to be poured into pans of earthen-ware, or tinned metal, and exposed to the fresh air for the night. In the morning the attar will be found congealed, and floating upon the surface of the water. Its smell exactly resembles that of roses. It is only slightly pungent; but has been recommended as a cordial and analeptic.

The roses of India do not appear richer in oil than those of Europe. From two to three drams of oil are procured from one hundred weight; while Tachenius procured half an ounce of oil from that quantity, Hamberger one ounce, and Hoffman two. It is adulterated sometimes with the oil of sandal wood; but this oil does not congeal in common cold, and its peculiar smell predominates, sometimes with that of a sweet grass. The latter imparts a green colour, and the oil does not easily congeal in a moderate temperature. The colour, however, is no criterion of its genuineness, since the real attar differs greatly in this respect. Colonel Polier in the Asiatic Researches, vol. i.

RO'SA CANI'NA et SYLVE'STRIS. See CYNOSBATOS.

ROSA'CEA, (from *rosa, a rose*). ROSEA. See GUTTA ROSACEA.

ROSA'TUM. See DROSATUM.

RO'SÆ ODO'RÆ LIGNUM. See ASPALATHUS.

ROSEOLA, of Willan. See GUTTA ROSEA.

ROSMARI'NUS, RORISMARI'NUS, (*folia albescentia quasi rore, ut in maritimis, inspersa*); *libanotis coronaria; dendrolibanus*; COMMON ROSEMARY; *rosmarinus officinalis* Lin. Sp. Pl. 1433; is a large shrubby plant, with long, narrow, stiff leaves, set in pairs, of a dark green colour above, and hoary beneath, with flowers of a pale blueish colour. It is a native of the southern parts of Europe, where it grows wild in dry gravelly ground; common in our gardens, where it smells stronger in proportion as the soil is dry and gravelly.

Rosemary hath a warm, pungent, aromatic, bitter taste, and a fragrant smell, approaching to that of lavender, joined with a camphorated odour: the leaves and tender tops are the strongest, and next to these the cup and the flowers. The flowers are the weakest, but most pleasant; and whatever virtue has been attributed to them resides in the cup. This plant is said to stimulate and strengthen the nervous system, and is recommended for nervous headachs, deafness, vertigo, palsy, hysteria, and dyspepsia, yet its active power scarcely extends beyond the stomach, which it gently stimulates; though recommended by Bergius as an emmenagogue, and chiefly useful in chlorosis. For distillation the calyces and leaves are preferable, partially dried.

The leaves and tops yield their fragrance, in a great degree, to rectified spirit, leaving in the extract the greatest share of both their flavour and pungency, with some portion of the aroma.

The active matter of the calyces and flowers is more volatile than that of the leaves, the greatest part of it rising with spirit.

Spiritus rorismarini, or *Hungary water.*—Take of the fresh tops of rosemary, one pound and a half: proof spirit of wine, one gallon. Distil in a water bath, five pints. (Pharm. Lond. 1788.) This with the essential oil are the only preparations now kept; but the rosemary is an ingredient in compound spirit of lavender, and some other preparations. A conserve formed of its flowers is now expunged both from the London and Edinburgh Pharmacopœias.

To make the Hungary water in perfection, the spirit must be very pure, the leaves at their full growth, gathered without bruising. If the flowers are suspended in the retort, and a gentle heat applied just sufficient to raise the spirit, the vapour lightly percolating through them will, it is said, add to the fragrance.

Aqueous liquors extract some portion of the virtues

of rosemary by infusion, which pass over in distillation. With the water a considerable quantity of light, thin, green, or yellowish essential oil rises.

See Tournefort's, Lewis's, and Cullen's Materia Medica; and Neumann's Chemistry.

ROSMARI'NUM STŒ'CHADIS FA'CIE. See POLIUM CRETICUM.

ROS SO'LIS, *rosa solis, rorella, sponsa solis, rorida;* RED-ROT; SUN-DEW; *drosera rotundifolia* Lin. Sp. Pl. 402; is a small low plant, with a little fibrous root, from which spring small, round, hollowish leaves, on foot-stalks of about an inch long, covered with short red hairs, which make the whole leaf appear red. It grows in boggy ground, and flowers in June and July. It is injurious to cattle if eaten, and very caustic; but has been commended as a cordial. See Raii Historia.

ROSSALIA. See SCARLATINA.

ROSTE'LLUM, (a dim. of *rostrum.*) A little beak. See CORCULUM.

RO'STRUM, (from *rodo,* because birds tear their food with it.) A BEAK.

RO'STRUM LEPORI'NUM. The piece of flesh which hangs betwixt the division of the hare-lip, resembling a beak. See LABIA LEPORINA.

ROTA'TOR MI'NOR, MA'JOR, and NA'TIS, (from *roto, to turn*). See FEMORIS OS.

ROTTEN STONE. A partly decomposed granite from which the felt spar has been separated; resembling the petuntze of the Chinese, and used in making porcelain.

RO'TULA, (a dim. of *rota*). The PATELLA, q. v. In pharmacy a round lozenge.

ROTU'NDA LIGAME'NTA, (from *rota, a wheel*). The ROUND LIGAMENTS OF THE WOMB are two vascular ropes, composed of arteries and veins, lymphatics and nerves, arising from the fundus uteri, running under the duplicature of the broad ligaments to the rings of the abdominal muscles, and, passing under Poupart's ligament, are lost on the groin. They run in a contorted form, and are capable of being elongated. The nerves of these ligaments compressed in time of labour, between the uterus and abdominal muscles, may cause the pain felt in the inside of the thighs at that time.

ROTU'NDUS MU'SCULUS. See TERES MAJOR.

ROU'COU. See ACHIOTL, and ORLEANA.

ROUTROU'S SOLVENT. See ANTIMONY, vol. i. p. 136.

RUBE'DO, (from *ruber, red*). An uniform redness of the skin, seldom rising into pustules, or even papulæ. See GUTTA ROSACEA.

RUBEFACIENTIA, (from *rubrum facere, to redden*), are usually simple stimulants, and such as do not raise vesications. They resemble in their effect blisters, but their power is inferior and more transitory.

RUBE'OLA, (from the same). See MORBILLI, and RUBIA CYNANCHICA.

RUBE'OLA MONTA'NA OD'ORA. See ASPERULA.

RUBE'RCUM MA'CULIS, (from the same). See GUTTA ROSACEA.

RUBE'TA, (from its living among brambles). See BUFO.

RU'BIA, (from its red roots.) *Rubia tinctorum* Lin. Sp. Pl. 158 *β; erythrodanum; rubia major;* DYER'S MADDER, is a rough procumbent plant, with square jointed stalks, and five or six oblong pointed leaves, set in the form of a star at every joint; from the top arise greenish yellow flowers, followed by two black berries. The root is long, slender, juicy, red, both externally and internally, with a whitish woody pith in the middle. The plant is perennial, and cultivated in different parts of Europe for the use of dyers.

The roots are bitterish, somewhat austere, with very little smell, imparting to water a dark, to rectified spirit and distilled oils a bright, red colour, preserving in each the taste unchanged. Taken internally it renders the urine red and milky; and tinges the bones of animals fed with it, from its affinity, as already shown, to the serum, rather than the calcarious phosphat: the flesh and cartilages continue unaltered. From its supposed effect of tinging the earthy salt of which the bones consist, it was considered as a powerful aperient, and from its effects on the urine a diuretic. But it is neither; for it only tinges the serum. Its power as an emmenagogue is equally equivocal.

When first recommended, distrusting the author's accuracy, we gave it at the same time in a case of mœnorrhagia and amænorrhœa. The former complaint disappeared, the latter continued without any change. In fact, we believe it wholly useless. It has been given in dropsy, in jaundice, and in ecchymosis from bruises, in the dose of a scruple, or from this to half a dram.

It is also a name for the rubeola, a species of crosswort, and of horse-tail.

RU'BIA SYLVA'TICA LÆ'VIS; *gallium mollugo* Lin. Sp. Pl. 155; MOUNTAIN-BASTARD, or WILD-MADDER. Its virtues are at least equal to the rubia tinctorum.

RU'BIA CYNA'NCHICA; *rubeola cynanchica Lugdunensis; asperula; saxifraga; asperula cynanchica* Lin. Sp. Pl. 151; SQUINANCY-WORT, hath a black, thick, woody root, which runs deep into the earth, with many capillary fibrils divided into a multitude of heads, and shoots up in many smooth, slender, angulous stalks. At every joint are four short and broad leaves: the flowers are on the top of the stalks and branches, forming umbels of a red colour, in smell resembling the jasmine; and each flower is followed by two rough seeds, which when dry are of a yellow colour. It is found on chalky grounds, and said to be of use in quinsies; but at present neglected or forgotten.

RUBI'NUS VE'RUS, (from *ruber*). See CARBUNCULUS.

RU'BRICA FABRI'LIS, (from the same). See OCHRA.

RU'BUS, (from its red fruit). See DUMUS.

RU'BUS ALPI'NUS and PALU'STRIS HU'MILIS. See CHAMÆMORUS.

RU'BUS IDÆ'US, Lin. Sp. Pl. 706; *batinon, moron;* RASPBERRY, is a native of Britain, usually growing about woods and hedges, and in moist situations, producing its flowers in May and June. The raspberry is commonly cultivated in our gardens, and we find three varieties, the red, white, and smooth. The fruit is sweet tasted, accompanied with a peculiarly grateful flavour; and like other fruits it allays heat, quenches thirst, and promotes urine. A syrup is made of the juice in the common way.

RU'BUS VULGA'RIS; COMMON BRAMBLE; BLACK or DEW-BERRY BUSH; *rubus fruticosus* Lin. Sp. Pl. 707; *batos; chamæbatos;* grows wild in hedges and in woods. The berries have a faint taste, with a moderately agreeable flavour, and the leaves are slightly astringent. The flowers appear in July, and the fruit is ripe in August and September; but neither the bush nor its productions are employed in medicine.

RUCTATIO, RU'CTUS, (from *ructo, to belch*). A discharge of wind from the stomach; a symptom of dyspepsia.

It is usually attributed to flatulent food, and is often owing to a defective digestion; for we have remarked that the flatus, separated in the early stage of the digestive process, is again combined with the food, in the second period. We consequently find that whatever disturbs this function produces flatulence, and consequently eructation. This variety of the disease is best remedied by moderately warm stimulants, and rest after eating. If the cause be more violent, or the food of that kind which quickly hastens to putrefaction, the eructations show the peculiar nature of the contents of the stomach by acidity, or what are styled *nidorous eructations*, in taste resembling a rotten egg. The former are removed by absorbents joined with aromatics, and the latter most effectually by vegetable acids.

Eructation does not, however, always arise from the contents of the stomach. It is sometimes a convulsive action, and the wind discharged is only the effect of the relaxation of the previous contraction. It is thus a common symptom in hysteria, of a stomach weakened by over-distension, drinking spirits, &c. The disease is sometimes alarmingly violent, and we are told has in one or two instances induced appearances of hectic. (Commercium Norimbergense, 1743). It is singular to observe eructations attributed to the imagination; but we find this cause assigned, not only in a dissertation by Alberti, but in a tract of Muller de Morbo Motuum Habituali ex imaginatione.

The cure of this nervous eructation is generally attempted by tonics: but more immediate relief is often necessary; and opiates, with the fetid gums, are for this purpose chiefly useful. The opium should not, however, be given in such a dose as to produce costiveness; or rather this state should be counteracted by eccoprotics, frequently interposed. The best tonic is the bark, to which the valerian is with advantage added; iron, and sometimes zinc, are used; and, from some late observations of Dr. Bardsley, there is reason to suspect that the oxide of bismuth may be beneficial. The oil of amber is recommended by Zacutus Lusitanus, and we find the mineral acids have been occasionally employed.

Borborygmi are produced by nearly the same causes, and may be relieved by the same remedies.

RU'FI PI'LULÆ; *pilulæ ex aloe cum myrrha.* Two parts of aloes are combined in this composition with one of myrrh, one of saffron, and a sufficient quantity of syrup. See ALOE.

RUM. A spirit distilled from the sugar-cane. It is oily, and has been supposed more useful on this account in catarrhs and coughs. The difference, however, between this and other spirits is inconsiderable. When new it is injurious, and has been said to produce the Poitou colic.

RU'MEX ACETO'SUS, PRATE'NSIS, SCUTA'TUS et HELVETICUS, *Linnæi*, (from *ramach, a spear*). See ACETOSA.

RU'MEX AQUA'TICUS, and HYDROLA'PATHUM. See LAPATHUM AQUATICUM.

RU'MEX ACU'TUS. See LAPATHUM ACUTUM.

RUMINATIO. This is a part of the process of digestion peculiar to some animals, chiefly belonging to the pecora of Linnæus, of which the cow is an example. The herbage received into its first stomach is there macerated, and, by an inverted motion of the œsophagus, is again brought into the mouth, to be more completely masticated. This operation is commonly called *chewing the cud.* Its object is apparently to combine the vegetable aliment more completely with the saliva. Rumination would be scarcely a part of our subject, if it did not occasionally occur in the human system, and an instance of it is recorded by Dr. Cullen. Meyer in 1792, Ackford in 1783, in dissertations published at Erlang and Halle respectively, have mentioned instances of it, and we find numerous descriptions of a similar operation in different foreign authors.

We have seen some approaches to it; but the rumination has then not been regular and constant. It has seemed owing to eructation, and the food has come into the mouth with the flatus. The remedies for RUCTUS, q. v. seem to be chiefly indicated, and will probably be successful.

Schurig Chylologia; Slare Philosophical Transactions, No. 193; Morgagni de Sedibus, xxix. 4; Boneti Sepulchretum, Lib iii. § v. 9. 10.

RUNCINA'TUS, (from *runcina, a saw*). SERRATED; leaves of plants with indented edges.

RUPICA'PRA, (from *rupes, a rock*, and *capra, a goat*). See CAPRA ALPINA.

RUPELLE'NSIS SAL, (from *Rupellum, Rochelle*, where it was first made); *sel de seignette, natron tartarizatum*, and ROCHELLE SALT, is a soluble tartar, made by combining twenty ounces of natron, by weight, with two pounds of crystals of tartar, in boiling distilled water, ten pints. The natron should be melted by heat, that it may shoot more easily into crystals. Half an ounce or six drams of this salt is a gentle cooling purge; but it should be mixed with a large proportion of water.

RUPTU'RA, (from *rumpo, to break*). A RUPTURE; the English term for HERNIA, q. v.; from the idea that the peritonæum was ruptured when the intestine protruded through the ring of the muscles. The word rupture is most properly applied to a cartilage, a ligament, or a tendon, when divided by violence.

RU'SCUS, (from the carnation colour of its berries), *bruscus, oxymyrrhine, myrtacantha, myacantha, scopa regia*, WILD MYRTLE, KNEE-HOLLY, BUTCHER'S BROOM; *ruscus aculeatus* Lin. Sp. Pl. 1474, is a low woody plant, with oblong, stiff, prickly leaves, joined immediately to the stalks: from the middle ribs of the leaves, on the upper side, issue small yellowish flowers, succeeded by red berries. The root is thick, knotty, furnished with long fibres matted together, of a pale brownish colour on the outside, and white within. It grows wild in woods and heaths, is perennial and evergreen; flowers in May, and its berries ripen in August. The root tastes sweet, and is slightly bitter; is aperient and diuretic, yielding its virtues to water and spirit; and on inspissating the tincture they remain in the ex-

tract. The young shoots are eaten instead of asparagus. See Miller's Botany.

RU'SCUS HIPPOGLO'SSUS, or LATIFOLIUS. See LAURUS ALEXANDRINA.

RUSH NUT. The root of the *cyperus esculentus* Lin. Sp. Pl. 67, which is mucilaginous and oily, resembling chestnuts.

RUSMA, (*nouret* of the Arabians), a depilatory generally used in the Turkish bagnios, supposed to be so precious as to be equal in value to its weight of gold. We learn, however, from Sonnini, that it is a very common preparation, consisting only of seven parts of lime, with three of orpiment. It must be laid on in a warm bagnio moistened with water, and the effect is almost immediate; but the hair grows again, and the operation must be repeated. Sonnini Voyage dans la Haute et Basse Egypte, vol. i. p. 303; Belon Observat. lib. cap. 33.

RU'TA, (from ῥυω, *to preserve*, because it preserves health). RUE. *Armala, besasa, peganon, ruta graveolens* Lin. Sp. Pl. 548, LARGE WILD-RUE, is a small shrubby plant, with thick blueish green leaves, divided into numerous roundish segments. On the tops of the branches rise yellowish flowers, followed each by a capsule, divided into four partitions full of small, blackish, rough seeds. It is cultivated in gardens, flowers in June, and is an evergreen.

Rue hath a strong unpleasant smell, a penetrating, pungent, bitter taste; if much handled, apt to inflame the skin, a property lessened by cultivation. It is commended as a powerful stimulant, aperient, antiseptic, and antispasmodic, useful in crudities, indigestion, in uterine obstructions, hysteric diseases, and to guard against infection. It is, however, only a warm antispasmodic, of no considerable powers. Externally, in a fomentation, it is thought to be discutient and antiseptic.

Its virtues are extracted by water and spirit of wine, but most perfectly by the latter. On inspissating the spirituous tincture, very little of its flavour rises with the menstruum, nearly all the active parts of the rue remaining in the extract, which is warmly and durably pungent, and in smell it is rather less unpleasant than the herb. This is the best preparation of rue: water, in distillation, carries over a part of its aroma. The principal virtues reside in the essential oil, which is not very volatile.

Distilled with water, a yellowish or brownish essential oil is obtained; and the remaining liquor may be inspissated into a warm, pungent, bitterish extract, inferior, however, to the spirituous.

Rue-leaves distilled for their essential oil should be fresh, and gathered when the flowers are ready to fall off: the seeds with their capsules should be added, and macerated previous to distillation.

Rue is directed in form of an extract, is a principal ingredient in the pulvis cum myrrhâ compositus, and often given in the form of tea. To it was attributed, by Hippocrates, the power of resisting the action of contagion, and other kinds of poisons; and in this view it is highly extolled by Boerhaave. For making the extract, see CHAMOMÆMELI EXTRACTUM.

See Tournefort's, Lewis's, and Cullen's Materia Medica; Neumann's Chemistry.

RU'TA CAPRA'RIA. See GALEGA.

RU'TA BA'GA. A coarse esculent beet, highly commended as the "*root of scarcity*;" but now deservedly neglected.

RU'TA MURARIA, *asplenium ruta muraria* Lin. Sp. Pl. 1541, WHITE MAIDEN-HAIR, is slightly astringent, and has been used in hectics, though at present neglected.

RU'TA SYLVE'STRIS. See HARMEL.

RUTADOSIS. A sinking of the cornea from a wound, old age, or death.

RUYSCHI'ANA TU'NICA, (from *Ruysch, the discoverer*). See CHOROIDES.

RY'SAGON. See CASSUMUNIAR.

RY'THMUS, (from ῥυθμος, *measure*); a term used by musicians with respect to time in music; but, since the era of Herophilus, employed to express the time, motion, or modulation of the pulse. See ARYTHMUS.

S.

SABADI'LLA. See CEVADILLA.

SABI'NA, *savina, brathu*, COMMON or BARREN SAVINE, *juniperus sabina* Lin. Sp. Pl. 1472, is an evergreen shrub, with short, narrow, prickly leaves. When old it bears blackish berries, like those of the juniper. It is a native of the southern parts of Europe, and is raised in our gardens. The leaves and tops have a strong disagreeable smell; a hot, bitter, and acrid taste; yielding a large proportion of their active matter to watery liquors, and the whole to rectified spirit. Distilled with water they afford much essential oil, which smells strongly, and tastes moderately of the savin: its dose is from two to four drops.

The decoction yields an extract which retains much of the pungency, warmth, and bitterness of the plant. On inspissating the spirituous tincture, the extract is a yellow, unctuous, or oily, bitterish, and pungent, mixed with a black, resinous, tenacious, subastringent, and less acrid substance.

Savin is styled a stimulant and aperient, useful in uterine obstructions, proceeding from a want of irritability in the vessels, heating and stimulating the whole system, and promoting the fluid secretions. It seems to be an efficacious emmenagogue, chiefly suited to relaxed and weak habits, but improper in plethoric ones. Of the powder the dose is from ℈i to. ʒ i. twice a-day; of the extract (see CHAMOMÆMELI EXTRACTUM) from ten to thirty grains.

Pulvis sabinæ compositus is composed of equal parts of sabine and ærugo, and employed as an escharotic for warts and excrescences, upon which it is to be sprinkled every day. The powdered savine alone, if fresh, is sufficiently active, when the epidermis is removed. The oil impregnates the urine with its smell, and contains the whole of its virtues. See Lewis's Materia Medica; and for the tinctura sabinæ composita, ELIXIR MYRRHÆ COMPOSITUM, under MYRRHA.

SA'BINA BACCI'FERA. See CEDRUS CUM FOLIIS CYPRI.

SABI'NA GOE'NSIS. See CEDRUS PHŒNICIA.

SABBURRA'TIO, (from *saburra, sand*). See ARENATIO.

SACCA'TA. See ŒNUS DIACHEOMENUS.

SA'CCHARUM, (from *sachar*, Arab.). SUGAR, μελι καλαμινον, Αλς Ινδικος, *sackohar, sakchari, saccharion, spodian, cantian*; and when unrefined, *cassonada*. It is procured from the *saccharum officinarum* Lin. Sp. Pl. 79, COMMON SUGAR-CANE.

Sugar seems to have been exclusively the production of India in the old, and of South America and the American islands in the new, world. It was apparently brought from India to Arabia, and from the Arabians we seem to have received the first description of the cane and its contents. If any part of the world, besides those mentioned, can claim the sugar-cane, it is the Canary islands. Sugar seems to have been first refined by the Venetians about the end of the eleventh century, but the process only practised in England about the middle of the sixteenth. The form in which sugar was previously imported from the east seems to have been that of sugar-candy. Actuarius, the last of the ancients, apparently first used sugar instead of honey in medicinal prescriptions.

The expressed juice of the sugar-cane is clarified with the addition of lime-water, and when boiled down to a thick consistence is removed from the fire, when the saccharine part concretes into a granular mass, the *saccharum rubrum*, leaving an unctuous liquor, called *molazzo*, or molasses; from its consistence commonly *treacle*. This red sugar is clarified in conical moulds, by spreading on the upper broad surface some moist clay, whose watery part gently percolating through the mass, carries with it a large portion of the treacle; and this is further refined by dissolving it in water, and mixing it with the whites of eggs, or bullock's blood, which, coagulating, carry down the remaining impurities. It is then covered with clay again in the mould, and becomes the *saccharum album*, Ph. Edinb. This process again repeated produces the *saccharum purissimum*, Ph. Lond. Brown sugar boiled to a proper consistence is placed in a hot room, to shoot into crystals upon sticks placed for the purpose, and it is then called *saccharum candidum* and *candum; canthum; saccharum cantion; sugar-candy*; or clarified, and the thinner parts evaporated, so that it forms a brittle substance, which, when made into small rolls, is called *barley-sugar*. The term sugar-candy is only with propriety applied to the crystalised white sugar, unless, with Salmasius, we derive the term from κάντιον, angular, or, with other authors, from *khand*, or *kend*, an eastern appellation of sugar: the latter is most probable.

Sugar, when pure and crystalised, is perfectly trans-

parent; when in a more confused granular form, opaque, with little shining crystals, soluble in water, and with the assistance of heat in alcohol. It melts into a yellow, tenacious liquid, and burns with a strong flame, exhaling an acid vapour. It is almost exclusively a vegetable production; and even the milk may be traced to a vegetable principle, except in animals wholly carnivorous. It is contained in almost every part of different vegetables, the flower, the leaves, the trunk, the root, and the fruit; but in each is confined to the period of maturity, and contaminated with mucilage and other vegetable principles. In the seeds of the cerealia it is formed by the addition of oxygen and of hydrogen from the decomposition of water.

Sugar is an oxide composed of carbon, hydrogen, and oxygen, of which 0.64 are oxygen, 0.28 hydrogen, and 0.08 only carbon. With an excess of oxygen it forms oxalic, or oxalic with malic acid, and with considerably less carbon, and a larger proportion of oxygen, it becomes the sugar of milk. When distilled without addition, it affords a pungent acid liquor of a yellow colour, called the pyromucous acid, which is also furnished by mucilage. Hydrocarbonate gas, mixed with carbonic acid, come over at the same time, and the residuum is a charcoal of peculiar purity. No other substance is contained in this hydrocarbonate oxide, so that it is peculiarly pure.

Mucilages are, we have seen, nearly allied to sugar, and we have pointed out one connecting substance whose farther analysis would greatly elucidate the chemical nature both of sugar and mucilage, viz. MANNA, q. v. Mucilages contain the same principles as sugar, with lime and azot. Sugar, in part deoxygenated, resembled mucilage in its chemical properties; but gum could not by any process of oxygenation become saccharine. In fact it required that its azote should be separated. Gum, treated with nitric acid, produces the malic and deposits the mucous acid. The former, by the farther addition of nitric acid, becomes the oxalic.

Vegetable farina may become sugar, by the addition of oxygen and water, the last of which is apparently decomposed. Sugar deoxygenated is no longer susceptible of the vinous fermentation, as it is well known to be before, and neither vegetable nor animal mucilages, alone, afford either vinous or acid fluids. The combination of the principles which form sugar sometimes take place a little unexpectedly, as in diabetic urine, and the acetite of lead. The latter, Neumann tells us, may become the subject of a vinous fermentation, and the former affords a true sugar. These subjects require a farther examination. Sugar has been procured also from the birch, the skirrett, the white beet, and the sugar maple; but these processes scarcely belong to our subject, which is sugar in the abstract, from whatever source it may be procured, and its effects on the human body.

To treat of the advantages and disadvantages of sugar is a difficult task, since with one class of authors it is the most salutary food and the best of medicines; with others, little less than a poison. Sugar, unless it produces heartburn, is probably harmless; nor does it injure the teeth, or contribute to the production of worms. It is highly nutritious; since in the crop season the most sickly negro and the leanest pig become fat and healthy. Yet somewhat in these effects must be attributed to the mucilage with which the sugar is mixed in the cane, and something to the fresh vegetable substance in which a powerful antiscorbutic property resides, though we cannot detect its source or its nature. If sugar, too, contributes to evacuate worms, as Dr. Moseley contends, it must be in part attributed to its laxative power, and in part to its salutary, nutritious tendency; for he describes the amendment in the general health, while he speaks of the discharge of worms. It has been supposed to attenuate the juices, by contributing as an intermede to their more intimate mixture, and consequently to resolve obstructions. On this principle it is said to cure hectics, and to relieve infarctions in the viscera: but this power is wholly chimerical; for we have no proof that it enters the blood in its saccharine state, or that, from its chemical properties, it is capable of assisting the mixture of the oily and watery portions of our fluids. Dr. Stark's experiments seem to show that it really possesses an attenuating power; but his saccharine diet was the last of his wanton experiments, and we cannot depend on the general effects of any medicine from what may have been the result in an exhausted constitution. Others have contended that it thickens the fluids, and occasions infarctions; but this effect is equally visionary, and derived only from its nutritious qualities. Sugar is undoubtedly a demulcent as well as a nutrient; but we have no evidence of any farther advantages: it produces often flatulence and acidity in the primæ viæ; but we know of no other inconvenience. Impure sugar is slightly laxative. Externally to wounds sugar is slightly stimulant and escharotic: burnt sugar, from the evolution of the pyromucous acid, more active in each respect.

In experiments out of the body sugar is a very powerful and useful antiseptic; but it shows no effect of this kind when internally taken. In pharmacy it is used to preserve vegetable substances; but for this purpose its proportion must be considerable, and the whole inspissated, or it will accelerate the changes it was intended to prevent. It is generally used also to render medicines more palatable, without consulting the taste or often the circumstances of the disease. We have seen antacid lozenges produce more acid from their sugar than their proportion of an absorbent earth could destroy.

Sugar, when depurated, boiled in rose water, and cast into troches, is called *Christi manus;* when pearls are added, *manus Christi perlata.*

By the assistance of heat, sugar dissolves in rectified spirit; but the greatest part separates when cold, concreting into a crystaline form. On this foundation saccharine concretions are obtained from saturated spirituous tinctures of several of our own plants, the saccharine part separating when the tincture is cooled, while the resinous and other matter separated from the plant remains in the solution.

See Moseley on Sugar, second edition; Neumann's Chemistry; Lewis's and Cullen's Materia Medica; Slare on Sugar; Cruickshank's Experiments in Rollo on Diabetes.

SA'CCHARUM CANADE'NSE, and ACERINUM. See ACER.

SA'CCHARUM ALU'MINIS. See ALUMEN.

SA'CCHARUM LACTIS: the SUGAR of MILK has been long known and highly esteemed; probably,

however, beyond its real value; but its real nature is not yet generally known. Kempfer has informed us that it was prepared by the Bramins; though Fabricius Bartoldi first mentioned it in his Encyclopædia, published at Bologna in 1619, under the title of manna, or nitre of milk. It was long highly esteemed in the forms prepared in Switzerland, viz. of tablets and crystals. The tablets were only inspissated whey, prepared from rennet. These tablets are dissolved in water, depurated by the white of an egg, and set to crystalise. The first crystals are beautifully white; but those which follow require another depuration and evaporation. They are not sensibly acid, rendering oils miscible with water, and preventing the separation of cream from milk. Sheep's milk, though seemingly the sweetest, afforded the least proportion, and asses' milk the largest; goats', cows', human, and mares' milk followed that of sheeps' in the same order; goats' milk producing the least, and mares' the greatest quantity next to asses' milk.

The crystals of the sugar of milk are rhomboidal; their taste is sweetish, or rather mawkish, and they are soluble in four parts of boiling water, and about twelve of cold. It seems to contain the radical of the saccharine acid, without any separate acid or alkali, with what is styled a saponaceous substance, but is, however, mucilage. In reality this boasted remedy, which has been used in hectics, &c. is little more than a mucilaginous substance, with an excess of the radical of saccharine acid. It was supposed to be the subject of, or at least to assist, the vinous fermentation; but this suspicion Fourcroy has shown to be unfounded.

SACCHARUM SATURNI. See PLUMBUM.

SA'CCHO-LACTIC ACID differs, as will be obvious from the former article, from the *mucous*. It is prepared by treating the sugar of milk repeatedly with nitric acid, during which the saccho-lactic separates in a white powder, and from the remaining sugar some crystals of oxalic acid are formed. This white powder is sparingly soluble in hot water; but it reddens the blue vegetable juices, effervesces with chalk, expelling the carbonic acid, and forms neutrals, styled *saccholats*, which have not been examined. It is probably a mucilage, with a little saccharine or oxalic acid slightly adhering, or, what is more probable, an oxalic acid disguised by the union of animal matter. See Scheele's Essays; Hemstadt in Crell's Chemical Journal.

SA'CCHO-LAS, (from *saccharum, sugar*, and *lac, milk*). SACCHOLATS. Salts formed by the union of saccho-lactic acid, with different bases.

SACCULI ADIPO'SI, (dim. of *saccus, a bag*, and *adeps, fat*). See CELLULOSA MEMBRANA.

SA'CCULI MUCO'SI. See BURSÆ MUCOSÆ.

SA'CCULUS and SA'CCHUS. See EPITHEMA.

SA'CCULUS CHYLI'FERUS. See RECEPTACULUM CHYLI.

SA'CCULUS CO'RDIS. See PERICARDIUM.

SA'CCULUS LACRYMA'LIS. The LACRYMAL SAC is an oblong membranous bag, situated behind the caruncle at the inner canthus of the eye, by which the tears are conveyed from the surface of the eye to the nostril on each side. It receives the tears at the lachrymal points, from whence it conveys them to the os turbinatum inferius, where it opens into the nostril. The body of the bag is in the grooves of the os unguis, and os maxillare, which form the passage. See PUNCTA LACRYMALIA.

SA'CCUS, (from the Hebrew term *sak*, because it is only open at one end). The *intestinum cæcum, anus diacheomenus*.

SA'CER MU'SCULUS, (from *sagur*, Heb. *secret*), *transverso-spinalis lumborum* of Winslow, is composed of several oblique, converging, or transverso-spinal muscles, and lies between the spinal and oblique apophyses of the loins, reaching to the os sacrum. The lowest is fixed to the upper lateral parts of the os sacrum, and to the posterior superior spine of the os ilium; the rest are fixed to the three lowest transverse apophyses, and to the four lowest oblique apophyses of the loins and their lateral tuberosities; from thence they run up to all the spinal apophyses of the vertebræ.

SACERDO'TIS VIRI'LE. See ARUM.

SACK. A wine much drank by our ancestors, and celebrated in the pages of Shakspeare. It seems to have been a stronger Rhenish, which is at first sharp and unpleasant. We suspect it to be of this kind; because it was sometimes adulterated with lime. "There's lime in this sack," says sir John Falstaff. Sugar was occasionally added: but this does not furnish an argument on either side; for our ancestors were always fond of sweet liquors. Howel calls it a dry Spanish wine, *vin sec*; others derive it from the borachios, in which it was probably brought from the mountains; but these were never called *sacks*. Sack is called by Venner, "a penetrative wine, a quality retarded by sugar;" and we should suspect, that by penetrative he means pungent.

SA'CKCHAR, SA'KCHARI. See SACCHARUM.

SA'CRA ARTE'RIA, (from *sacer*), goes out from the back part of the aorta, at the bifurcation, on each side respectively. Sometimes there are three or four, and sometimes but one. They occasionally rise a little higher from the lumbares, or from the iliacæ; and are ramified on the os sacrum and the neighbouring parts of the peritonæum, rectum, and fat, penetrating into the substance of the bone.

SA'CRA HERBA. See VERBENA.

SA'CRA TI'NCTURA, now ALOES VINUM. ALOETIC WINE, is made by digesting eight ounces of socotorine aloes, and two ounces of canella, in seven pints of Spanish white wine, to which a quart of proof spirit has been added. It will be of use to prevent the aloes, when moistened, from running into concretions, to mix the aloes and canella separately powdered with pure well-washed white sand. (Ph. Lond. 1788). This is esteemed a warm purgative, in doses from six to sixteen drams. Three or four drams, with a dram of spirit of lavender, repeatedly taken about noon, or at bed-time, have been thought useful in cases of indigestion and headachs: large doses of the wine or the tincture of aloes have been directed to produce the bleeding piles where they have been suddenly suppressed, and their return supposed to be necessary.

SA'CRA VA'SA. The arteries and veins which belong to the os sacrum and the adjacent parts.

SA'CRA VE'NA sometimes proceeds from the bifurcation of the vena cava, at others from the origin of the left iliaca, and accompanies the artery of the same name.

SA'CRI ACU'MEN O'SSIS. See ACUMEN.

SACRO LUMBA'RIS, vel LUMBA'LIS. This mus-

cle is a part of the longissimus dorsi at its origin; but soon divides, and is inserted by digitations into the angle of every rib. The uppermost tendon is inserted into the transverse process of the last cervical vertebra.

SACRO LUMBA'RIS ACCESSO'RIUS; *accessorius sacro-lumbalis; cervicalis descendens, cervicalis dorsi*, is a continuation of the cervicalis dorsi, lies on the outside of the complexus, and coming down from the transverse processes of the lower vertebræ colli, is continued down under the sacro lumbaris to the ribs, which it depresses, as well as the sacro lumbaris.

SA'CRO N'ERVI. Five or six branches of nerves from the spine pass through the os sacrum, and from thence obtain their nam[illegible] three first join the fourth and fifth lumbar ner[illegible] form the sciatic nerve. The third sacral nerve gives some branches to the pelvis.

SA'CRO COCCYGÆUS. See COCCYGÆUS POSTERIOR.

SA'CRUM OS, (from its magnitude and importance, since it is the support of the spine), *os basilare, albagiazi*. This bone is of a somewhat triangular shape, broad above, narrow below, convex behind, for the more advantageous attachment of the muscles, and concave before, to enlarge the cavity of the pelvis. In the fœtal state it consists of five distinct bones, which in adults are united, though the marks of the former separation continue. On the outside there is a ridge, which is called the spine; and the bodies of the vertebræ are united to the processes by strong bony bridges, which support the weight of the whole spine. Oblique processes are only found in the upper bone of the sacrum, and these are connected by strong ligaments to the processes of the last lumbar vertebra. Where the oblique processes in the bones below should be, we find only tuberosities. The transverse processes are united, and the three first form two irregular cavities, of which that behind is divided by a transverse ridge. The *transverse processes* of the last two bones are short, and from these to the ilium the sacro sciatic ligaments pass. The *spinal processes* of the three uppermost bones are nearly erect, short, and sharp: the lower ones are open behind, and the fourth is more blunt or bifurcated, without the two legs forming a spine. Sometimes they do not form a canal by their union, but a fossa by their approach. The canal contains the lower part of the spinal marrow, which gradually grows smaller, terminating, as we have seen, in filaments styled *cauda equina*, and the cavity is proportionally diminished. On the fore part there are four pair of holes for the transmission of the nerves. The holes on the back part are covered by membranes, which admit of the passage of small nerves; but the largest nerves pass anteriorly. The size of the holes, as of the canal, lessens as they descend. This bone is connected with the ossa innominata by synchondrosis, and forms the posterior part of the pelvis: its substance is spongy. Below, the os sacrum is connected with the os coccygis.

SA'FFRAN DE TE'RRA, (from the Arabic term *zafar, yellow*). See CURCUMA.

SAGAPE'NUM, *serapinum*, is the gummy resinous juice of an oriental or rather an African plant, supposed to be a species of FERULA, q. v. It is brought from Alexandria, either in distinct tears, or in large masses: externally it is yellow, internally paler, and clear like horn; but sometimes of a greenish hue, soft, and sticking to the fingers when handled. Pieces of bdellium, sometimes sold for it, may be distinguished by their weaker smell: that of sagapenum is alliaceous, and resembles a mixture of asafœtida and galbanum. The taste is moderately hot and pungent. This gummy resin is superior to the opoponax, galbanum, and ammoniacum, approaching nearest to the asafœtida. It is generally used as an expectorant, deobstruent, and antispasmodic, often in the same cases as the ammoniacum, or asafœtida. Boiling water dissolves about three-fourths of it; rectified spirit about one half. From 480 grains, 306 of spirituous and 108 of watery extract were obtained; by an inverse operation, 170 of watery and 241 of spirituous extract. Water brings over with it in distillation much of the flavour of the sagapenum, and a small portion of essential oil, but the distilled spirit is not wholly destitute of flavour. It is an ingredient in the pilulæ gummi, now pilulæ galbani compositæ. See Lewis, Tournefort's and Cullen's Materia Medica; Neumann's Chemistry.

SAGITTA, AN ARROW. ARROW HEAD, from its leaves resembling the head of an arrow. *Sagittaria sagittifolia* Lin. Sp. Pl. 1410, β. At first the leaves of this plant resemble those of plantain, but afterwards the bearded head of an arrow; the fruit consists of a collection of seeds like the strawberry. It is said to possess similar virtues with the plantain, but is rarely used. Its roots are esculent.

SAGITTA'LIS SUTU'RA, (from its resemblance to an arrow); *virgata, obelæa, rhabdoides*, the SAGITTAL or STRAIT SUTURE of the HEAD, which runs from the os frontis to the os occipitis, between the parietal bones.

SAGITTA'RIA ALEXIPHA'RMICA, (from its use in counteracting the poison conveyed by darts); *aguti-guepo-obi Brasiliensis, Malacca radix, canna Indica, thalia geniculata* Lin. Sp. Pl. 3, ARROW-ROOT, DART-WORT. It is found in the West-Indian islands, is two or three inches long, as thick as a man's thumb, jointed and white. See Raii Historia.

SAGITTA'TUM, the leaf of a plant shaped like an arrow.

SAGOU. (See PALMA JAPONICA.) It is procured from the *cycas circinalis* Lin. Sp. Pl. 1658, which grows in Amboyna, Sumatra, and the Molucca islands, in marshy grounds; and there are two or three species, or at least varieties, of it not accurately described. Its trunk rises to ten or twelve feet in height, and the medullary substance is interposed between the fibres. It bears fruit only when arrived at its full growth, or rather when it is near the decline; and as the fruit is nourished at the expence of the medullary farina, the natives endeavour to retard the period of fructification. When the medulla has attained its perfection, the leaves are covered with a white powder, which seems to be a transudation of this substance. Sometimes the trunk is perforated, a part taken out, and rubbed in the hands to ascertain the state of the farina.

When the period of the collection of this fæcula is arrived, the tree is cut down, divided transversely into billets, which are split in three or four pieces. The medulla, then cleared from its involucra, is bruised, agitated in water till it is entirely suspended, and then strained. What remains on the filter is given to the hogs, or thrown into the garden; what has passed through it is separated by rest, and after some time the

fluid is poured off. If the more solid parts which do not pass through the filter are thrown into the garden, mushrooms of an exquisite flavour are soon produced, and larvæ of weevils, which are not less esteemed as food, soon swarm on the residuum.

The fæcula which thus subsides is cut into little cakes, and dried in the shade. This is the true sago of which biscuits are made; but as it is not susceptible of fermentation, it will not produce bread. Soups are thickened with it, and it is an ingredient in sauces of every kind in India, and the adjacent islands.

Sago, kept dry, may be preserved for an indefinite period; but to bear the vicissitudes in climate in a long voyage it must be roasted in a furnace, and the surface slightly browned. In this last form it is generally brought to Europe.

With us it is usually eaten in a simple state, boiled with water or milk, sometimes seasoned with spices, sometimes warmed with wine. It is a light and nourishing food, adapted to the extreme of either period of life, to hectical patients, as well as those recovering from long fevers, or diseases where the digestive faculties are much weakened. Its chief recommendation arises from its not fermenting, and consequently from its being neither flatulent nor acescent.

Potatoes, it is said, will afford a similar fæcula, and the caryota, with many other palms, contain apparently a medulla of the same kind.

SAL, (from *αλς*, *salt*). SALT. Difficulties on every side have met those chemists who have with the greatest care attempted to define salts, and the reason will be obvious from what we have often had occasion to observe, that nature has no limits: those which we perceive are the result of our imperfect knowledge, and when the lacunæ are filled by progressively extending science, our definitions are useless. The saline taste is a simple idea, of which common salt is a familiar example; and if we were to define it, we should say that it is a pungent taste, without heat, or biting acrimony. The best authors who have defined salts from their properties consider them as remarkable for their sapidity, soluble, incombustible, and capable of crystalisation. Yet many neutrals have no taste, and some metallic oxides a sensible one. Vitriolated barytes crystalises, but is scarcely soluble in water; and many bodies certainly not saline are incombustible, as the various earths of the micaceous genus. In short, objections rise on every side, nor will chemical analysis assist us. If azote is a principle of some salts, oxygen is of others; if some are apparently simple, others are compounded; if some are fixed, others are volatile. The difficulty, in fact, arises from a name having been assigned when science was in its infancy, and having been obstinately retained when it was found neither scientific nor accurate. We shall, therefore, not consider them in the abstract, but divide them according to the following scheme:

I. Simple salts.
 α Alkaline.
  Potash, natron, ammonia.
 β Earthy.
  Barytes, lime, alumine, magnesia.
 γ Acid.
  Mineral; vitriolic, nitrous, and muriatic.
  Vegetable; tartar, the acid of sugar, of wood-sorrel, of fruits, &c.
  Metallic; arsenic, columbium, &c.
  Animal; phosphoric, uric, bombic, formic, lactic.
  Aerial; carbonic acid gas.
 δ Neutral.
  Alkaline, with the different acids.
  Earthy, with the same.
 ε Triple or quadruple compounds.

It is needless to pursue this subject, which is merely chemical; for the salts used in medicine occur under their proper heads, and we shall add only tables of the synonyms of the different salts, and of their respective solubility.

TABULA OF SYNONYMORUM.

ACIDA.

ACIDUM VITRIOLI VEL SULPHURICUM.
Oleum vitrioli.
Spiritus vitrioli.
——— sulphuris per campanam.
Acidum sulphuris.
Spiritus aluminis.
Acidum calcanthis.
——— primigenium.
——— universum.
——— aereum.
——— vagum fossile.
——— sulphurosum.

ACIDUM NITROSUM.
Spiritus nitri.
——— Glauberi.
Aqua fortis.
Acidum nitricum.

ACIDUM MURIATICUM.
Spiritus salis marini.
——— Glauberi.
——— acidus salis ammoniaci.
Acidum muriaticum oxygenatum.

ACIDUM ACETOSUM.
Acetum.
——— distillatum.
Spiritus aceti.
Acidum aceticum.

ACIDUM TARTARI.
Acidum œnolithicum. Black.
Chrystalli tartari.
Cremor tartari.

ACIDUM BORACICUM.
Sal sedativum Homberg.
—- narcoticum Homberg.

ALCALINA.

ALCALI FIXUM VEGETABILE.
Lixiva. Black.
Kali Pharmacopœiæ Londinensis.
Potassa Gallorum.
Sal tartari.
—- absynthi.
Cineres clavellati.
Nitrum fixatum.
Cassob, alkakest Glauberi.
Oleum tartari.

Lixivium tartari.
Aqua kali.
Pearl, pot and blanch ashes.
Cineres russici.
Lapis infernalis.

Alkali fixum minerale.
Trona. Black.
Soda. Pharmacopœiæ Edinensis.
Natron. Pharm. Londinensis
et Antiquorum.

Alkali volatile.
Ammonia. Black.
Ammoniaca Gallorum.
Sal volatile ammoniacæ.
— cornu cervi.
— urinæ.
Spiritus salis ammoniaci.
——— cornu cervi.
——— urinæ.
Aqua ammoniæ.

NEUTRA SALINA.

Kali vitriolatum.
Alkali vegetabile fixum. Vitriolatum Edin.
Sulphas potassæ.
Sal polycrestum.
Nitrum vitriolatum.
Sal enixum.
Sal è duobus.
Lixiva sulphurica. Black.
Nitrum stibiatum.
Panacea ducis holsatiæ.
Arcanum duplicatum.

Kali nitratum.
Lixivia nitrata. Black.
Nitrum.
Nitras potassæ Gallorum.
Sal petræ.

Kali muriatum.
Lixivia muriata Black.
Murias potassæ Gallorum.
Sal digestivus.
— febrifugus Sylvii.
— marinus regeneratus.
Spiritus salis marini coagulatus.

Kali acetatum.
Lixivia acetata. Black.
Alkali fixum vegetabile acetatum.
Acetas potassæ (acetis) Gallorum.
Tartarus regeneratus.
Sal diureticus.
Terra foliata tartari.

Kali tartarisatum.
Lixivia œnolithica. Black.
Alkali fixum vegetabile tartarisatum.
Tartris potassæ Gallorum.
Sal vegetabile.
Tartarus solubilis.
——— tartarisatus.

Natron vitriolatum.
Trona sulphurica. Black.
Soda vitriolata. Ed.
Alkali fixum fossile vitriolatum.
Sal Glauberi.
— mirabile Glauberi.
Sulphas sodæ Gallorum.

Natron nitratum.
Trona nitrata. Black.
Nitras sodæ Gallorum.
Nitrum cubicum.
——— quadrangulare.

Natron muriatum.
Trona muriata. Black.
Muria. Ed.
Sal marinus.
— communis v. culinaris.
— muriaticus.
Murias sodæ.
Sal gemmæ.

Natron acetosum.
Trona acetosa. Black.
Acetis sodæ Gallorum.
Sal vegeto mineral.

Natron tartarisatum.
Œnolithus tronatus. Black.
Soda tartarisata.
Sal rupellensis.
— polycrestus rupellensis.
— de seignette.
Tartris sodæ Gallorum.

Natron boracinatum.
Borax (tincal).
Boras sodæ Gallorum.

Ammonia vitriolata.
Ammonia sulphurica. Black.
Sal ammoniacus vitriolicus.
Sulphas ammoniacalis Gallorum.
Ammoniacus secretus Glauberi.

Ammonia nitrata.
Nitras ammoniaci Gallorum.
Nitrum semivolatile.
——— flammans.

Ammonia muriata.
Sal ammoniacus. Edin.
Ammonia muriata. Londin.
Murias ammoniacalis Gallorum.

Ammonia acetata.
Spiritus Mindereri.
Aqua ammoniæ acetatæ. Londin.
Acetis ammoniacalis Gallorum.

NEUTRA TERREA.

Calx vitriolata.
Selenites.
Gypsum.
Vitriolum calcareum.
Plaster of Pariæ.

Calx nitrata.
Nitrum calcareum. Monro.

CALX MURIATA.
Sal ammoniacum fixum.
Oleum calcis.
Sal marinum calcareum.

MAGNESIA VITRIOLATA.
Sal catharticum amarum.
Epsom and Sedlitz salt.
Sal anglicum.

ALUMINA VITRIOLATA.
Alumen.
Vitriolum aluminis.

ALUMINA NITRATA.
Alumen nitrosum.
Nitrum argillæ.

NEUTRA METALLICA.

FERRUM VITRIOLATUM.
Vitriolum martis.
——— anglicum.
Sal martis.

CUPRUM VITRIOLATUM.
Vitriolum Romanum.
——— veneris.
——— cupreum.

ZINCUM VITRIOLATUM.
Vitriolum album.

MERCURIUS VITRIOLATUS.
Turpeth mineral.

MERCURIUS MURIATUS.
Mercurius corrosivus sublimatus.

ANTIMONIUM MURIATUM.
Butter of antimony.

ANTIMONIUM TARTARIZATUM.
Emetique Gallorum.
Tartar emetic.

We had ultimately reserved for this article the result of the experiments on the composition of the muriatic acid and soda, suggested by MM. Pacchioni, Peele, and Guyton. It is with feelings of mortification and disappointment we must add, that the experiments of the galvanic society at Paris, and the very minute delicate examinations of Mr. Davy in the Philosophical Transactions of the present year (1807), have nearly, set the question at rest, and shown that the acid and the alkali apparently produced were separated either from the apparatus, or the fingers of the operator. Mr. Davy's researches have, however, pointed out a very refined mode of analysis by means of the galvanic fluid, which promises the most important results.

Very few hours had elapsed, after writing the last sentence, when the discovery of Mr. Davy, thus predicted, was announced. By the galvanic fluid he discovered both potash and soda to be metallic bodies, attracting oxygen so powerfully as to decompose water, and they thus appear in the form of oxides. No fluid, except naphtha, will retain them in their metallic state. They are chiefly remarkable, as metallic oxides, for their inconsiderable specific gravity; but we shall, however, add in this place the abstract of Mr. Davy's experiments from a respectable journal, and follow it with a table of the solubility of different salts from Dr. Duncan's excellent Pharmacopœia.

Mr. Davy in the last Bakerian lecture, suggested the probability that other bodies, not then enumerated, might be decomposed, or exhibited in more simple forms, by electricity, particularly that excited by the galvanic apparatus. Since that time by means of several very powerful galvanic troughs, consisting of 100 pairs of plates six inches square, and 150 pairs four inches square, he has succeeded in decomposing potash and soda. This was effected by placing the alkali moistened on a plate of platina, and exposing it to the galvanic circle; when oxigen was disengaged and the primitive base of the alkali left on the plate, in form and appearance much resembling small globules of mercury, and of an highly inflammable nature. These globules are lighter than any fluid, as they swim in distilled naphta. The base of potash is of a specific gravity as six, that of water being ten. At the freezing point these globules are hard and brittle, and when broken and examined with a microscope they present a number of facettes with the appearance of crystallization; at 40° of Fahrenheit they are soft, and can scarcely be distinguished from globules of quicksilver: at 60° they are fluid, and at 100° volatile. When exposed to the atmosphere they rapidly imbibe oxigen, and reassume their alkaline character. In distilled naphta they may be kept four or five days; but if exposed either to the atmosphere or to oxigen gas, they almost instantly become incrusted with a coat of regenerated alkali: this incrustation can be removed, and the reduced globule will remain in naphta, or separated from all contact with oxigen, as before: the naphta forms a thin film round the globule, and excludes the contact of oxigen.

One part of the base of alkali and two of mercury, estimated by bulk, (or about 1 part of the base to 48 of mercury by weight), formed an amalgam, which when applied in the circle of a galvanic battery (which produced an intense heat), to iron, silver, gold, or platina immediately dissolved these, and converted them into oxides, in which process alkali was regenerated. Glass, as well as all metallic bodies, was also dissolved by the application of this substance; the base of alkali seizing the oxigen of manganese, and of minium, potash was regenerated. One of these globules placed on a piece of ice dissolved it, and burnt with a bright flame, giving out an intense heat. Potash was found in the product of the dissolved ice. Nearly the same effects followed when a globule was thrown into water; in both cases a great quantity of hydrogen gas was rapidly liberated.

The specific gravity of the base of soda is as seven, that of water being ten; it is fixed in a temperature of 150°, and fluid 180°.

The specific gravity of the amalgam was found by means of a mixture of oil of sassafras with distilled naphta, in which a globule remained either buoyant at top or quiescent at bottom, in a fluid weighing as nine, water being ten.

Mr. Davy tried its effects on the phosphats, phosphurets, and the greater part of the salts of the first and second degree of oxydisement, all which it decomposed, seizing their oxigen, and reassuming its alkaline qualities.

From the medium of a number of analytical, and of nine synthetical experiments, it appeared that 100 parts of potash contain 15 oxigen, and 85 of inflammable

base; and that the same quantity of soda contains 20 oxigen and 80 base.

Mr. Davy tried a great number of complex experiments on volatile alkali in which he was assisted by Messrs. Pepys and Allen; by these he ascertained, that oxigen is also an essential ingredient in ammonia, 100 parts of it containing 21 of oxigen: but this result depended too much on eudiometrical calculation to be received as an established fact.

The earths of barytes and strontites were likewise examined, as being most analogous to the alkali's, and both yielded considerable quantities of oxigen. Mr. Davy related also some miscellaneous experiments on the muriatic and fluoric acids, which completely refutes the strange opinion held by some, that they did not contain oxigen, as these experiments proved in the most satisfactory manner that oxygen is one of their constituent principles.

TABLE *of the* SOLUBILITY *of Saline and other Substances, in* 100 parts *of Water, at the temperature of* 60° *and* 212°.

Acids.	60°	212°
Sulphuric,	unlimited	unlimited
Nitric	do.	do.
Acetic	do.	do.
Prussic,	do.	do.
Phosphoric, Acetic, Tartaric, Malic, Lactic, Laccic, } very soluble, proportion not determined.		
Arsenic,	150	
Arsenious acid,	1.25	6.6
Citric,	133	200
Oxalic,	50	100
Gallic,	8.3	66
Boracic,		2
Mucic,	0.84	1.25
Succinic,	{ 4 / 1.04	50
Suberic,	0.69	50
Camphoric,	1.04	8.3
Benzoic,	0.208	4.17
Molybdic,		0.1
Chromic, unknown.		
Tungstic, insoluble.		
Salifiable Bases.		
Potass,	50	
Soda, very soluble, proportion not known.		
Baryta,	5	50
——— crystallised,	57	any quantity.
Strontia,	0.6	
——— crystallised	1.9	50
Lime	0.2	
Salts.		
Sulphate of potass,	6.25	20
Super-sulphate of potass,	50	100 +
Sulphate of soda,	37.4	125
——— ammonia,	50	100
——— magnesia,	100	133
——— alumina, very soluble, proportion unknown.		
Super-sulphate of alumina and potass, ——— ammonia, } alum,	5	133
Nitrate of baryta,	8	25
——— potass	14.25	100 +
——— soda,	33	100
——— strontia,	100	200
——— lime,	400	any quantity.

	60°	112°
Niterate of ammonia,	50	200
——— magnesia,	100	100 +
Muriate of baryta,	20	
——— potass,	33	
——— soda,	35.42	36.16
——— strontia,	140	any quantity.
——— lime,	200	
——— ammonia,	33	100
——— magnesia,	100	
Oxy-muriate of potass	6	40
Phosphate of potass, very soluble.		
——— soda,	25	50
——— ammonia,	25	25 +
——— magnesia,	6.6	
Sub-borate of soda,	8.4	16.8
Carbonate of potass,	25	83.3
——— soda,	50	100 +
——— magnesia,	2	
——— ammonia,	50 +	100
Acetate of potass,	100	
——— soda,	35	
——— ammonia, very soluble,		
——— magnesia, do.		
——— strontia,		40.8
Super-tartrate of potass,	1.67	3.3
Tartrate of potass,	25	
——— potass and soda	25	
Super-oxalate of potass,		10
Citrate of potass, very soluble.		
Prussiate of potass and iron.		
Nitrate of silver very soluble.		
Muriate of mercury (corrosive sublimate),	5	50
Sulphate of copper	25	50
Acetate of copper very soluble.		
Sulphate of iron,	50	133
Muriate of iron very soluble.		
Tartrate of iron and potass.		
Acetate of mercury.		
Sulphate of zinc,	44	44 +
Acetate of zinc very soluble.		
Acetate of lead, (Ed. Pharm.) Bostock.	27	
——— as it exists in Goulard's extract,	more so.	
Tartrate of antimony and potass,	1.25	2.5
——— by my experiments,	6.6	33
Alkaline soaps very soluble.		
Sugar,	100	any quantity.
Gum very soluble.		
Starch,	0	very soluble.
Jelly,	sparingly,	abundantly.
Gelatin,	soluble,	more so.
Urea very soluble.		
Cinchonin.		

*Salts not soluble in 100 times their weight of water.**

Sulphates of baryta, strontia, and lime, and sub-sulphate of mercury.
Phosphates of baryta, strontia, lime, magnesia, and mercury.
Fluate of lime.
Carbonates of baryta, strontia, and lime.
Muriates of lead, and silver, and sub-muriate of mercury, (Calomel.)
Sub-acetate of copper.

SOLUBILITY *of Saline and other Substances in 100 parts of Alcohol, at the temperature of 176°.*

All the acids, except the sulphuric, nitric, and oxy-muriatic, which decompose it, and the phosphoric and metallic acids.

Potass, soda, and ammonia, very soluble.	
Red sulphate of iron.	
Muriate of iron,	100
——— lime,	100
Nitrate of ammonia,	89.2
Muriate of mercury,	88.3
Camphor,	75.
Nitrate of silver,	41.7
Refined sugar,	24.6
Muriate of ammonia,	7.1
Arseniate of potass,	3.75
Nitrate of potass,	2.9
Arseniate of soda,	1.7

Muriate of soda, (Mr. Chenevix). Alkaline soaps. Magnesian do. Extractive. Tannin. Volatile oils. Adipocere. Resins. Urea. Cinchonin.

Substances insoluble in Alcohol.

Earths.
Phosphoric and metallic acids.
Almost all the sulphates and carbonates.
The nitrates of lead and mercury.
The muriates of lead, silver, and soda.
The sub-borate of soda.
The tartrate of soda and potass, and the super-tartrate of potass.
Fixed oils, wax, and starch.
Gum, caoutchouc, suber, lignin, gelatin, albumen, and fibrin.

SAL is also a term affixed to several saline substances, which for the sake of the references to the present work we shall add. *Sal vol. salis ammoniaci; sal c. cervi.* See ALKALI VOLATILE. *Sal absinthii; tartari; sodæ*, see ALCALI. *Ammoniacum*, see VOLATILE. *Alkalinus salis marini*, see ANATRON: *cyrenaiacus*, see AMMONIACUS SAL: *fossilis, rupeus*, see GEMMA SAL: *catharticus Glauberi; Dauphiny; mirabilis; admirabilis;* see GLAUBERI SAL: *Seignerti*, see DIURETICUS SAL: *fusionis; fixionis;* see ALEMBROTH: *gemmæ; communis; marinus*, see MARINUM SAL: *alkali fixum*, see CLAVELLATI CINERES: *petræ; prunellæ; polychrestum*, see NITRUM, &c.

SALACITAS, (perhaps from *Salacia*, the goddess of the sea, *Venus*). *Hysterocnesmus, nymphomania, hysteromania, pruritus uteri, furor, lagnia, satyriasis.* We have introduced this article with some hesitation, as we have constantly avoided every method of furnishing any incentive to the prurient imagination, and have been at last determined, by reflecting that, as it often arises from obscure and unsuspected causes, we may relieve what is frequently a troublesome disease, and rescue from suspicion a moral character in a case where the complaint is wholly corporeal.

It is a disease often of early youth, and not unfrequently of advanced age. An unsuspected source of the complaint is often irritation from diseases of neighbouring organs. Thus it sometimes arises from diseased ovaries, from calculus in the bladder or kidneys, from leucorrhœa, from inflammation of the womb, from acrid purgatives, from the irritation of cantharides on the neck of the bladder, from flatulence, and is hence probably the disease of melancholic temperaments, from whipping, from the diurectic effect of acidulous waters, from a disproportioned clitoris, and from worms, particularly ascarides. A general acrimony is accused by Schurig; but we find more decisive proofs of its effect in hydrophobia and lepra; in the effects of aromatics; and, if the facts are well founded, in the use of satyrium. General fulness, plethora, and continence, are obvious causes, and require no remark; but the use of tea, connected with plethora, is accused, probably with little reason. Riding on horseback is equivocal in its effects, and we find it sometimes enumerated among the causes, and sometimes among the remedies. It is certainly not a remedy.

When the disease proceeds from any of the causes enumerated, the cure must depend on their removal. When it originates from increased excitement of the vessels of the respective organs, the remedies which we shall enumerate will often relieve; and these will mitigate the complaint, though it arises from other, more distant, irritations.

Cold is the principal remedy, and even cold water has been injected into the vagina by Nicolai. Nitre, as a means of abstracting heat, and diminishing the action of the vessels, is highly useful; but large doses of camphor, as we have often mentioned, are still more effectual. Hahn directs this medicine in combination with vinegar. A similar remedy is the acetated lead, recommended in the Ephemerides Naturæ Curiosorum, Annus ii. 121.

Every means of diminishing the quantity of fluids is useful. Venesection yields, however, a temporary and precarious relief. Saline purgatives are more effectual, and a cooling diet of acid fruits and vegetables is more permanently beneficial. The portulaca has been particularly recommended, though without any sufficient foundation.

Narcotics have not been fairly tried. Opium has seemed useful; but the cicuta, digitalis, and aconite will be apparently more so. Amusing the mind, and avoiding every lascivious idea, will be highly necessary; for Ovid's Cure of Love is peculiarly applicable to this disease. *Res age tutus eris.* We find instances where ulcers or the small-pox have relieved; but the idea has not been pursued so as to recommend a drain by means of a seton or issue.

See Moschion de Morbis Mulierum; Ambrose Parey, xxiii. 64; Mercurialis de Morbis Mulierum; Schurig Gynæcologia.

SALAMA'NDRA, (because it is not destroyed by fire, a property reported of the salamander). See AMIANTHUS.

SA'LEP, vel SA'LEB. See ORCHIS.

SALICO'RNIA, (so called from its salt taste and horn-like shape, from *sal* and *cornu*). Jointed GLASS-WORT. Its leaves are gathered and pickled instead of samphire. See KALI.

SALI'TRON. See ANATRON.

SALIU'NCA. See NARDUS CELTICUS.

SALI'VA, (from a salt taste), is that fluid by which the mouth and tongue are continually moistened in their natural state, and is supplied by glands, from thence called salivary. This fluid is thin and pellucid, not concreting by heat, almost without taste and smell. By chewing, it is expressed from the ducts, and is intimately mixed with our food, the digestion of which it greatly promotes. In hungry persons it is more acrid, and copiously discharged; and in those who have fasted long it is highly so, so that the fasting spittle has been styled resolvent: about twelve ounces have been discharged in a day. The saliva contains chiefly water, with mucus, sea-salt, and probably some animal matter. It is coagulated by alcohol, inspissated by a small proportion, and dissolved by a larger one of mineral acids. The sea-salt is not obvious to the taste, from our constant experience of it, but the muriatic acid is in part also combined with ammonia, since lime and caustic alkali separate ammonia from it. The animal matter appears from the tartar on the teeth, and it sometimes is found in the form of a calculus in the salivary ducts. Its specific gravity is greater than water. Saliva probably hastens fermentation, since it is apparently the ferment to the bowls of Kava in the South-Sea islands. Pringle found it an antiseptic; though it easily becomes putrid in warm air, out of the body, a quality counteracted probably by the action of the stomach. (See DIGESTION.) When wanting, the functions of the stomach are greatly disturbed.

The saliva is variously diseased. When we spoke of the sweet taste in the mouth, analogous to the sweetness of diabetic urine, we considered the observation as new; but we have since met with it in Schurig's Sialologia, in Riedlin, and the Copenhagen Transactions. The saliva is occasionally yellow, particularly in jaundice, and sometimes it has been said to be blue. From too active salivation Nuck informs us that it is sometimes bloody.

It is well known that the infection of a rabid animal is conveyed by the saliva, and more than one instance has occurred of its producing nervous affections when conveyed during a violent fit of rage. (Hoffmann de Saliva ejusque Morbis.) We find also that the bites of epileptic persons have been attended with disagreeable consequences. It is sometimes deficient in quantity from inflammation and obstruction of the salivary duct, occasionally from calculous concretions. Worms, it is said, also have been found in it. Diseases have been occasionally conveyed to children by the disgusting custom of tasting the pap, or, in part, masticating the food: each should be severely reprobated.

A too copious evacuation of it produces thirst, loss of appetite, bad digestion, and an atrophy.

See Haller's Physiology, in the article of Mastication; Boerhaave's Institutes; Fordyce's Elements, part. i. p. 23.

SALIVA'LES GLA'NDULÆ, (from *saliva*), the SALIVARY GLANDS, are commonly reckoned three pair, viz. the parotid, the maxillary, and the sublingual; but Dr. Hunter would refer the last to another class.

Various subordinate glandular bodies, distributed round the fauces and throat, seem also to furnish saliva, though probably their chief use is to supply a mucus, to defend the tender skin of the mouth. The parotids, the largest of these glands, are irregular and oblong bodies; but these we have already described (See PAROTIS): the maxillary have also been already noticed, (See MAXILLARES GLANDULÆ).

The sublingual glands are smaller, oblong, and flatted, situated under the anterior portion of the tongue, on the lateral portions of the mylo-hyoidei. The extremities are backward and forward; the edges obliquely inward and outward. They are covered by the external membrane of the tongue; their ducts are small and short, opening near the gums in distinct orifices. The musculi genio-glossi separate the two sublingual glands and the two maxillary ducts. The arteries are derived from the lingual, and the nerves from the fifth pair, which supply the tongue.

To these may be added the MOLARES GLANDULÆ, q. v.; the buccales and labiales, which are rather mucous follicles than glands. We may just add, that the situation of the salivary ducts is not always constant, and that the calculous concretions are often found in them. They are subject also to tumours from other causes, particularly inflammation. (Murray de Tumoribus Salivalibus).

When obstructions have taken place in the duct, suppuration is often the consequence, and the saliva flowing through the wound causes a fistulous ulcer. (Memoires de l'Academie de Chirurgerie, iii. and v.) It is cured sometimes by compression, occasionally by the actual cautery (Saviard); by the gluten of parchment burnt with opium (Riedlin); sometimes by caustics (Gill in the Medical Commentaries, and Louis in the Memoires de Chirurgerie, v. 10. iii. 18); chiefly the lapis infernalis. Tessart employed a seton with success.

SALIVA'LIS DU'CTUS STENO'NIS. The UPPER SALIVAL DUCT, is the duct which carries the saliva from the parotid gland into the mouth. See BUCCINATOR MUSCULUS.

SALIVA'NTIA, (from *saliva*). Medicines which excite a salivation.

SALIVA'RIS HE'RBA, (from its exciting a discharge of saliva). See PYRETHRUM.

SALIVA'TIO, (from *saliva*). A SALIVATION is an extraordinary discharge of spitting, chiefly excited by the use of mercury; a practice seldom employed in any considerable extent. As it may be, however, requisite to excite a gentle spitting, we shall offer a few remarks on the most convenient method of producing and conducting the evacuation, after we have spoken of the increased discharge of saliva from different causes.

A salivation, or *ptyalism*, is sometimes a symptom of disease, more often excited for the purpose of curing. As a symptom it is frequently salutary, though at times, as in paralytic patients, the effects of debility only. We know, for instance, that in the natural

small-pox the discharges of saliva, about the acmé of the disease, is a favourable symptom; in fevers it has been sometimes found critical, and the fluid of dropsies has been occasionally discharged in this way. Yet we perceive from some references to authors whom we have not been able to procure, that it has been fatal, perhaps from its excess, or from the great debility previously induced. Salivation is said to be sometimes periodical, sometimes epidemic.

Its causes are numerous. Suppressed evacuations are very frequent ones, and suppressed fluor albus, ischuria (Daniel in the Medical Communications, vol. i.), suppressed lochia, and perspiration of the hands, have been found to produce it. The state of the stomach is a frequent cause, and it is a common attendant on dyspepsia; generally preceding vomiting. From this effect the squills and antimonials have been probably considered as causes. Acrid substances masticated are common causes, and the irritation of tobacco-smoke is well known. It is only necessary to add, that the continued use of smoking produces a debility of the salivary glands, and often renders the salivation permanent. From debility, also, it is a common symptom in scurvy, often in jaundice. Neighbouring irritations sometimes excite the action of these vessels. We have seen it, we think, owing to scrofulous tumours; and Dr. Power mentions its arising from wool kept too long in the ear.

We know no internal medicine which acts with certainty on the salivary glands, except mercury; for, though we have mentioned the nitric acid, it was introduced with doubt and hesitation. See MATERIA MEDICA.

The cure of salivation will, in general, depend on its causes. Of mercurial salivation we shall afterwards speak at some length; but this discharge from other causes is chiefly relieved by tonics, with astringent gargles. The latter should, however, be employed with caution, for many inconveniencies are recorded to have arisen from hastily suppressing the discharge. (Sylvester's Medical Observations and Inquiries, iii. 241). Yet these relate rather to what we may style the more acute salivation from mercury: the more chronic kind, from debility, is not so easily suppressed. It often continues for the whole life, without any change, notwithstanding the most active astringents are employed. The chief vicarious evacuation is that by urine.

Mercurial salivation is chiefly used in LUES, q. v. but sometimes for other complaints, particularly obstructions of the liver, and lepra. In the two latter it is seldom carried far; and in the first the discharge is now comparatively slight. It is of little importance by what preparation it is excited, if of sufficient activity to increase the salivary secretion without injuring the stomach or irritating the bowels. Each practitioner has his favourite form, and each may be indulged. In general, mercurial ointment rubbed in externally is the safest; and calomel or mercury, divided by mucilaginous or fatty fluids, are the most general internal preparations; perhaps inferior to none. The practice of rubbing the calomel into the gums and fauces originated with Mr. Clare, not "Mr. Cline," to whom, by a typographical error, it was attributed in the article "LUES." He applies it also under the prepuce and within the labia, by which he thinks the cure is expedited.

Mr. Cruikshank, in an Appendix to Mr. Clare's publication, observes, that there is no doubt of the absorption of a fine powder taking place on the inside of the mouth, of the præputium, of the labia, &c.; for the particles of the blood, seen in the simple microscope, are at least ten times larger than those of the levigated calomel, yet the absorbents are often turgid with red blood. The particles of quicksilver in the best prepared mercurial ointment, appear in the same microscope as distinct from each other as the red globules of the blood; yet they are very readily taken up by the absorbents of the skin. Mr. Hunter hath frequently directed calomel to be rubbed on the skin with the volatile liniment, and it has been followed by the effects of the unguentum hydrargyri. The inside of the cheek is a better absorbing surface than perhaps any other accessible to friction in the body; and probably calomel becomes milder in its operation this way, as the divided quicksilver becomes milder when absorbed by the skin. It is also a less tedious, less laborious process than that of rubbing the unguentum hydrargyri. These are undoubtedly advantages; yet they may be considered as affording a favourable view of the comparative merits of the two preparations. The friction is by no means so easy as is represented; and we have heard that it has been followed by troublesome sores in the mouth. But by whatever preparation salivation is excited, the medicine should be slowly accumulated, unless when employed in the urgent cases of hydrocephalus, hydrophobia, croop, &c. When used in lues, a warm bath may be used two or three times before the unguentum hydrargyri; and the patient, during its use, should be kept in a warm room, wear a flannel shirt, having previously lived on a low diet for a few days. Except in strong constitutions, from a pint to a quart is a sufficient discharge of the saliva in twenty-four hours. The patient's strength should be supported with a light, nourishing, and mucilaginous diet; and, if faint, a little wine whey, or mulled wine, may be allowed.

The quantity of mercury necessary to excite salivation differs greatly in different circumstances and constitutions. In debilitated, scorbutic, and perhaps scrofulous habits, we have found three grains of calomel given in the dose, or one grain on three succeeding nights induce the discharge. It has been brought on by sprinkling precipitate on a wound (Hildanus); by a mercurial injection in a fistula; by a mercurial girdle; and the mercurial ointment employed to kill lice. In these cases, the idiosyncracy of the patient seems to influence the effect; and, therefore, this should be, if possible, ascertained before mercury is exhibited in any considerable quantity. The inflammation which this medicine induces is rather erysipelatous than phlegmonic, and it sometimes attacks the inside of the cheeks, producing small, irritable, creeping ulcers, with a very slight or no affection of the gums. The latter are, however, most commonly inflamed.

It is usual at present to produce this discharge in a very moderate degree; but some action on the gums is necessary, to show that the medicine has been introduced into the system. This is particularly the case in lues and chronic inflammations of the liver. In other complaints it is less essential if the symptoms disappear. The effectual relief of these is the only certain criterion by which we are taught to leave off the medicine, and it will be prudent to continue it for some time

after these have disappeared. On omitting the mercury the salivation gradually subsides.

The discharge of saliva is, however, sometimes too violent, or it continues long after the symptoms have disappeared, from the increased irritability induced by excess of excitement. This increased discharge is obviated by purgative medicines, by opium, and by sulphur. If any mercury remains in the system, these will sometimes relieve; but if so long a period has elapsed that we may suppose the whole discharged, the cure must rest on the general indication of increased irritability from debility. The medicines just mentioned are not all of equal efficacy. Mr. Hunter thinks purgatives useless; and we certainly have not found them highly beneficial, though sometimes they lessen the discharge. Opium we have thought highly useful, particularly in the form of Dover's powder. Sulphur is known to lessen the activity of mercury out of the body; and as it enters the circulation with little change, it may have the same effect in the circulating system. But this, like other finely-spun theories, deceives us in practice. Sulphur is by no means highly useful in these circumstances. Diuretics, which seem to excite what appears to be a vicarious discharge, have not been tried, or, if employed, not effectual. We believe every practitioner, by the means mentioned, has been able to mitigate salivation; but by no remedies, in every instance, to conquer it wholly.

See Hunter, Swediaur, Bell, and Howard on the Venereal Disease; Stahl de Salivatione Mercuriali et Alberti de Hydrargyrosi.

SA'LIX, (from the Hebrew term *sala*). *Itea*, the COMMON WHITE or the DUTCH WILLOW TREE; *salix fragilis* Lin. Sp. Pl. 1443, is distinguished by its oblong, pointed, serrated leaves, hoary on both sides, though most so on the lower, and in the branches being tough. See Raii Hist. Plant. Philos. Trans. 1763.

The bark of the branches of this tree is considerably bitter and astringent; and has been recommended not only in intermittents, but in all those cases which require tonics and astringents. Dr. Cullen thinks it a promising substitute for the bark; and we have found it equally useful in dyspepsia, profluvia, and every case of chronic weakness. His experiments were made with the bark of the salix pentandria, which in Bergius' hands failed to relieve intermittent fevers.

SALLADS, (*à sale*). The term is derived from the salt, an ingredient which enters in the smallest proportion. This species of vegetable nutriment consists of vegetables, undressed, either etiolated ones, thus deprived of their acrimony, as endives and celery, or of the tetradynamiæ, whose seed leaves are only employed, or the others in their earliest periods. We eat in their natural state chiefly the lettuce, the lamb's lettuce, and the water-cresses. With all we usually mix vinegar, and oil united with the vinegar by means of the yolk of an egg. The reason for employing oil we have not heard; but have suspected it to have arisen from the apprehension of the accidental mixture of poisonous plants, and the egg is added to combine it with the vinegar. In general, sallads are wholesome, but not admissible in cold, flatulent stomachs; though, in these, the water-cresses seldom produce any inconvenience.

SALPI'NGO-PHARYNGÆ'US, (from σαλπιγξ, *a trumpet*, and φαρυγξ, *the pharynx*), rises near the Eustachian tube, and is inserted into the pharynx. Valsalva and Douglas think it one of the origins of the muscle of the pharynx. See PHARYNX.

SALPIN'GO-STAPHYLI'NUS, (from σαλπιγξ, and σταφυλη, *the uvula*), arises fleshy from the bony part of the tube of the ear, and is inserted into the basis of the uvula with that on the other side. They draw the uvula upward and backward.

SALPI'NGO-STAPHYLINUS INTERNUS. See PETRO SALPINGO STAPHYLINI.

SALSAPARI'LLA. See SARSAPARILLA.

SALSO'LA. See KALI.

SALUTA'RIS DI'GITUS. See DIGITUS.

SALVATE'LLA VE'NA, (from *salus*, *health*, from the supposed salutary effects of opening this vein in melancholy), *splenitis*, runs on the back of the hand, from the little finger and that next to it. It has been said to proceed from betwixt the thumb and the fore-finger, and to run up to the ulna.

SA'LVIA, *salvus*, (from its salutary effects, which were formerly supposed to be so considerable as to justify the axiom, "*Cur moriatur homo cui salvia crescit in horto*"). SAGE, *elelisphacos*, is a low shrubby plant, with square stalks, obtuse, wrinkled, dry leaves, and large blueish flowers, fixed on loose spikes on the tops of the branches. It is a native of the southern parts of Europe, but bears the cold of our climate, and flowers in May and June. Its seeds are called *ebel*.

SA'LVIA BO'SCI. WILD or WOOD-SAGE, from *boscus*, *a wood* where it grows.

SA'LVIA ÆTHI'OPIS. See ÆTHIOPIS.

SA'LVIA HO'RMINUM. See HORMINUM.

SA'LVIA MA'JOR. GREATER or COMMON GARDEN-SAGE, *salvia officinalis*, Lin. Sp. Pl. 34. The leaves are nearly oval, but pointed; of a green, red, or variegated colour; but all are found on the same plant. The leaves are moderately aromatic, and used in debilities and relaxations both of the nervous and muscular system, as a stimulant, carminative, and tonic. Their smell is strong, but not disagreeable; their taste warm, bitterish, and sub-astringent; with a solution of vitriolated iron they strike an inky blackness. This species is more agreeable, but not so strong as the lesser sage; the flowers of both are weaker, but more agreeable than their leaves. The best preparations are, the watery infusion, and a tincture or extract made with rectified spirit of wine, which contain the whole virtue of the plant. The watery infusion, acidulated with the juice of lemon or of orange, is an agreeable common drink in fevers. From ℥ss. to ℥i. of a conserve made with sage leaves is said to cure weak stomachs, if repeated twice a day. (See SALVIA MINOR.) By distillation with water a small quantity of essential oil is obtained, which possesses only the aromatic part of the herb. See Tournefort and Lewis's Materia Medica.

SA'LVIA MI'NOR, *salvia virtutis*. LESSER SAGE, *salvia minor aurita*, and *non aurita*, of Caspar Bauhine; *s. officinalis*, β. Linnæi. Its leaves are narrower than those of the greater sage, whitish, and never red; they are stronger, but less agreeable; though in other respects the same.

Sage has been much employed as a sudorific, for preventing the recurrence of intermittent paroxysms, for restraining colliquative sweats, infused in spirits, or wine (Van Swieten), and the milk of nurses who had

weaned their child: it is also supposed to resist putrefaction. Cullen's Materia Medica See SALVIA MAJOR.

SA'LVIA SYLVE'STRIS, *scorodonia, scordotis, chamædrys fruticosa*, GERMANDER-SAGE, WOOD-SAGE. *Teucrium scorodonia* Lin. Sp. Pl. 789, grows in woods and hedges. In smell, taste, and medical virtues, it resembles the scordium rather than the sage; but is less disagreeable than the former, though more so than the latter.

Among the reputed species of sage is the phlomis, or yellow sage, *phlomis fruticosa*, β. Lin. Sp. Pl. 818, which is astringent and vulnerary.

SAMBU'CUS, (from the Hebrew, *sabuca, a musical instrument made of this tree*): *acte, infelix lignum*, COMMON ELDER. *Sambucus nigra* Lin. Sp. Pl. 385. COMMON BLACK-BERRIED ELDER, is a tree or shrub whose branches are full of fungi covered with an ash-coloured, under which lies a thinner green, bark, and below a white one. It flowers in May, and ripens its berries in September.

The young leaves, when budding, are said to be cathartic; but the parts employed medicinally are the inner bark, flowers, and berries. The first has little smell or taste: on first chewing it impresses a degree of sweetishness, followed by a very slight though durable acrimony, in which its powers seem to reside, and which it imparts both to watery and spirituous menstrua. Sydenham directs three handfuls of the inner bark to be boiled in a quart of milk and water to a pint, half of which is to be drank every night and morning, and repeated for several days: it operates upward and downward; and upon the evacuations its utility depends. Boerhaave gave its expressed juice from ℥i. to half an ounce for a similar purpose. In smaller doses it is said to be an aperient and deobstruent in various chronical disorders. These effects are sometimes confined to the ebulus, or dwarf elder; but both have been used without any remarkable advantage. An infusion of the fresh flowers is gently laxative, and of the dried ones diaphoretic, and consequently useful in eruptive disorders. Externally they are employed in fomentations, &c. The London college orders the following *unguentum sambuci*. ℞. Florum sambuci p. ℔iv. sevi ovilli p. ℔iii. olei olivæ m. ℔i. decoque flores in sevo et oleo donec friabiles sint, deinde exprime & cola. The juice of the berries, when inspissated to a rob, is styled a dissolvent and aperient: it is gently laxative, promotes urine or perspiration, and is recommended in dyspepsia, and debility of the urinary passages, in doses of from one to two or three drams. See Lewis's Materia Medica; Anatomia Sambuci per M. Blockwitz; Sydenham's Works.

SAMBU'CUS E'BULUS; HERBACEA; and HUMILIS. See EBULUS.

SAMBU'CUS SANAMU'NDA. See EMPETRUM THYMALI FOLIIS.

SAMIEL. A poisonous wind in the desert of Arabia, which kills without any apparent change on the body, except a total privation of irritability, and sometimes a distension of the blood-vessels, and extravasation of their contents. It comes from the north-west quarter, announced by a haze in that direction; but the rest of the atmosphere is clear. The samiel seems to be a blast of hydrogeneous gas, the source of which we shall afterwards explain. See SIMOON.

SAMP. A preparation of indian corn, in which the hard coat is first separated by maceration in an alkaline ley, and the grain is next softened by long-continued simmering, in a temperature below the boiling point. It is then said to be a palatable food, with some common condiments, and to supply very effectually the place of bread. It is chiefly used by the Aborigines of America, in the back settlements, both north and south.

SAMPHIRE. The *crythmum maritimum* Lin. Sp. Pl. 354, *fœniculum maritimum* of Caspar Bauhine, is slightly aromatic, with a taste not unpleasant. It is sometimes used as a pot-herb, but is more commonly pickled, and taken as a condiment.

SA'MPSUCHUM, (from ψαω, *to preserve*, and ψυχη, *the mind*; on account of its cordial qualities). See ORIGANUM.

SA'MPSUCHUS. See MARUM and MAJORANA MAJ. FOL.

SA'NCTÆ HELE'NÆ RA'DIX. *Cyperus Americanus, cyperus longus* Lin. Sp. Pl. 67, is a long knotted root, black without, and white within: in taste it resembles the galangal root, and is brought from St. Helena, in the province of Florida, where it is used in pains of the stomach, and in nephritic complaints.

SA'NCTUM SEMEN. See SANTONICUM.

SANDARA'CHA. SANDARACH, (from the Arabic *saghad, narak*); a gummy resin, of a yellowish white colour, in small lumps, dry, brittle, of a pleasant smell, of a resinous and gently acrid taste; it is brought from Africa, and is the production of the *juniperus cedrus* Lin. Sp. Pl. 1471. See JUNIPERUS, and ARSENICUM, of which it is also an appellation.

SA'NDIVER. See AXUNGIA VITRI.

SANGUIFICATIO, (*sanguinem facere*). The animal process by which our fluids are converted into blood. We have seen that blood consists of a watery fluid, styled serum, gluten, fibrin, and the red portion, which in the microscope appear to be globular. The serum contains an ammoniacal salt, by which it seems to dissolve a portion of the gluten. The difference between this fluid and the nutriment taken in then apparently consists in the formation of gluten, of the salt, the fibrin, and the red globules. The nature of ammonia we well know; and, as its component parts are found in the system, it is not necessary to inquire anxiously into its source. The gluten, we have seen, differs probably from albumen in its proportion of azot, and the fibrin is a more animalised gluten. The source of the azot we have also attempted to investigate. (See NUTRITIO and RESPIRATIO.) Of the red globules we know little, and their source has not yet been explained. Mr. Hewson supposed them to be manufactured in the spleen, and certainly the red globules are peculiarly copious in this viscus; but admitting all the facts, we advance but little in our knowledge of the process of their manufacture.

The formation of the red globules is connected with the strength and vigour of the constitution; for in the cachectic state they are few, and their colour unusually pale. They are sometimes dissolved in the serum, and escape by every excretory. In other cases the whole of the circulating mass seems to be remarkably diminished; and Lieutaud and others have left us accounts of dissections, in which the circulating system

was found nearly exhausted of its usual contents. Unfortunately we have not been acquainted with the previous symptoms, an omission too common in the collections of that author.

SANGUIFLU'XUS, (from *sanguis, blood*, and *fluo, to flow*). See HÆMORRHAGIA.

SANGUINALIS and SANGUINARIA, (*a sanguine compescendo*). *Polygonum aviculare* Lin. Sp. Pl. 519. See POLYGONUM.

SA'NGUINIS INO'PIA. A tabes from loss of blood. An instance of the atrophia inanitorum of Cullen.

SA'NGUIS, (απο του σωζειν γυια; because it preserves the body); *dehene; hæma;* BLOOD, the fluid which is contained in the arteries and veins. See BLOOD.

SA'NGUIS DRACO'NIS; *cinnabaris Græcorum, dracontæma, asagen*, DRAGON'S BLOOD, is a resin of a red colour, obtained from the *calamus rotang* Lin. Sp. Pl. 463; *dracena draco* Wildenow, ii. 155, and *pterocarpus draco* Wildenow, iii. 904. The dragon's blood covers the fruit of each tree: one sort is in oval drops, wrapped up in flag-leaves; another in large masses, often impure, but sometimes little inferior to the former. Its colour is of a deep red, and when powdered, crimson. It readily melts and flames, almost totally dissolving by the help of heat in rectified spirit of wine, to which it imparts a dead red colour; soluble also in expressed oils; but yielding little or nothing to water. Dragon's blood has no remarkable smell or taste, though when dissolved it seems slightly acrid. The Dutch often adulterate it with mixtures of gum-arabic, Brazil wood, alum, &c. which dissolve in water, crackling without burning in the fire. It is recommended as a gentle incrassant, desiccative, and restringent, but owes its credit to its union with other astringents in the pulvis stypticus. It is totally inert, and now disused. Lewis's Materia Medica. See GUMMI RUBRUM ASTRINGENS GAMBIENSE.

SA'NGUIS DRACO'NIS HE'RBA. See LAPATHUM RUBRUM.

SA'NGUIS HERCULIS. See CROCUS.

SANGUI-SO'RBA, (from *sanguis*, and *sorbeo;* because it stops hæmorrhages). See PIMPINELLA.

SANGUI SU'GA, (from *sanguis*, and *sugo, to suck*). See HIRUDO.

SANI'CULA. SANICLE, (from *sanando, healing*); *cucullata, dodecatheon; symphytum petræum.*

SANI'CULA ALPI'NA LUTE'A. See AURICULA URSI.

SANI'CULA MAS, *diapensia, cortusa, sanicle*, SELF-HEAL, *sanicula Europæa* Lin. Sp. Pl. 339, is an umbelliferous plant, with shining, dark-green, roundish, serrated leaves: the seeds are rough, and stick to the clothes. The plant is perennial and evergreen, grows wild in woods, on hilly grounds, and flowers in May. It is mildly astringent, is slightly rough, and bitter to the taste, with an acrimony which chiefly affects the throat. Both the watery and spirituous extracts retain its virtues.

SANI'CULA EBORACE'NSIS, *pinguicula, sanicula montana* flore calcari donata, *viola palustris*, BUTTERWORT, YORKSHIRE SANICLE, *pinguicula vulgaris* Lin. Sp. Pl. 25, is a small plant, with a few glossy unctuous leaves which lie on the ground; perennial, grows in elevated marshy grounds, and flowers in spring. Its unctuous glutinous juice is used as a liniment for chaps, and as a pomatum for the hair: it is said also to be purgative, but none of the species are used in general practice.

SANI'CULA FŒMINA, See IMPERATORIA NIGRA.

SANIDO'DES, SANIO'DES, (σανιδος, the genitive case of σανις, *a flat table*). FLAT-CHESTED.

SA'NIES, (*quod ex sanguine corrupto nascitur*). See ICHOR.

SANKI'RA. See CHINA ORIENTALIS.

SA'NTALUM, (from the Arabic, *Zandal*). SAUNDERS.

SA'NTALUM A'LBUM, WHITE SAUNDERS, is similar to the yellow, but so weak that it is now neglected. The *santalum citrinum, santalum album* Lin., is the medullary part of the same tree, of which the *santalum album* is the *alburnum*, or outward sappy part. See ALBURNUM.

SA'NTALUM CITRI'NUM, vel PALLIDUM, YELLOW SAUNDERS, *santalum album* Lin. Sp. Pl. 497, is a pale yellowish or brownish coloured wood, with a close even grain, an agreeable smell, and a bitterish aromatic taste, accompanied with a slight pungency. Distilled with water, it affords an oil which thickens into the consistence of a balsam, and smells like ambergrise, leaving the remaining decoction bitterish. Rectified spirit extracts more than water; and an extract from this tincture is six times stronger than the wood itself. Hoffmann says its virtues are similar to those of ambergrise; but he has apparently been too extravagant in his praises.

SA'NTALUM RU'BRUM. RED SAUNDERS, *pterocarpus santolinus*, Wildenow iii. 906, is of a dull red colour, with little or no smell, or taste; chiefly used as a colouring drug, tinging water with a yellowish hue, and rectified spirit with a deep red; but not dissolving in expressed oil. It is said to be an astringent, probably from its being the product of a species of the genus which affords the SANGUIS DRACONIS, q. v. See Lewis's Materia Medica.

SA'NTALUS ADULTERI'NUS,. See BRASILIUM LIGNUM.

SANTE'RNA, *senin-nitra*, Chald. See BORAX.

SANTOLI'NA, (because it smells like saunders). See SANTONICUM.

SANTOLI'NA, CHAMÆCYPARI'SSUS. See ABROTANUM.

SANTO'NICUM, (from *Santonia*, its native place), *sanctum cinæ & zedoariæ, semen contra vermes, lumbricorum semen, sementina, santolina*, WORM-SEED, from the *artemisia santonica* Lin. Sp. Pl. 1183, is a small, light, oval seed, of a yellowish green colour, with a cast of brown; easily friable; brought from the Levant, usually mixed with bits of sticks and leaves. These seeds yield their virtue to water and to spirit; but the spirituous infusion is the most agreeable. In evaporating the watery infusion, only a simple bitter remains. They are seldom genuine, but mixed with the seeds of southernwood; and when good are full, of a greenish colour, strong smell, a bitter and aromatic or rather a subacrid taste. They are esteemed to be *stomachic, emmenagogue*, and *anthelmintic;* but are chiefly used to destroy and expel worms, from which their appellation is derived. For adults, the dose is from one to two drams of the powder, twice a day.

As a bitter, the watery extract is esteemed the best preparation; but as an anthelmintic, the spirituous extract is preferable. For children, a syrup is made of the infusion, and administered in this form. See Lewis's Materia Medica; Neumann's Chemical Works.

SA'PA, (from its pleasant taste); *apochilisma, succago, robub, rob*, and *Œnus Siræos*; the juice of any vegetable boiled up with sugar to the consistence of honey. See EXTRACTIO.

SAPHÆ'NA VE'NA MA'JOR, (from σαφης, *visible*). About an inch below the passage of the cruralis from out of the abdomen, it sends off a large branch, called *saphena*, in its whole course to the foot only covered with the integument. It follows the direction of the sartorius muscle, until it arrives at the inner condyle of the thigh bone; then runs on the inside of the tibia, sending off branches as it passes along; and at the lower part of the tibia a branch which runs over the joint of the tarsus to the outer ankle. The extremity of the saphena passes on the fore-side of the inner ankle, and runs betwixt the first two metatarsal bones, towards the great toe. See CRURALIS VENA.

SAPHÆ'NA MI'NOR VE'NA, is a branch from the saphena major, which separates from it soon after passing from the inguen; and runs down below the ham, communicating with the saphena major. Another branch, which proceeds from the cruralis a little above the ham, and runs to the outer ankle, is called *saphena externa*.

SA'PHERA. See COBALTUM.

SAPIE'NTIÆ DENTES, (because they do not appear till the age of wisdom); *cranteres, genuini dentes*; the last of the molares, which sometimes do not appear till the twenty-sixth year; in a few instances not at all. See DENS.

SAPIE'NTIÆ OLEUM. See LATER.

SA'PO, (from the Hebrew *sapon*), SOAP, *asabon*, is a composition of oils and fats, with alkaline salts, incorporated into a milky semi-transparent liquid.

From the principles of this combination the union of every oil with alkaline salts is styled a soap, and the term has been extended to the combination of resins, not only with oil, but with salts of every kind. In the Boerhaavian school saponaceous fluids have been discovered in a variety of plants, and these have been styled resolvents, detergents, and deobstruents. In fact, Boerhaave, overlooking the strictness of chemical combination, has transferred the term to milky fluids, to combinations of oil with water by means of mucilage; while modern chemists have, by a similar laxity of language, styled the extractive matter saponaceous. We shall adopt the term in all its chemical strictness, and consider soap as the union of oil with salts, whether alkaline or acid. We thus exclude spermaceti, milk, chyle, the blood, and even bile.

Soap, in its strictest sense, is a white, solid, insipid substance, soluble in water, precipitated by acids, and by neutrals, whether saline, earthy, or metallic; and from this definition the acid soaps are only excluded, which perhaps scarcely merit the appellation. The purest and most perfect soap is made from olive-oil and soda; but there are numerous shades of the less perfect material. Potash we know to have a strong affinity to water, and the soap formed by its means is less solid and granular, until the water is carried off by common salt, and in some manufactories by alum. The alkali in each case must be pure, in the language of the old school, caustic. Various oily substances have been employed, as olive-oil, animal fats, rancid butter, rape, poppy, and cole-seed; beech-mast, hemp, and lintseed; horse and whale oil. The seven last oily matters seldom afford soap of a firm consistence. In general equal parts of the alkali and oil are necessary; but in the large way, about eighty parts of the salt are sufficient for one hundred of oil. The addition of common salt has been said to harden the soap by abstracting the water; but it has less affinity to water than the alkali has, though probably greater than the united alkali and oil. The idea of Pelletier is, however, more probable, that a double decomposition takes place, and that the soda of the common salt displaces the potash, while the muriat of potash escapes in the ley. At all events, supposing the common salt to remain, its proportion is not more than two-elevenths of the whole, in the best conducted manufactories. The remaining ley is carbonated, and on that account probably effete and useless; though Pelletier endeavours to prove, that some carbonic acid is necessary to the production of soap. In this he seems to have refined too far: the truth lies nearer the surface.

The other chemical qualities of soap are its absorbing a large quantity of water, and swelling when wetted. Its solution is of a yellowish-grey colour, forming frothy iridescent bubbles. It is more soluble in hot than in cold water, and in dry places remains for years unaltered. In moist situations the alkali separates, and, if soda has been employed, effloresces on the surface. When distilled, the oil first rises in tolerable purity; but at the end is fetid. Soap is less perfectly soluble in alcohol. When an acid, which first separates the oil from alkaline soaps, is added in excess, an acid soap is formed; but the latter union is so slight as to be destroyed by a boiling heat. When a solution is curdled by earths, particularly by lime, barytic, or strontian water, the oil unites with the respective earth. The precipitate formed by lime, or rather the union between the lime and oil, for the earth seems to have a stronger affinity for oil than the alkali, is decomposed only by a carbonated alkali, in consequence of the powerful attraction of the lime for the carbonic acid, which weakens its affinity for the oil. A carbonated ammonia has the same effect, and produces an *ammoniacal soap*, which is more pungent than common soap, and more soluble in alcohol than in water. This soap is made also by adding muriated ammonia to common soap; but in every mode of compounding it the union of the salt and oil is weak, and the soap never hardens. M. Berthollet, in the Memoirs of the Royal Academy for 1780, has examined the properties of the different compounds, formed by precipitating the oil in soap by earths or metals. They are of various colours, more or less cohesive, and generally soft, except when acetite of lead is employed; and we know from the former observations (see EMPLASTRA) that oxides of lead have a powerful attraction for oil. The result of the experiment with this metallic salt is, of course, the diachylon. Some of the oleo-metallic compounds are dissolved by alcohol without heat; others require its assistance. Expressed oils do not dissolve the oleo-calcare-

ous or aluminous compounds. We must not pursue a subject wholly chemical; but may express a wish that the medical effects of the oleo-metallic compounds might be cautiously tried.

In a *medicinal view*, though we detract from the warm commendations of the Boerhaavians, we shall find soap highly useful. As a compound it appears to be a demulcent and a laxative. Dr. Cullen attributed the latter quality to the common salt which it contains; but this is in a very inconsiderable portion, as we have already remarked, and it is highly probable that it escapes with the water; for a very small proportion of salt will prevent soap from dissolving. In the barilla soaps also no muriated soda is employed. The laxative power of soap most probably arises from the union of its ingredients, since it is efficacious in clysters, where there is little probability of its being decomposed, and no time for the decomposition to take place. As a demulcent it is employed in catarrhs and peripneumonies, in diseases from acrid poisons, as well as in diarrhœas and dysenteries. We have already remarked that we can scarcely suppose it to reach the bronchial glands without decomposition; yet that observation supplies some evidence of its demulcent powers even in the secretions of the bronchiæ, though similar effects may arise from the oil. When acrid poisons have been swallowed, soap is highly useful, to sheath the very sensible coat of the stomach, and often by its alkali either to decompound or neutralise the deleterious substance. (See VENENUM.) In old diarrhœas, where the villous coat of the intestines is preternaturally sensible, in consequence of being deprived of its mucus, the laxative power of the soap must be corrected, either by opium, by uniting it with wax, or by both: in dysenteries it has also been a custom to combine it with opium or astringents. Soap is supposed to have an anthelmintic power from the oil which it contains, as every oily matter is supposed to destroy worms, by closing their spiracula. This power is, however, equivocal; and if it has any effect of this kind it is on ascarides, when injected in the form of a clyster.

According to Bergius, and some very respectable followers of Boerhaave, soap is an aperient, a resolvent, and a detergent, useful in obstructions of every kind, particularly in those of the chylopoetic viscera. In different parts of this work we have found it difficult to affix any precise ideas to these words, except that obstructions are relieved by gentle laxatives. Soap is one of these; but there is no reason to think it more useful than small doses of rhubarb, of neutral salts, or the saline mineral waters.

While speaking of it as a compound, we have been unavoidably led to notice the effects of its oleaginous ingredient. It is, therefore, only necessary now to observe, that its alkali is often highly useful as a dissolvent of calculi in the bladder; and the quantity introduced into the system, defended by the oil, is more considerable than can be taken in any other form. When the pure alkali is given in veal broth, a similar compound is formed, though not strictly saponaceous. It has been supposed that the alkali is equally effectual in dissolving biliary calculi; but experience has not confirmed the eager expectations of those who anxiously sought in this remedy a very general solvent. Among other fancies of this kind it has been given in cases where an imaginary pituita prevailed in the blood, to children where the croop was supposed to be hereditary, and where mucous discharges were frequent. The most rational of these views seems to have been to dissolve the heavy viscid mucus of the stomach, which is sometimes highly troublesome, resisting every attempt to remove it, except by vomiting. In this case also, for it is a fancy we have indulged, it has appeared useless.

Soap is used as an intermede for mixing different oily fluids; but is in this respect inferior to the pure alkali, or even mucilage. It is, however, a convenient substance for forming pills; and as it promotes the solubility of wax, is an essential ingredient in the exhibition of the latter. In employing it, however, for pills, its levity must be attended to, or they will be otherwise too large; but, in general, soap will combine with an equal quantity of any resinous powder, as rhubarb, or jalap; and will advantageously unite with an equal quantity of wax.

Acid soaps are unknown in medicine. Sulphuric acid, in nearly an equal proportion, added to oil, by slow degrees, resembles in appearance tar; but, when well washed, it is like brown wax, specifically heavier than water, solid, and brittle, soluble in alcohol, uniting with water, and forming a whitish fluid (Journal de Physique, xvi. 411). A pure alkali, magnesia, chalk, oxide of lead, filings of iron, and zinc, as well as many saline, earthy, and metallic neutrals, form a coagulum, which resembles in appearance and properties wax. Nitrous vapour and oxymuriatic acid produce a similar change. Oxymuriat of potash, with a little oil, forms a soap, which explodes by a slight stroke.

Ammoniacal soaps we have already mentioned. These are employed medicinally as external stimulants. The volatile liniment, as it was formerly styled, is an instance of this combination.

Essential oil soaps have been styled *Starkey's*, from their first inventor, or rather from the person who first introduced them. Starkey's process consisted merely in mixing dry carbonat of potash with oil of turpentine, by agitation every day for six months. Baume has refined the process, and directed the oil to be rubbed in the proportion of thrice its weight with the potash. When mixed to the consistence of a soft extract, it is suffered to deliquesce, at rest, in damp air. The alkali united with water falls to the bottom, the uncombined oil rises to the top, and the soap occupies the middle of the cucurbit. It is separated by filtering. It has been employed in medicine; but apparently merits little attention. The saponaceous liniments chiefly consist of essential oils combined with soap. The eau de luce is of this kind.

Black soaps are generally soft; composed of an impure alkali and train or whale oil. They are useful in forming stimulant cataplasms, with more active rubefacients, and sometimes peculiarly active in clysters, though in this form they produce often sickness and general disorders of the system.

SA'PO A'LBUS; *sapo Hispanicus*, HARD, or SPANISH SOAP, is made in Spain, with olive oil and the Spanish barilla, by a process similar to that directed for the soap of almonds.

SAPONA'RIA, (from *sapo*, *soap*). *Struthium, lanaria, lychnis sylvestris, ibixuma*, BRUISE-WORT, SOAPWORT, *saponaria officinalis*, Lin. Sp. Pl. 584, is a smooth herb, with leaves resembling the plantane, and

clusters of red, purple, and whitish flowers; the root is long, slender, spreading to a great distance, of a brownish colour on the outside, and white within, with a yellowish fibre in the middle. It grows in moist grounds, and flowers in July.

The plant is called *saponaria*, because its juice, like soap, cleans clothes. The roots and leaves are glutinous and sweet to the taste, but in the roots there is also a slight pungency, and in the leaves a bitterishness. The soapy matter dissolves either in water or in spirit of wine. The Germans prefer the root to the sarsaparilla. Andry gave its inspissated juice with success in gonorrhœa, in the dose of half an ounce daily; and in general the cure was effected in about a fortnight, without the assistance of any other remedy. Segy orders from two to four pints of the decoction to be daily taken in lues; and, in bad cases, the patient takes at the same time the plant in powder, or in the form of an extract. This is said to be advantageous in venereal, scrofulous, and impetiginous affections; in visceral obstructions and jaundice. This plant is also applied externally to venereal ulcers, either in fomentation, or in a dry form, by sprinkling it in powder over the sores. Two ounces of the root yielded eleven drams of watery extract; but this quantity seems to be variable. It is sweetish, followed by some pungency. The spirituous extract is less in quantity, but more pungent. Decoctions, the extract, and even the leaves, resemble in appearance and quality solutions of soap: they have even been used for the same purposes. See Lewis's Materia Medica; Neumann's Chemical Works.

SAPONA'RIÆ NU'CULÆ, *baccæ Bermudenses*, vel *Bermudæ*. SOAP OR BERMUDAS BERRIES; a spherical fruit about the size of a cherry, from the *sapindus saponaria* Lin. Sp. Pl. 526. The cortical part is yellow, glossy, and so transparent as to shew the spheres which rattle within, and includes a white kernel. It is the produce of a small tree in Jamaica, and other parts of the West Indies: the kernel, when steeped in water, raises a froth like soap-suds.

These berries are supposed to be powerful in removing obstructions in the liver and spleen; in relieving cachexy, dyspepsia, and chlorosis. The best preparations are, a tincture made with white wine, or spirit, and the extract from the spirituous tincture. See Lewis's Materia Medica; Medical Museum, vol. iii. p. 538.

SAPONIS CERATUM. See PLUMBUM.

SAPOTA. The fruit of the *achras sapota* Lin. Sp. Pl. 470, which is highly luscious, resembling marmalade. It is a native of South America; and its seeds have been used as demulcents.

SA'PPAN LI'GNUM. See CAMPECHENSE LIGNUM.

SAPPHIRI'NA A'QUA, (from its colour). See CUPRI AMMONIATI AQUA.

SA'PROS, (from σηπω, *to putrefy*). See MORTIFICATIO.

SA'RA. See ESSERA.

SARA'SSAS. See CORALDODENDRON.

SARCOCE'LE, (from σαρξ, *flesh*, and κηλη, *a tumour*), is a firm enlargement of the testicle, differing in the resistance it affords to the finger, and sometimes degenerating into a schirrous hardness. The sarcocele, or hernia carnosa, according to Mr. Pott, in a general sense, means any induration or diseased flesh, though in this case confined to the testicle; adding that the sarcocele, distinguished by the ancient writers into the sarcocele, the hydrosarcocele, the schirrus, the cancer, the caro adnata ad testem, and the caro adnata ad vasa, are really little more than descriptions of different states and circumstances of the same disease. The caro adnata ad testem is a schirrus beginning in the epididymis; the caro adnata ad vasa a schirrus of the epididymis somewhat increased, apparently springing from the spermatic vessels. In the hydro-sarcocele the testicle is enlarged and hardened; or rather it is both schirrous and dropsical. (See Pott's Works, 4to.) The sarcocele is indisputably a disease of the body of the testicle, from which it resembles a hard fleshy substance, instead of its natural soft vascular texture. Its more favourable appearances often continue without change for many years, while in others the disease quickly passes through its different stages. Sometimes the first appearance is a mere simple enlargement and induration of the body of the testicle, without pain or inequality of surface, producing no uneasiness nor inconvenience, except what is occasioned by its weight. In a few instances it remains in this state for a considerable time, without visible alteration; but in others, soon after its appearance in this mild manner, it suddenly becomes unequal and knotty, is attended with very acute pains, darting up to the loins and back; but the integuments continue entire. In short, such is the variety of the appearances of this disease, that description can hardly afford an adequate idea of it. Sometimes the disorder seems to be merely local, at others there is a pallid or leaden countenance, indigestion, nausea, colic pains, sudden diarrhœa, &c. sufficiently indicating a vitiated habit and diseased viscera. Its progress also from the testis upward is very uncertain; the disease affecting the spermatic process, in some subjects, for a long time; while, in others, it injures the testicle very soon, and almost as soon seizes the spermatic cord. The testicle sometimes enlarges to an enormous size, and this is not an uncommon disease among negroes. In the Philosophical Transactions for 1783 it is said to have extended to the weight of fifty pounds. The sarcocele has been said to affect the right rather than the left side, and small bones are sometimes said to be found in the tumour.

Amongst the mistaken causes of a schirrous testicle, Mr. Pott reckons the *hernia humoralis*; not that a sarcocele never follows an hernia humoralis, but that it does not necessarily produce it. Mr. Bell observes that a hardened state of the testis and epididymis, produced originally by a venereal taint, in some instances degenerates into the worst species of sarcocele. In general, however, the hernia humoralis is one of the diseases which should be distinguished from the sarcocele. A quantity of water is sometimes collected in the vaginal coat of a schirrous testis, and it has been erroneously supposed that this water renders the testis schirrous. This, however, is not the case.

The only remedy from which any advantage can be expected is the removal of the diseased parts by extirpation. But before the operation is attempted, the cause of the sarcocele and the state of the spermatic cord from the ring to the testicle are objects of necessary consideration. When it proceeds from a blow on the part, the operation will be more successful than when caused by cancer or struma; when either of these last is the cause, they will generally be found to exist also

on other parts; therefore though the diseased testicle be removed, the cause will remain, and again appear in other organs. In strumous habits the glands of the mesentery, the lymphatics, &c. are generally obstructed; therefore external applications are useless, and proper internal medicines must be employed: in children this disorder seldom occurs without an enlarged belly, which, before any further attempts are made, must be lessened.

Of the internal medicines, mercury, hemlock, and sulphur, have been principally recommended. The balsam of sulphur was the favourite remedy of Rulandus; but to neither does the disease usually yield. The external application of mercury is more successful, and the mercurial friction has occasionally removed it. Cavillini apparently succeeded with the cold stillicidium, alternated with a cataplasm of bean flour, and Schultetus with a plaster of gum ammoniac. The actual cautery, and the subsequent discharge from the separation of the escar, is sometimes recommended; but, in general, extirpation is the only successful method.

It is usually remarked that if the spermatic cord is soft, and of its natural size, castration may be safely performed; but if much enlarged, that the operation is not advisable. This is not strictly true; for the spermatic cord may be enlarged by varices, or by effusion, neither of which contra-indicate the operation; but when the feel is irregular and knotted, when lancinating pains shoot upward or downward, and the unequal hardness is too high to admit the ligature above it, the operation will be useless or dangerous.

The use of the knife is sometimes deferred till darting pains come on in the loins or testicles. This may not be wholly improper; but, when these appear, the operation should be no longer delayed; for a local schirrus will soon affect the constitution, and indeed when the countenance becomes of a leaden colour, the evening exacerbation strongly marked, with morning perspirations, it is often too late to attempt it. Yet it is a last resource, and, even in these circumstances, will sometimes succeed.

After a venereal gonorrhœa, improperly treated, Dr. Swediar observes, that one or both testicles sometimes grow hard. In a few instances the disorder is accompanied with a sensation of a painful pressure; but is frequently without any pain. He adds, that, in these cases, mercury given internally, or rubbed externally into the perinæum and scrotum, twice a day, with the constant application of a warm poultice made of the root of the *atropa mandagora*, &c. are often useful. Cicuta, applied internally and externally, may perhaps be tried, with prospect of advantage; and an emetic has been sometimes found effectual. The decoction of the mezereum, internally, with a poultice of it externally, has lately been recommended; but these swellings usually remain unaffected, except the discharge from the urethra is restored, which has sometimes been effected by a recent infection, or, according to Swediar, by a gonorrhœal inoculation. When a hardness of the testicles does not yield to the means commonly employed, such as moderate evacuations of blood, when these are indicated, a soft easy diet, a lax belly, the use of a suspensory bandage, and especially when mercury, which, on the chance of the disorder being venereal, is very commonly tried, are all used without any effect; we may, according to Bell, suspect that the disease is of a malignant nature: when more inveterate symptoms come on, and the disorder, from the state of an indolent hard tumour, becomes painful, castration must be attempted. See Sharp's Operations; Pott's Chirurgical Works; Bell's Surgery, vol. i. p. 498; London Medical Journal, vol. v. p. 32; Edinburgh Medical Commentaries, vol. ix. p. 335; White's Surgery, p. 335; Heister de Hernia Carnosa; Warner's Account of the Testicles; Morgagni de Sedibus, &c. xliii. 38, &c.; Pohl de Herniis et Sarcocele.

SARCOCO'LLA, (σαρξ, *flesh*, and κολλαω, *to glue together*, from its supposed power of conglutinating wounds), is a gummy resinous juice, from the *penæa mucronata* or *sarcocolla* Lin. Sp. Pl. 162, brought from Persia and Arabia, in small spongy grains of a whitish yellow, sometimes of a deep red colour, about the size of a pea: the whitest and most bitter are preferred. Its bitterish subacrid taste is followed by a slight sweetness; it softens in the mouth; bubbles and catches flame from a candle; dissolves freely in water, and in a large proportion in spirit of wine; but its medical qualities are inconsiderable. See Lewis's Materia Medica; Neumann's Chemistry.

SARCO CIRSOCE'LE. A combination of sarcoma with CIRSOCELE, q. v.

SARCO-EPIPLOCE'LE, (from σαρξ, *flesh*, επιπλοον, *omentum*, and κηλη, *tumour*). A compound rupture, consisting of a descent of the epiploon during the existence of a sarcocele. Sometimes a rupture of the indurated epiploon, either umbilical or scrotal.

SARCO-HYDROCE'LE. A combination of sarcoma with HYDROCELE, q. v.

SARCOLO'GIA, (from σαρξ, *flesh*, and λογος, *a discourse*). SARCOLOGY, including myology, splanchnology, angiology, neurology, and descriptions of the integuments.

SARCO'MA, (from σαρξ, *flesh*); a fleshy tumour on any part of the body; *porrus; sarcophya; nævus*). This adventitious soft substance is not contained in a cyst, and does not yield to the impression of a finger, nor is it moveable. Dr. Cullen styles it soft exturberation not painful. It sometimes arises from the sockets of the teeth, but most frequently from the labia pudendi, or the more internal parts. Extirpation is the only remedy; and if the basis be narrow, a ligature may be used; but if broad, the knife will be necessary. See Turner's Surgery, vol. i. p. 201. The name also for *polypus narium*.

SARCO'MPHALON, (from σαρξ, and ομφαλος, *the navel*). A fleshy excrescence at the navel.

SARCO'PHAGUM, (from σαρξ, and φαγω, *to eat*). See ASSIUS LAPIS.

SARCOPHY'IA, (from σαρξ, and φυω, *to grow*). See SARCOMA.

SARCO'TICA. SARCOTICS, (from σαρκοω, *to heal*). Medicines which generate flesh in wounds.

SARDIA'SIS, SARDO'NICUS RISUS, (from σαρδωνιη, an herb supposed to cause a convulsive laughter); *spasmus cynicus, gelasmus*, defined by Vogel an involuntary laughter, in which the mind is not elated with joy, but affected with pain, and often with anger. The sardonia is said to be a species of ranunculus. Ætius Tetrab. iv. serm. i. cap. 66. See RISUS.

SARPE'DO. See LICHEN.

SA'RSA, and SARSAPARI'LLA, (from *zarza, bramble*, and *parilla, a little vine*, Spanish), *carivillandi, iva pecanga, macapatli, smilax aspera Peruviana*, is brought from South America; the slenderer pale sort comes from New Spain, the dark and thick from Honduras, the darkest and thickest from Quito. That most esteemed is the smilax aspera Peruviana, C. B. *smilax sarsaparilla* Lin. Sp. Pl. 1459. VIRGINIAN IVY-LEAVED ROUGH BIND-WEED, light, white within, but not easily powdered. The root consists of a number of strings, as thick as a goose-quill, flexible, free from knots, and composed of fibres, which run their whole length. On their outside is a thin, brown, or yellowish ash-coloured skin; within, a thicker, white, friable substance, and in the middle a woody pith.

The roots have a mucilaginous bitterish taste, and no smell. Neumann obtained from 960 grains, 360 of watery and ten of spirituous extract; inversely 240 and 220. In 1563, the Spaniards brought them into Europe, as a specific in the lues venerea; and indeed a decoction is still esteemed an excellent auxiliary to mercury. When children are infected with lues from their parents or nurses, the powder of this root has been added to their food. It promotes perspiration, is said to attenuate viscid humours, to relieve venereal head-achs and nocturnal pains; particularly when the bones are carious, or in other respects disordered from the venereal disease. Ulcers, nodes, and other symptoms of the lues, which have resisted the effects of repeated salivations, are said to yield to its use, and the health after the use of mercury to be more speedily restored. Whether given in decoction or powder it should be continued in large doses, and for a considerable time.

The best preparation is the following decoction: ℞. Rad. sarsaparillæ incisæ ℥vi. aq. distillatæ ℔.viij. In a heat of about 195 degrees, let it be macerated for two hours; afterwards take out the sarsaparilla and bruise it; then let it be returned into the liquor, and again macerate it for two hours more. Boil the liquor till it is reduced to four pints, pour off the fluid, press the sarsaparilla, and strain the whole. This will be more palatable if a little liquorice root be added at the end of the boiling.

The London college order a compound decoction of this root. ℞. Radicis sarsaparillæ incisæ et contusæ p. ℥vi. corticis radicis sassafræ ligni guaici rasi, glycyrrhizæ contusæ singulorum p. ℥i. corticis radicis mezerei ʒiij. aquæ distillatæ ℔. x. These must be macerated in a gentle heat for six hours, then reduced by boiling to five pints, adding the mezereum during the latter part of the process, and the decoction strained. These decoctions are given in venereal, scrofulous, and hepatic affections. The dose of the first is half a pint, four times in twenty-four hours; the second half the quantity in the same space of time. The long stringy part only is useful.

The sarsaparilla forms a principal ingredient in the Lisbon diet drink, supposed to be thus made: ℞. Sarsaparillæ concisæ, radicis Chinæ sing. ℥i. nucum juglandis cortice siccatarum, No. xx. antimon. crud. ℥ij. lapidis pumicis pulverizati ℥i. aquæ distillatæ ℔. x. The powdered antimony and pumice-stone are to be tied loosely up in separate rags, and boiled along with the other ingredients, and this boiling continued till the liquor is reduced to five pints. This appears to be an inferior medicine to the former; for the addition of the antimony and pumice-stone can add nothing to the efficacy of the other ingredients. Notwithstanding the virtues above enumerated, and the commendations of many authors, Dr. Cullen never found it an effectual medicine in the lues venerea, nor any other disease, in whatever shape it has been tried.

Since that period, Mr. Pearson has given us a very instructive account of the real virtues of these subsidiary medicines in the cure of lues. He found, as we have ourselves observed, that it neither would cure lues, nor render a less dose of mercury necessary. Yet he thinks that, for a time, it would suspend the action of the virus, and remove the remaining complaints, after the principal disease was subdued, which arose either from *its* effects, or those of the medicine. Of its "*suspending*" power we have not found sufficient evidence; but its removing the remaining symptoms is indisputable. See Cullen's Materia Medica, and Pearson on the Effects of some Medicines in the Cure of the Lues Venerea. See LUES.

See Lewis's Materia Medica; Neumann's Chemistry; London Medical Observations and Inquiries, vol. i. p. 149, &c.

SARSAPARI'LLA. See ARALIA.

SARSAPARI'LLA GERMANORUM. *Carex arenaria* Lin. Sp. Pl. 1311, is often used in chronic rheumatisms instead of the sarsa. Some other species of carex, as the *c. distans* and *hirta* 1387, 1389, are also employed.

SARTO'RIUS, (from *sartor, a taylor*), *fascialis.* It is called *sartorius*, or the TAYLOR'S MUSCLE, because taylors cross their legs by its action. It arises tendinous from the anterior superior spinous process of the os ileum, runs inwards contiguous to the blood-vessels, and is inserted by a thin tendon into the inner part of the tibia. It partly rotates the thigh.

SA'SSAFRAS, (*quasi saxifraga*, because the decoction was supposed capable of breaking a calculus); *anhuiba*, is the root of the *laurus sassafras* Lin. Sp. Pl. 530, light, and covered with a rough and fungous bark, externally of an ash colour, and internally of the colour of rusty iron; brought from Virginia and other parts of America. The wood, which is called *fænicula vel fœniculatum lignum*, hath a fragrant smell, a sweetish, subastringent, aromatic taste: the bark is more fragrant than the internal woody part, and the small twigs than the larger pieces. Spirit of wine dissolves the whole of its active power, and water a large portion. Distilled with water it affords an essential oil, limpid at first, but afterwards yellow, or of a reddish brown: the remaining decoction affords a bitterish subastringent extract; but an extract made from a spirituous tincture possesses all the virtues of the root. It is considered as serviceable in cuticular eruptions; and is an ingredient in the compound decoction of sarsaparilla: its essential oil is given in doses of from two drops to ten.

Sassafras is used chiefly in decoction as a mild diaphoretic and corroborant in cutaneous, scorbutic, catarrhal, and cachectic disorders. Like the sarsa, it is supposed to assist the action of mercury in lues; but its real virtues do not rest on a better foundation. It is indeed inferior to the sarsa in rheumatic and syphilitic cases. (See Tournefort and Lewis's Materia Medica; Neumann's Chemistry.) Dr. Cullen has found copious

draughts of the watery infusion effectual in promoting sweat, without being able to determine the appropriate advantages of this evacuation.

SATELLITE VEINS, are those which accompany the brachial artery to the bend of the elbow.

SATUREI'A SATI'VA, (from *satyri*, because when eaten it is supposed to create lascivious desires); *cunila sativa, thymus, thymbra,* SUMMER'S SAVORY; *satureia hortensis* Lin. Sp. Pl. 795, is a low shrubby plant, somewhat hairy, with small, oblong, narrow leaves, set in pairs. Its flowers are in clusters in the bosom of the leaves, and of a purplish colour. It grows wild in the south of Europe, and is sown annually in our gardens. The leaves are warm, aromatic, and smell like a milder thyme. Rectified spirit takes up all their virtue; water the smell only. By distillation with water a small quantity of essential oil is obtained. It is supposed to be heating, somewhat diuretic and emmenagogue; but its chief use is for culinary purposes.

SATUREI'A MONTA'NA, Lin. Sp. Pl. 794; similar in its virtues to the former. WINTER SAVORY. See Raii Historia.

SATU'RNI EXTRA'CTUM. See PLUMBUM.

SATU'RNI A'QUA. See PLUMBUM.

SATURNI'NUM UNGUE'NTUM. See NUTRITUM UNGUENTUM.

SATU'RNUS, (from the heathen god). LEAD. See PLUMBUM.

SATYRIA'SIS, (from σατυρος, *a lascivious animal*); *brachuna, satyrismus, arascon,* and *arsatum, priapismus, salacitas.* A violent desire of venery, in such a degree as to destroy the reason. Dr. Cullen places it in the order *dysorexiæ*, defining it an unconquerable desire of venery in males. The species are:

1. *Satyriasis juvenilis*, when the functions are otherwise but little disturbed. 2. *Satyriasis furens*, when, with the excess of venereal appetite, the body is diseased with fever, &c. The pulse is quick, the breathing short, the patient is sleepless, thirsty, and loathes his food; the urine is evacuated with difficulty, and a fever soon comes on. See SALACITAS, and FUROR UTERINUS, a similar disease in females; Cœlius Aurelianus, lib. iii. c. 18. de Acutis.

SATY'RICA. See ENTACTICA MEDICAMENTA.

SATY'RION. A name for several species of ORCHIS, q. v.

SATYRI'SMUS. See SATYRIASIS.

SAUR KRAUT. See BRASSICA.

SAURU'RUS, (from σαυρα, *the lizard*, and ουρα, *a tail*). A plant called the *lizard's tail*, resembling in virtue the arum.

SAVI'NA. See SABINA.

SAXIFRA'GA, (from *saxum, a stone*, and *frango, to break*, medicines which dissolve or break the stone in the bladder). See PARONYCHIA, FILIPENDULA, MEUM LATIFOLIUM, PIMPINELLA, RUBIA SYNANCHICA.

SAXIFRA'GA ALBA; *sanicula sedum;* WHITE SAXIFRAGE; *saxifraga granulata* Lin. Sp. Pl. 576, is a plant with kidney-shaped, yellowish green leaves, round, purplish, branched stalks, on the tops of which are short loose spikes of white flowers. The root is composed of small fibres, intermixed with little tubercles. It is perennial, grows wild in sandy pastures, and flowers in May. The tubercles of the roots have a sweetish, slightly acrid taste, and are supposed to be aperient and diuretic; but these qualities, adopted from the *signaturists*, are derived from the resemblance of the tuberculated roots to calculi. See Lewis's Materia Medica.

SAXIFRA'GA A'NGLICA. ENGLISH OR MEADOW SAXIFRAGE; *fœniculum erraticum; angelica; hippomarathrum; peucedanum silaus* Lin. Sp. Pl. 354, is an umbelliferous plant with winged leaves, flowers of a yellowish white colour; the root is long, and about as thick as a finger, brown or blackish on the outside, and white within. It is common in meadows and pasture grounds, and flowers in June. The root, leaf, and seeds are said to be diuretic, aperient, and carminative, and in each respect preferable to those of the white saxifrage. See Lewis's Materia Medica.

SAXIFRA'GA MONTA'NA MI'NOR. See BUNIUM.

SA'XUM CALCA'RIUM. See CALX.

SCA'BIES, (from *scaber, rough*). A SCAB: a hard substance covering superficial ulcerations, and formed by a concretion of the fluid discharged from them. A name also for a disorder of the bladder mentioned by Ætius. If, after a painful discharge of the urine, branny scales appear in it, with many slender filaments, which subside, the ancients call it a *scabies*, considering it as an indication of a corrosion of its mucous and villous coats. To relieve the disease Ætius recommends a vegetable diet, milk, broth, &c. In Linnæus's Nosology, it is an order in the class of *vitia*, and signifies cutaneous diseases; see PRURITUS, and PSORA: and it is the name also of a plant, see LICHEN.

SCABIO'SA, (from *scaber, rough,* from its rough hairy surface). COMMON FIELD SCABIOUS; *scabiosa arvensis* Lin. Sp. Pl. 143, is a rough hairy plant; growing wild in pasture-grounds, of a nauseous bitter taste; and flowers in June. It is styled *aperient, sudorific*, and *expectorant;* used externally for the itch, from whence its name is derived.

SCABIO'SA I'NDICA ARBO'REA. See CATTU-SCHIRAGAAM.

SCABRI'DÆ, (from the same). An order of plants whose bark is rough.

SCABRITIES, (from the same). The rough surface of the barks of some trees.

SCADIDACA'LLI. See EUPHORBIUM.

SCA'LA SA'CRA, (from σχαλις, *a ladder*). See CLIMAX.

SCALE'NUS MU'SCULUS, (σκαληνος, a figure with three unequal sides); *triangularis*, takes its origin from the transverse processes of the vertebræ colli, grows larger as it descends, and is then collected into two masses; the anterior inserted into the inner edge of the first rib, on each side of which the subclavian vein and artery, with the bronchial nerve, pass out; and the posterior attached to the posterior part of the first rib, partly running to the second: its office is to raise those two ribs, and to move the vertebræ colli to one side, or when acting together to bend it forward. More minute anatomists, as Douglass and Albinus, divide it into many additional portions; but this minuteness is useless. A middle one may be distinguished, inserted tendinous into the outer and upper part of the first rib, from its root to about an inch from the cartilage.

SCALPE'LLUM. A SCALPEL. The common dissecting knife.

SCA'LPO. To SCALP; to lay the skull bare. The operation is performed by making an incision through the integuments and pericranium equally and at once, with the edge rather than the point of the knife, especially if a fracture is suspected. After making the incision, the pericranium must be raised a little from the bone with the edge of the knife, to clear the bone, and the scalprum employed.

In pursuing a fissure, a rectilinear incision is preferable; but in most other cases an oval one. Arnaud and Gooch have made a crucial incision upon the temporal muscle with good success, the muscle still continuing its action. See Gooch's Treatise of Wounds, p. 253.

SCALPRUM, (from *scalpro, to rasp*, or *raise*). A DENTICULAR, RASPATORY, or RUGINE, any kind of iron instrument with which a rotten bone is rasped or scraped. Sometimes scalprum means a little chisel for amputating the fingers.

SCAMMO'NIA MONSPE'LICA. See PERIPLOCA.

SCAMMO'NIUM, (a corruption of the Arabic terms *chamozah*, or *mammuzah*). SCAMMONY, MAHMOODY, *convolvulus scammonia* Lin. Sp. Pl. 218, SYRIAN BINDWEED, or SCAMMONY. The root is very long, and about three or four inches thick, the tops of which, while in the ground, are cut in June, and from this incision a milky liquor exudes, which is received in shells, &c. and when hardened by evaporation forms the scammony.

This gum resin is brought to us in light spongy masses, glossy, of different shades, from a grey or yellow white almost to a black, appearing when broken bright and shining; and easily crumbling between the fingers. If touched with a wetted finger it becomes milky; if broken, and put into water, it dissolves into a milky liquor of a greenish hue. An inferior sort is brought from Smyrna, more pungent than that from Aleppo, and mixed with much extraneous matter. Though different parcels of scammony vary so much in their colour, when powdered they are all of a brownish white. That which easily crumbles between the fingers, is pellucid, grows instantly white on being wetted, and leaves but little fæces when dissolved, is the purest and best. It is often adulterated with wheat-flour, sand, or ashes, which are discovered by dissolving the scammony in water, when the impurities sink to the bottom.

The Greek and Arabian physicians employed it internally as a purgative, and externally for tumours, scabies, tinea, fixed pains, &c. Since the time of Boerhaave it has been considered a safe though stimulating cathartic, and frequently given uncombined without producing tormina, or an excessive discharge. It is, however, a very brisk purge, and usually given in cold phlegmatic constitutions.

Inflammatory disorders are sometimes increased, and very irritable habits occasionally injured by it. It needs no corrector, though for this purpose it has been exposed to the fumes of burning sulphur; but we thus only lessen its activity. When scammony has undergone this operation, it is called *diagrydium*. The resin and gum are nearly in equal parts, so that it dissolves equally in water and in spirit.

See Lewis's Materia Medica; Neumann's Chemistry; London Medical Observations and Inquiries, vol. i. p. 13, &c.

Electuarium scammonii, formerly *electarium caryocostinum*, is made by adding to an ounce and half of scammony in powder, cloves and ginger, of each six drams; essential oil of carraway, half a dram by weight, with a sufficient quantity of syrup of roses. Mix the species, powdered together, with the syrup, then add the scammony, and afterwards the oil. Dose ℈ i. to ʒ i.

Pulvis scammonii compositus, cerberus triceps, cornachini pulvis.—Take of scammony, hard extract of jalap, each two ounces; ginger, half an ounce; powder them separately, and mix them. Dose gr. x.—℈ i.

Pulvis scammonii cum aloe, consists of six drams of scammony; hard extract of jalap, socotorine aloes, of each an ounce and a half; ginger half an ounce. They are powdered separately and mixed. Dose gr. x.—℈ i.

Pulvis scammonii cum calomelane, contains two parts of scammony to one of calomel, and as much fine sugar. The dose is from ten grains to a scruple. Pharmacop. Lond. 1788.

Scammony is also an ingredient in *pulvis è sennâ compositus; extractum colocynthidis compositum;* and in the *pilulæ ex colocynthide cum aloe* of the Edinburgh Pharmacopœia.

SCAMMO'NIUM ORIENTA'LE. See GAMBOGIA.

SCA'MNUM HIPPO'CRATIS. See BATHRON.

SCA'NDIX, (from *shandak, to sharpen*). *Acus Pastoris, Scandix, Pecten Veneris* Lin. Sp. Pl. 368 SHEPHERD'S NEEDLE, or VENUS' COMB, grows in the fields in Europe, is oleraceous, and aromatic. It is said to be antiphlogistic, diuretic, lactiferous, and it is given in dropsies and vertigo.

SCA'NDIX CEREFO'LIUM, Lin. Sp. Pl. 368. See CHÆREFOLIUM.

SCA'NDIX ODORA'TA. See MYRRHA, and MYRRHIS.

SCA'PHA, a SKIFF, (from *σκαπτω, to dig*, formerly made of an excavated tree), is the name for one of the cavities of the ear (see AURICULA); and for a species of bandage. See DELIGATIO.

SCAPHO'IDES, Os, (from *σκαφη*, and *ειδος, forma*); *os naviculare* and *naviforme*, or *cymbæ* and *cymbiforme*, the first bone of the first row in the wrist, articulated to the thumb. In infants it is wholly cartilaginous; also the third bone of the tarsus. See CARPUS.

SCA'PULA, (from the Hebrew term *schipha*). The SHOULDER-BLADE; *epinotion*; *homoplata*; *omoplata*; is a triangular bone, situated on the outside of the ribs, fixed to the upper posterior and lateral part of the thorax, extending from the second to the seventh rib: its sides are unequal; the posterior side or basis is the longest, the inferior costa is shorter, and the superior costa is the shortest. The body of this bone is concave towards the ribs, and convex behind, where it is called *dorsum*. Three processes proceed from the scapula, the CORACOIDES, q. v.; the spina scapulæ, or intrascapulum, which rises from the posterior convex surface, and divides it unequally: it is small at the base, and becomes higher and broader as it advances. The extremities of it are broad and flat, and hang over the cavity of the os humeri. To this part of the spine, called *acromion* or *epomis*, the clavicle is articulated. The third process is produced from the neck of the bone; and is hollowed on its anterior part by a glenoid cavity, which is an oval, whose greatest diameter is from below upwards. The cavity in the extremity of the

neck of the scapula, in which the head of the humerus is placed, is called *omocotyle*.

The superior costa is perforated near the base of the coracoid process by a semicircular indentation, closed by a ligament, through which vessels and nerves pass. There are other indentations between the coracoid process and the head of the bone, as well as between its neck and the acromion. The scapula is thin at its middle part, in consequence of the action of the muscles. Its use is to give a fixed point to the muscles of the superior extremity, and by its motion to admit of a change of direction in the socket of the humerus. It defends also the ribs behind. The base, the acromion, the coracoid process, and head of the scapula, are cartilaginous at birth, and the three former are joined as epiphyses. The head, with the glenoid cavity, is gradually produced by a continuation of the ossification of the body.

SCAPULA'RIA, (from *scapula*). The SCAPULARY. See DELIGATIO.

SCAPULA'RIÆ ARTE'RIÆ. The SCAPULARY ARTERIES. The external scapulary artery, muscularis arteria, passes through the notch in the superior costa of the scapula, to the musculus supra spinatus et infra spinatus, teres major et minor, and to the articulation of the scapula with the humerus.

The internal scapulary artery rises from the axillary, near the axilla, and runs backward to be distributed to the subscapularis, giving branches to the serratus major, the axillary glands, the teres major, &c.

The superior scapulary artery is a branch from the subclavian, running downwards to the inside of the clavicle, and following the tract of that bone from whence it goes to the adjacent muscles.

SCA'PUS, (from σκηπτω, *to lean upon*). See CAUDEX.

SCARABÆ'OLUS HÆMISPHE'RICUS COCHINELIFER. See COCCINILLA.

SCARABÆ'US, (from σκωρ, σκατος, *dung*, its supposed origin). BEETLE. See CICINDELA.

SCARIFICA'TIO, (from *scarifico, to scarify*). SCARIFICATION; *aposchasis, aposchasmus, encharaxis.* The word generally signifies those incisions that are made with the instrument called *scarificator*, and which is used in the operation called *cupping*. See CUCURBITULA, and ANASARCA.

SCARI'OLA. See ENDIVIA.

SCARLATI'NA, vel SCARLATI'NA FE'BRIS. The SCARLET FEVER, called from the colour of the patient's skin; *rosselia*. Dr. Cullen places this disease amongst the *exanthemata*, defining it a contagious inflammatory fever, in which, on the fourth day of the disease, the face becomes a little swelled, with a florid redness all over the skin, with broad spots, running at last one into another; after the expiration of three days forming furfuraceous scales, and falling off: to which often an anasarca succeeds. He distinguishes two species.

1. SCARLATI'NA SIMPLEX, when not accompanied with a sore throat.

2. SCARLATI'NA CYNANCHICA, when attended with ulcered fauces.

Sydenham observes that children are its most frequent subjects; and when epidemical, it is usually so at the close of the summer. It begins with a chilliness and shivering, the whole skin is covered with red spots, which are more numerous, larger, and redder, but not so uniform as those of the measles; a dejection of spirits, prostration of strength, and often a stiffness of the neck, followed by a burning dry heat, and at night frequently delirium, particularly about the end of the third day, and not attended with watery eyes or other symptoms of coryza. A sore throat sometimes comes on early, but chiefly obtrudes itself on our notice about the end of the second or beginning of the third day. It is sometimes wholly absent, but in every case a redness of the fauces is conspicuous, apparently a continuation of the affection of the skin.

It is not agreed whether the angina is a constantly accompanying symptom of this disease. From the general florid appearance of the fauces, we think that it is so; yet, as authors seem to discriminate a variety, which they style *anginosa*, we shall reserve our observations on this subject for the following article. A pungent pain is commonly felt all over the body, and the stiffness of the muscles of deglutition overpowers the uneasiness from thirst. The redness soon extends from the face to the neck, and thence over the whole body: in many instances it is a general suffusion, without any discriminated maculæ, and scarcely in any case is there an elevation of the cuticle. When the eyes become peculiarly red, delirium impends; but delirium during the nocturnal exacerbation is not uncommon through the whole course of the disease.

After about six or seven days, the scarlet colour is succeeded by a browner hue, and the change occurs first in the face, afterwards on the breast and extremities; but the fever and delirium seem to abate with the intensity of the colour in the face. We have known the scarlet continue brilliant on the extremities during the whole of the convalesence. The strength and appetite return slowly. During the whole course, and even during the delirium, the pulse is often quick and low, seldom strong or full.

All the appearances of this disease are fallacious. The most violent delirium does not always portend danger, and the recession of the scarlet effusion, apparently the most regular, is followed in many instances by tumified glands, a slow fever, prostration of strength, and anasarca. The skin usually separates in branny scales, and these are apparently reproduced when they have once fallen off. In cold weather, and in northern climates, the effusion will sometimes become pustular, though in few places, and in slight pimples.

Much difficulty has been apparently felt in discriminating this disease, but the experienced eye requires little assistance. Petechiæ are distinct spots of a dark red, not a florid scarlet effusion, and the catarrhal symptoms universally distinguish measles. Erysipelas swells considerably: scarlatina slightly, if at all; and the fever of the former, particularly the nocturnal exacerbation, is much less considerable. Erysipelas is also a disease of the adult, scarcely ever attended with any affection of the fauces: scarlatina of a younger period, with, in every instance, a scarlet hue on the throat. A slight erysipelas, styled the *gutta rosea*, sometimes nearly resembles the present complaint, but it is so inconsiderable as to require little attention, and if scarlatina is equally slight, distinction is unnecessary. The period of the fever at which the suffusion comes on furnishes a general discriminating mark.

Every symptom of the disease points out a specific virus as its cause. The scarlatina is evidently infectious, generally epidemic, and usually affects persons once only in their lives. It is almost peculiar to children, for it seldom attacks adults, and those only most exposed to infection; and in them also it is peculiary mild. After the most apparently severe attacks, we have seldom seen an adult in danger, and this we think chiefly arises from the worst effects of the disease falling on the lymphatic system. If a specific infection be admitted, the fever and all its consequences are not uncommon. The affection of the lymphatic system is obvious in the neck; and, when the swellings are not conspicuous in that part, they seem from the effects to be in the mesenteric glands. The anasarcous swellings are chiefly from debility, for the urine is found to contain an unusual portion of albumen. The fever is evidently of the typhus kind, though attended with considerable heat, in consequence of the affection of the surface; and the delirium seems, as in erysipelas, to arise from a general determination towards the common carotid, and not from any metastasis, for it accompanies the most florid hue of the surface.

The variety of plants and medicines recommended by different authors would alone show that the disease is intractable, and its treatment not well understood. All the appearances, we have said, are fallacious; and the best concerted, apparently the most successful, measures are frequently followed by an unexpected reverse. The disease undoubtedly varies with the climate, the season, and the constitution of the patient; but it is probably never inflammatory to any considerable extent, and never requires *bleeding*. Even leeches in the most violent delirium are rather injurious than useful: yet bleeding is at times recommended, and we fear too often practised.

From a general view of the disease, we can seize one discriminating feature, viz. a violent determination to the skin, with excessive heat, accompanied also with a determination to the head. Conformably to the general plan therefore in febrile cutaneous diseases, our great object should be to moderate that determination, while we support the general strength and lessen the impetus of the blood within the cranium. *Emetics* are particularly necessary, and in general highly useful. *Cathartics* are, we think, equally so, though rejected by some authors as increasing debility, or from a fanciful apprehension of diffusing the poison usually confined to the throat through the whole intestinal canal. Since the publication of our first part, we have, under the guidance of Dr. Hamilton, employed laxatives in scarlatina more freely, and have, we think, succeeded better than before. At least we are certain that the objections just mentioned have not the smallest foundation. We have usually employed the cooling ones, as salts with sena, and have found that procuring three or four motions daily has mitigated the fever, and conducted it more safely to its termination. Glandular tumours have also been more rare.

Blisters appear to be indicated from their effects of deriving the fluids from the head; but they have not been highly useful in scarlatina, since the affection of the head depends on general rather than local excitement. We have sometimes thought that they produced, or assisted the formation of, glandular tumours.

The low state of patients labouring under scarlatina has led to the use of cordials and sudorifics; we need not say with manifest injury. The heat must be repelled rather than encouraged; and though nitre and other cooling medicines have seldom been given, cold applications, as we shall find, have been beneficial. A late author has spoken warmly in praise of ammonia, but he used it late in the epidemic, when its violence was abated, and late in the disease, when the strength began to fail. We have not imitated the practice, but have found little to recommend it in the reports of those who have adopted the plan.

The bark would appear peculiarly useful in this complaint, from the asthenic state, and the tendency to putrefaction; but it is not only useless, for it increases both fever and delirium, checks the perspiration, and impedes sleep. Opiates are scarcely more useful, though combined with camphor they sometimes calm the restless irritability. *Camphor*, with the antimonial powders, is almost the only diaphoretic, if it deserve that name, which is admissible, for even the relaxing effects of the Dover's powder have not been eminently beneficial.

The exhibition of *diuretics* rests on a very uncertain foundation. We know not to what indication their use was owing, except that the urine is an evacuation, vicarious to that of the skin, or that they might have counteracted the tendency to anasarca in a subsequent stage. Dr. Withering, if we mistake not, recommended the alkaline salts with this view, but he has had few imitators, probably from the want of success.

In this very uncertain state Dr. Currie, by a happy boldness, has pointed out a new path, viz. by cold affusions. It is not enough to sponge the body once or again, but the cold water must be dashed against the patient repeatedly till the heat is subdued, and the process must be repeated as fast as it returns. The heat is to be conquered by cold, and the cold be freely, boldly, and steadily applied. The success which has evidently attended this plan leaves little doubt of its efficacy, yet we fairly own that we cannot commend it from our own experience. We have already, however, laid down the data on which the operation of the remedy may be explained, and we shall add the summary.

In all cutaneous diseases the morbid matter is hurried, we have observed, with peculiar rapidity to the skin, and the eruption depends on its being stopped under the cuticle. We know from the facts stated in the article DIAPHORETICA, q. v. that the readiest way for the discharge is to lessen this impetus; and from the modern practice in small-pox, that the eruption may be in a great degree, if not wholly, prevented by cold. In this disease cold water is peculiarly applicable: the heat is considerable, the determination to the head violent, the debility alarming. It is not therefore surprising that cold affusions should have been so successful. Why therefore, it will be added, have you not practised them? We will frankly say, because we shall compact in this way the principal points of the practice.

On the attack of all fevers an emetic is usually premised, so that it is commonly exhibited before the nature of the complaint is known. The emetic is followed by a laxative, and before its operation is fully completed the nature of the disease usually becomes evident. In this case then the regular exhibition of laxatives, with the camphor and antimonial powder, in

some cases with the addition of a slight dose of opium, will succeed. The heat and the delirium will sometimes return for two or three nights, but the steady repetition of the laxatives prevents their increasing to a dangerous degree. At the same time cool drinks, spacious apartments, and free cool air, are peculiarly necessary. The retrocession of the eruption from cold, or the danger resulting from such retrocession, Dr. Currie has taught us to consider as imaginary inconveniences.

We know no disorder which represses so powerfully the constitutional energy. For months, no exertion is often made to restore health. The complexion continues pale, the strength inconsiderable, with anasarcous, and often glandular swellings. It has been said that these consequences are avoided when the disease is extinguished by cold: we know that they are greatly mitigated when laxatives have been freely used. In general, however, this state of debility is not dangerous. It yields to tonics, to country air, to a generous diet, and, above all, to time. Glandular swellings require no peculiar treatment. Of the sore throat we shall speak in the following article. We shall add our predecessors' remarks as a specimen of the practical directions of the former edition.

It seldom requires much assistance from art, except there is an approach to that putrid state to which it inclines in the advanced degrees. Bleeding is rarely required. The patient may be kept in his room, but not much in bed; his drink may be acidulated with the vitriolic acid, or with Clutton's febrifuge spirit; and if a stool is required, rhubarb will be the most convenient: when the skin peels off a more active purge may be given.

Sometimes a coma, or an epilepsy, happens in the beginning of the disease, in which case apply a blister to the back. When it is attended with more malignant symptoms, its tendency is to the putrid kind of fever, with ulcers, &c. in the throat. Here blisters, which may be applied to the back and throat, with the bark, are the chief dependencies, and, as in the putrid sore throat, acids and cordial perspiratives may accompany the bark. Antimonial preparations, which are so generally useful in fevers in this case, are apt to occasion a purging.

See Sydenham's Works; Observations on a late particular Scarlet Fever, by N. Cotton, M. D.; Withering's Account of the Scarlet Fever and Sore Throat; De Haen Ratio Medendi Continuat. 1. 7.; Clarke on Fevers, and the Scarlet Fever; Rush's Medical Enquiries; Saalman Descriptio Urticariæ, Scarlatinæ, &c.; Vogel de Febre Scarlatina; Cullen's First Lines, edit. 4. vol. ii.

SCARLATI'NA ANGINO'SA, *febris anginosa, angina mucosa, cynanche exanthematica, angina erysipelatosa, amphimerina anginosa* et *mucosa, cynanche epidemica*, ANGINOUS SCARLET FEVER, or MUCOUS QUINSY, chiefly affects young people and women; sometimes the aged of both sexes; is often epidemic and infectious. The tumour is less than in the inflammatory sore throat; the fauces are of a florid hue, neither deep nor surrounded with ragged edges; when ulcers appear they are very slight. The pain in the throat usually occurs early, even before the rigor, though instead of it there is sometimes a soreness of the tongue, and a slight degree of salivation; an efflorescence often appears on the arms, though they sometimes swell without it. The ulcerous sloughs are in general only inflammatory exudations on the fauces, and may easily be washed off. The tongue often appears red and shining, is tender, swelled and affected with pain. Usually it arrives at its height in about seven days, and in a fortnight the patient is perfectly recovered.

All these appearances attend, as we have seen, the scarlatina, and this kind of angina is seemingly a symptom only of the more general disease. Yet a separate notice was necessary, as sometimes the affection of the throat is independent of any redness of the skin, and of any perceptible fever.

A difficulty has arisen on the other side, how far this disease is connected with angina maligna. We have followed in the description the former editors, who have copied from Dr. Grant. Had they been observers, however, they would have known that scarlatina is often attended with ulcers of the most malignant kind; and we have already remarked, as a circumstance almost incredible, that, during the prevalence of a scarlet epidemic, we have seen children whose throats were full of the deepest, foul ulcers playing with little apparent inconvenience, and with little danger. We know the latter fact, for, from fear of alarming parents, we have looked on without interfering, watching, however, with the greatest anxiety, and the most unremitted attention, every change. Does the scarlatina anginosa then differ from the angina maligna? We think so; but as usual between diseases nearly allied, the confines are not easily ascertained, for the malignant angina is sometimes attended with efflorescence. In general, however, a fever, peculiarly asthenic, with a low irregular pulse, features and the eyes sunk, with every mark of debility, distinguish the putrid sore throat. When the disease is slight, they are still sufficiently conspicuous to ascertain the nature of the complaint. If they are not, distinction is unnecessary; for where medical treatment is required, the same may be advantageously adopted in both diseases, or each will be so slight as to require none.

The only subject of consideration referred to this head, in the former article, is the management of the throat; but in general it requires no very particular attention. Blisters round the throat are unnecessary, and seldom useful; but, when the tonsils are swollen, they may be applied behind the ears, to reach so far as the trachea, on each side. Mild antiseptic gargles are useful, and equal parts of simple oxymel and port wine are generally sufficient: in deeper, more ragged ulcerations, decoctions of Peruvian bark and contrayerva, sharpened with spirit of vitriol, are sometimes necessary. The ulceration in scarlatina anginosa is seldom, however, considerable or dangerous. See ANGINA MALIGNA.

SCARLATI'NA URTICA'TA. ACUTE NETTLE-RASH. See URTICARIA.

SCE'LETOS, (from σκελλω, *to make dry*). A SKELETON; the bones of an animal freed from the teguments, vessels, muscles, &c. properly connected in their natural situations. It is styled a natural skeleton when the ligaments are preserved; an artificial one when they are joined by wires, and connected with leather.

SCELOTYRBE, (from σκελος, *the leg*, and τυρβη, *disturbance*); signifies the pains attending scurvy, frequently used for the scurvy itself. See SCORBUTUS.

SCELOTY'RBE FESTI'NANS. Idiopathic convulsion.

SCELOTY'RBE VERMINO'SA. A symptomatic convulsion.

SCHA'GRI CO'TTAM. See CORNI.

SCHARBOCK. (Danish.) A high degree of scurvy.

SCHÆNA'NTHUS, (from σχοινος, *a rush*, and ανθος, *a flower*). See JUNCUS ODORATUS.

SCHEROMA. A dryness of the eye from a defect of the secretion of tears. It produces a burning, painful sensation, often with pricking pains, followed by redness. It occurs in fevers, in the last stage of life, from extraneous bodies which have not been removed; and is a common symptom of ophthalmia.

SCHI'STUS, (from σχιζω, *to cleave*). Schists are of different kinds, chiefly argillaceous earths, but none are used in medicine. See HÆMATITES.

SCHLOTT. The pan scratch of the manufacturers of salt, from whence the magnesia was formerly procured.

SCIA'TICA, (corrupted from *ischiatica*). See RHEUMATISMUS and ISCHIADICUS MORBUS.

SCIA'TICA ARTE'RIA, is a branch of the hypogastrica: it runs under, and gives branches to the musculus pyriformis, quadrigemini, the os sacrum, and to the inner side of the os ischium; passes obliquely over the sciatic nerve; and as they both go through the great posterior sinus of the os ileum, detaches small arteries to the inner substance of the nerve. It afterwards runs up in a radiated manner on the outside of the os ilium, and is distributed to the inner substance of that bone, and to the musculi glutæi, especially to the medius and minimus.

SCIA'TICA VE'NA. When the crural vein hath descended to about the upper extremity of the vastus internus it sends out a branch, which runs down on the side of the trunk, covering the crural artery almost to the ham, where it is again united to the trunk: sometimes it is continued a little way down on the leg. It is called the *sciatic vein*, from accompanying the sciatic nerve.

SCIA'TICUS NE'RVUS. See LUMBARIS.

SCI'LLA, (from σκιλλω, *to dry*; from its property of drying up humours). The SQUILL, or SEA-ONION; *ornithogalum*; *scilla maritima* Lin. Sp. Pl. 442, is a plant with a large bulbous acrid root like that of an onion. The leaves are broad, the flowers, like those of the ornithogalum, grow in a spike before the leaves appear. There are two species used indifferently, viz. the red and the white. Epimenides is said to have taught Pythagoras the use of squills, and their solution in vinegar: Pythagoras made the vinegar into an oxymel.

This plant grows on sandy shores in Spain and the Levant. The large, plump, fresh roots, whose juice is clammy, are preferred.

The root is large, conical, consisting of fleshy scales, thinner at each edge, surrounded by others dry and shining, which have occasioned the root to be styled *tunicated*. These scales, dry and semipellucid, are generally met with in the shops; but it is better always to separate from the fresh root, and dry them carefully, as the heat usually employed is sometimes too great. It contains mucilage, albumen, and extractive matter; but its peculiar acrimony is rather saline than oily, and volatile in a strong heat.

To the taste they are nauseous, bitter, and acrid; and if much handled ulcerate the skin. Internally they promote expectoration and urine; and when squills are given as a diuretic, or an expectorant, the dose must be such as to produce nausea: they seldom prove purgative, except in circumstances when we least wish it, as in peripneumony.

Its stimulus appears in almost every gland, particularly in the kidneys and the mucous glands of the bronchiæ; and the squill is consequently a valuable medicine in humoral asthma, peripneumonia notha, the latter stages of peripneumony, and in dropsy. In the last it almost, from its peculiar powers on the kidneys, excludes every other; and few dropsies are cured without its assistance.

It has been supposed that when it acts as an emetic or a laxative its diuretic and expectorant powers are proportionally lessened; but this is a refinement not supported by observation. Yet if this be the opinion of the practitioner, the medicine may be guarded by an aromatic or an opiate. In general it does not produce its specific effects until some slight nausea is produced; and such is the difference of constitutions, or the state of the medicine, that from one to fifteen grains of the dry squill have been, in different circumstances, necessary for this purpose. The medicine soon, however, becomes habitual, and the dose must be increased or the interval lessened; but when it has produced nausea it is with difficulty continued: the sickness is peculiarly distressing. The union of mercury with squills depends on a very uncertain foundation. It was probably intended as a deobstruent, for infarcted viscera are often concomitants of dropsy. If, however, necessary, the mercurial should be given separately, and its more active effects guarded against.

Some caution is necessary in the administration of this medicine, for its acrimony is so great that it ulcerates the skin; and, if given in large doses, and frequently repeated, it not only excites nausea, vomiting, and tormina, but strangury, bloody urine, hæmorrhoids, and convulsions, with fatal inflammation, and gangrene of the stomach and bowels. Squills, on account of their offensive taste, are best formed into pills; and to prevent the nausea which they excite, when not intended as emetics or expectorants, a few grains of some agreeable aromatic may be added to each dose, or it may be combined with the fresh root of elecampane. The best form is the powder, fresh and properly prepared; for age, or want of management, destroys its effect.

Water, wine, proof spirit, rectified spirit, and vinegar, extract the virtues both of the fresh and the dry squills; but neither carries any thing by distillation: so that in the extracts the whole of the active parts are retained. Alkalis lessen their bitterness and acrimony; vegetable acids make very little alteration in either, but are supposed to improve their expectorant power.

The preparations of the London college are,

Conserva scillæ, formed by beating one ounce of fresh squills with five ounces of double refined sugar. Its dose to adults is from one scruple to ℨss. when fresh.

Scilla exsiccata.—In this form the squills are cut transversely, after the outward skin has been taken off, into thin slices, and dried with a gentle heat. It is given in powder as an expectorant and diuretic; to

adults, in doses of from one to six grains: four grains of the dried root are equal to twenty of the fresh.

Mel scillæ is prepared by boiling three pounds of clarified honey with two pints of tincture of squill to the thickness of a syrup. Dose ʒi.—ʒij.

Oxymel scillæ differs only in using the vinegar of squills instead of the tincture. Dose ʒss.—ʒi.

Pilula scillæ. Take of fresh dried squill, powdered, one dram; ginger powdered, soap, of each three drams; ammoniacum, two drams; syrup of ginger, as much as is sufficient. Dose eight to fifteen grains.

Tinctura scillæ is made by digesting four ounces of squill, fresh dried, in two pints of proof spirit for eight days. Dose from twenty to sixty drops or more repeatedly.

Acetum scillæ.—Take of squill, fresh dried, one pound; vinegar, six pints; proof spirit, half a pint. Macerate the squill in the vinegar, with a gentle heat, in a glass vessel, for twenty-four hours; press out the liquor, and let the fæces subside; then pour off the liquor, and add to it the spirit. Pharm. Lond. 1788. Dose the same as the tincture.

Emplastrum scillæ compositum,—℞. Galbani, ammoniaci āā ℥ss. opii ʒi. aceti scillæ ℥iij. saponis ℥ss emplastri lithargyri ℥ij. The galbanum, soap, and litharge plaster, must be melted together; to which are to be added the opium, vinegar and ammoniacum, mixed also together, and the whole continued over the fire, and stirred till they are perfectly incorporated. To indolent tumours this is considered as an useful application.

SCI'NCUS, (from the Hebrew term *shequa*). *Crocodilus terrestris,* the SCINK or SKINK, *lacerta scincus* Lin. Syst Nat. vol. i. 365, is a small amphibious animal of the lizard kind, caught about the Nile. Its flesh hath been esteemed as a diuretic, alexipharmic, &c. but is now neglected. It was formerly supposed to be a specific in lepra.

SCIO TE'RRA. See CHIA TERRA.

SCI'O VI'NUM. See CHIUM VINUM.

SCIROCCO. A hot suffocating wind, in some parts of Italy, from the coast of Africa, whose effects are well described in Brydone's Travels. Like the KAMPSIN, the HARMATTAN, and the SAMIEL, q. v., it is very enervating, and the air seems to contain an unusual portion of hydrogen.

SCI'RRHUS, (from σκιῤῥόω, *to harden*), a hard tumour with little or no remaining sensation. (Galeni Commentaria in Aphorismum, xxxiv. sect. iv.) Dr. Cullen defines it a hard tumour of some part, most frequently of a gland, not painful, and suppurating with difficulty. Dr. Aitkin includes the *physconia* of Dr. Cullen and the sarcocele as a species of scirrhus, but with little foundation, either from the laws of arrangement or the nature of the complaint. The seat of this tumour is usually some gland; but it is not a disease of the lymphatic glands. In cases of cancer, where the conglobate glands appear of a scirrhous hardness, the disease is a communicated, not an idiopathic, one, and cannot be strictly called scirrhus.

It has been doubted whether scirrhus is in every case a tumour, as the part seems sometimes lessened. In fact, however, the diseased portion is always swollen, and the irritation in general enlarges the adjacent parts. If a scirrhus takes place in the breast, for instance, at first it will shrink; but the follicle diseased enlarges. Hardness is the consequence, for the integuments of glands are firm and inelastic: a knotty irregular feel is very common; but is not an indispensable character, at least in the early stages.

Though scirrhus is not a disease of conglobate glands, and though the lymphatic system is seldom diseased in old age, yet, as the conglobate glands are affected in cancer, and tumours of a malignant nature appear in advanced life where no secreting follicle seems to exist, we must not wholly deny the existence of schirrosity in such glands. But they scarcely in any instance suppurate, and if they do not yield to the remedies of scrofula they do not become cancerous. When they do suppurate they heal slowly, but do not spread, nor are they highly painful. We have known them continue indolent for twenty years.

We can perceive some foundation for this distinction in the nature of the fluids which the tumours contain. The conglobate glands, when diseased, are filled with a curdy matter, approaching in its nature albumen, which, we have found, is incapable of suppuration, and which, when discharged by the suppuration of the surrounding parts, is seldom putrid. The conglomerate glands, on the other hand, contain more azotised fluids derived from the blood, which is itself susceptible of putrefaction, and often excrementitious ones more highly putrescent. The matter of cancers is not, indeed, strictly speaking, putrid, but hepatic; and this will perhaps explain why some of the worst kind occur in glands which separate the milk and other bland fluids. The general principle is, however, probably true.

The *effects* of scirrhus differ according to its situation. The disease must, of course, injure the function of the part; but when this is not important, as in the mucous follicles of the lips, it may continue for years without injury. When in the neighbourhood of nerves it has produced convulsions; when on the larger lymphatics, anasarcous tumours below. It is even said to have induced atrophy, by compressing the thoracic duct. Many of these consequences, though detailed by authors, are, however, apparently imaginary. In general a scirrhus tumour is harmless, unless inflammation comes on, when it becomes CANCER, q. v. Its progress in the change has been detailed in that article.

In the cure of scirrhus the first step has usually been to prevent inflammation, and this has been attempted by general and topical bleedings, by a milk and vegetable diet, and by frequent cooling laxatives. In scirrhi of the less important organs the severity of this plan may be greatly mitigated; but inordinate stimuli must be carefully avoided. When this object is attained, the next is to render the obstructed vessels pervious, and by this means to admit of the action of the lymphatics. It is difficult to combine both indications. Deobstruents and resolvents are terms familiar in therapeutical authors; but the practitioner is deceived in their employment. One obvious inconsistency is, that by exciting the small vessels we greatly endanger accelerating the circulation in general, and increasing the inflammatory action we wish to avoid. Mercurials have both effects; but by cautious management the former is more readily produced than the latter. The prepa-

ration best adapted for such purposes is the muriated mercury; and however difficult the explanation of its action, when the tumour is beyond the reach of the circulation, its good effects are certain, if the doses are small and long continued. These effects are greatly assisted by the mezereon, guaiacum, and sarsa, drank in decoction. The external application of mercury in a mercurial plaster is apparently useful; but it is doubtful whether it can have any influence, except by its external warmth. The ammonia in small doses, recommended by Martinet, the barytes muriatus by Hufeland, and electricity by our countryman, Dr. Brisbane, seem to act in a similar manner. Galvanism, from its power of analising fluids, may probably be still more effectual; but it has not yet been tried.

Another class of deobstruents is termed the narcotic; and, as already explained, while the one render the vessels permeable by increased impulse, the other prevent farther impaction by the action of the arterial system. It were well if we are able to direct either class from a distinction of the source of the complaint; but we believe it to be impracticable, or we can only observe, in general, that the mercurials are adapted to the languid circulation, and the narcotics to the active. This distinction will not, however, always apply, yet it may be perhaps with advantage kept in view. The chief of the narcotics is the *hemlock*, which has been persisted in often to the destruction of the constitution. We have actually seen a patient die of mortification of the nates, while confined to a sitting posture, taking large doses of hemlock *for a milk sore*. In many authors we find the doses peculiarly large, and even Warner, in his Treatise on the Diseases of the Eyes, mentions a dram and half daily.

Digitalis and *solanum* are of the same class, and have had their respective advocates, in Mayer and Gataker in the Edinburgh Essays; but they are now, we suspect, very seldom employed. *Emollients*, mentioned by some authors, are at this time in general disregarded.

Arsenic possessing some apparent advantages in cancers has been also used in scirrhi; yet, we fear, without any peculiar benefit. It might perhaps be properly classed among the more stimulating deobstruents; but we referred it to this part of the article to connect it with the bark, which has had its advocates. Neither, however, apparently do more than support the general strength.

The great uncertainty of internal remedies, or external applications, has induced practitioners to recommend an operation; and if the scirrhus is not painful, if moveable, and the constitution otherwise uninjured, little doubt can remain of the propriety of the attempt. If not moveable, should the constitution be sound, it may be attempted, though with less certainty of success. The vicinity of large blood-vessels, or important nerves, is an obstacle which will call for peculiar care and dexterity; but there are few situations in which they may not be avoided.

We have now spoken of scirrhus in general; but some additional remarks are suggested when the disease affects particular organs. When it affects the sebaceous glands of the skin, particularly of the lips, extirpation may be safely attempted; but the tumour is sometimes so exquisitely irritable as to give violent pain on the slightest touch. It is styed *a noli me tangere*, and is generally left to nature.

All persons, and at any age, may be the subject of this disorder; but the sedentary, and more particularly women, when their menses decline, are most frequently affected.

From the most attentive examination, it appears that the substance of these tumours is inspissated lymph or gluten. They often arise without any previous inflammation from the proper fluid stagnating in the gland, or from extravasation, in consequence of contusion, &c. When a gland is the seat of a slow languid inflammation, it terminates in scirrhus instead of suppuration.

Externally scirrhi are perceived by the touch. Internally, the evidences are more obscure; but these we shall consider separately.

Scirrhus of the breast. See CANCER.

A scirrhus in the intestines is known by an irregular tumour, a sense of weight perceived in the part where it is seated. As the bulk of the tumour increases, the cavity of the intestine is lessened, and at last the canal is totally obstructed. In such cases easy gentle laxatives will palliate, and the internal remedies may be tried; but they seldom produce any advantageous change.

A scirrhous liver. A part of the liver, or its whole bulk, may become scirrhous, and this generally arises from inflammation. In warm climates the determination of the fluids to the liver is well understood, and when from any cause of fever that determination is increased, inflammation is the almost constant consequence. This inflammation is not, however, always of the more violent, active kind. In an organ where the circulation is languid it often proceeds with few alarming symptoms, till it has advanced beyond the power of medicine to relieve. In this state patients often return from India, and the symptoms and the remedies have been already detailed. (See HEPATITIS.) We have remarked also, that in this country we find abscesses, and sometimes scirrhus, in consequence of that languid inflammation, occasioned by concussions. Each is generally intractable, when it has proceeded to any considerable extent. The dyspeptic symptoms may be relieved, and the strength supported by a well-regulated plan of diet; but the disease seldom yields. The effects of a mercurial course we have already mentioned in the article quoted. An indurated liver is always shown by the sallow hue of the complexion; but it seldom occasions jaundice, unless it happens to press on the gall-duct. The part affected can be generally ascertained by pressing on the epigastrium, while the patient leans forward, or reclines in different positions.

A scirrhus in the spleen or *pancreas* cannot be easily ascertained, though we find an instance of the former, with the medical treatment, in one of the early volumes of the Asiatic Researches. The pancreas lies beyond the reach of pressure, and a scirrhus in that organ is only conjectured by the existence of dyspeptic symptoms, independent of any other evident cause. The juices of succory, and dandelion, the decoction of grass roots, &c. have been mentioned in these and other scirrhi of the viscera; but, if useful, they are so only as gentle

laxatives. In more advanced states, when suppuration comes on, the matter sometimes presses through the integuments, and is evacuated safely; the adhesion of the diseased part to the peritoneum preventing the access of air into the general cavity. See London Medical Transactions, vol. ii. p. 143, &c.

A scirrhus in the tongue sometimes happens, and remains many years indolent. In this case all attempts to relieve it should be avoided, as it may become cancerous. If painful, and moveable, it may be dissected out; but if immoveable, a part of the sound flesh should be separated with it, and the wound dressed with honey of roses and balsam of Peru. Mr. Home has taught us that wounds of the tongue produce no peculiar inconveniencies.

A scirrhus tonsil can no way be managed with advantage, except by means of the ligature, as recommended by Mr. Sharp. See his Operations and Critical Enquiry. But it never becomes cancerous. At least in numerous instances of long continuance we have not seen it assume this appearance.

A scirrhus womb is one of the opprobria of medicine; it, after some continuance, often degenerates into a cancer, and destroys the patient. Internal remedies seldom succeed.

Aretæus de Methodo Medendi, l. xiv. c. 4; Galen's Methodus Medendi, l. xiv. c. 5; Kaau's Dissert. de Scirrho; Van Swieten's Commentary on Boerhaave; Heister's Surgery; Riverius's Praxis Medica; Ambrose Parey's Works, vi. 24 and 25; Guy on Scirrhous Tumours and Cancers; Heberden's Observations in the London Medical Transactions, vol. ii. p. 143; Pearson's Principles of Surgery, vol. i. p. 209; White's Surgery, p. 52.

SCI'STUS LA'PIS, is a brittle and friable stone of the *argillaceous* class, *schista primitis* Haüy, iv. 437; ALUM; MILK, in which heated stones have been extinguished; *stercus caninum*; vinegar dropt into boiling milk, all bear the name *schiston*. Castelli.

SCLA'REA, (from σκληρος, because its stalks are hard and dry). See HORMINUM.

SCLA'REA HISPANICA. See HORMINUM SYLVESTRE.

SCLEROPHTHA'LMIA, (from σκληρος, and οφθαλμος, *the eye*). See XEROPHTHALMIA, DEPLUMATIO.

SCLERO'TICA, SCLERO'TIS, (from σκληρος, *hard*). The outermost coat of the eye, which in the posterior and far greater part of its circumference is white and opake; but in the anterior transparent, and then styled *cornea*. The remarkable whiteness of this coat arises from the expansion of the tendons of the muscles over its fore part. This tendinous expansion, though called tunica albuginea, is not properly a coat of the eye, for, like the conjunctiva, it is only partially spread over its fore part. See CORNEA, and OCULUS.

SCLOPETOPLA'GA, (from *sclopetum, a gun*, and *plaga, a wound*). A GUN-SHOT WOUND is a species of vulnus, and only a contused wound in the highest degree, supposed to be a more malignant kind from the poisonous nature of the gunpowder; but such wounds are only more intractable from the contusion, laceration, &c. which necessarily attend.

Contusion, however, and laceration are not equally the attendants of gun-shot wounds, unless we confine the latter to the bones; for wounds from splinters, or the ragged stones of a fortress, are of a very different nature. To be strictly accurate, we must confine, with Mr. Hunter, the term to contused wounds from a blunt hard body.

The momentum of any body is in the compound ratio of its weight and velocity; in this case, as we speak chiefly of musket balls, in the ratio of the velocity. From the momentum, the organisation of the part on which the ball impinges is destroyed, and apparently from the shock the irritability is also injured at some distance around. The part must consequently suppurate; but where the velocity is less it will sometimes heal by the first intention; and when a ball passes through a fleshy part, the suppuration takes place at the part where it enters, while the posterior wound will sometimes unite by the adhesive inflammation. In general the posterior, and even the lower, aperture heals most quickly. From the same cause, a gun-shot wound will not inflame very quickly, unless a bone is at the same time broken, and injury has ensued from its splinters. This latter differs in its nature from the former, and is equally distinguished in its consequences.

Splinters are, in general, more common, in proportion to the diminished velocity of the ball; for, if sufficient to break a bone, a slighter blow increases the number of splinters; a violent one will carry away a piece of the bone, without shattering the rest. In the same way, when the velocity is considerable, an artery will be cut through, and it will bleed freely; when small, it will be compressed; and, when carried inward, somewhat elongated, which will straiten the canal, and the bleeding will be less violent.

The extent of the injury, on account of the destruction of the life of a part, is seldom at first ascertained, for the whole is a confused mass; and though we know what parts lie below, we cannot ascertain how far the momentum has extended. When, then, the slough comes away, it may bring with it a part of an artery, and a fatal hæmorrhage ensue, or a part of an intestine, occasioning a penetrating wound in the cavity of the abdomen, &c. It is highly necessary, therefore, to be on our guard, and ready to avert any dangerous consequence, so far as it lies in our power. A fatal hæmorrhage may ensue from a loss of some part of the coats of an internal artery, for instance, without its being in our power to prevent it. When in the neighbourhood of vital parts, the destruction of irritability, which probably extends to some distance around, and perhaps below, produces the most disagreeable consequences. It is scarcely less unfortunate when the functions of the part, though not, strictly speaking, vital, are essential to life, or when from their utility, or the great danger of restoring their structure, as in joints, the effects long continue.

The treatment of gun-shot wounds seems to have been for ages erroneous. If a ball is fired through a plank, the aperture it makes is of a less diameter than the ball. This, though difficult of explanation, apparently led to the practice of dilating the wound, as its aperture was less than that through which the bullet, the clothes, and integuments were conveyed. Mr. Hunter seems first to have corrected this mistaken idea, and to have shown, that suppuration, without dilating the wound, discharges every extraneous substance, except what may safely remain. If the wound be en-

larged, it must be to extract the ball; but this we know will in very few cases produce any inconvenience. In fact, the circumstance formerly mentioned seems not to have occurred to practitioners, viz. that the irritability or life of the part is apparently destroyed at some indefinite distance round the wound, so that in reality the aperture is larger than the substance which originally produced it. Another reason for dilating the wound, suggested by the danger of the skin healing before the bottom of the aperture, is not well founded; for it seldom does so: and when this happens, the event as frequently follows the dilatation as in those instances where it has been omitted. If bones are splintered, some time is required before these are wholly separated, and usually some dead portion requires separation also: for these purposes nature usually provides without the assistance of art.

Openings, according to Mr. Hunter, may be admitted where the first wound is small, and a splintered bone, or any extraneous matter, presses on and irritates a part essential to life; where a wounded vessel requires a ligature; where the skull is suspected to be fractured; where a separate splinter or an extraneous body can be easily extracted; or when any viscera are displaced by the ball which require being restored. In other instances the ball is suffered to remain; and, if not in contact with a vital part, so as to injure its functions, does little injury.

The innocuous nature of a ball, remaining, was discovered sometimes by the difficulty of finding it. This has arisen from a collapse of the parts, and their leaving no direction in which the course of the offending body could be ascertained, and sometimes from its change of direction when it meets any obstacle. When it passes under the skin, even to some depth, it usually leaves a red line, which arises from the irritation during its passage, since it is not inflammation or ecchymosis; and when the ball has again escaped, Mr. Hunter advises an opening to be made between the two apertures, as nature will at last more tediously produce the same effect by an abscess. Where the ball has passed between the skin and the bone, he advises the aperture to be made through the whole course, as the skin unites with difficulty to the bone. But even if the ball passing through any part be felt under the skin on the opposite side, Mr. Hunter thinks it on the whole better to leave it, as if the skin is deadened it will slough out, if not, will be productive of no inconvenience.

GUN-SHOT WOUNDS OF THE ABDOMEN are not always fatal. If they do not penetrate the integuments and muscles they require no peculiar care. If they penetrate and wound the epiploon or mesentery, parts not essential to life, the access of air is prevented by the inflammation which supervenes. Even if the ball has penetrated through the body, and not wounded any important part, the slough separates, allowing the extraneous bodies to escape, while the inflammation prevents the access of air to the general cavity.

Wounds of the liver are attended by a faint sickly pain, and, when in the right or left lobe, there will be a pain in the corresponding shoulder. Wounds of the stomach produce great sickness and vomiting of blood; in the *intestines* a discharge of blood. The sickly pain will be greater, and the blood of a darker colour, as well as more mixed with fæces, the higher the wound. A wound in the kidneys or bladder is attended with bloody urine; but with little pain. The spleen, when wounded, produces no discriminating symptom. Independent of these symptoms, wounds of the stomach, intestines, kidneys, ureters, or bladders, may induce others, in consequence of the escape of their contents. This is followed by peritoneal inflammation and tension, which soon terminate in gangrene.

GUN-SHOT WOUNDS IN THE THORAX are generally considered as hopeless. Yet we should recollect, that the patient has some advantages over one who is wounded by a cutting instrument. The hæmorrhage, for instance, is not so violent, for the reasons stated; and the external aperture does not readily close: but, on the other hand, from the access of air, and the collapse of the lungs, the adhesive inflammation does not readily take place unless there were previous adhesions, and sometimes, though rarely in the lungs, the suppuration extends to every part of the wound in its whole depth. In general, superficial dressings, with the most perfect tranquillity, will secure the patient, if no very essential injury, as the wound of a large branch of the pulmonary vessels, has taken place. *Concussion and fracture of the skull* from a musket ball differs in no respect from the same effects from any other blow.

Compound gun-shot wounds, analogous to compound fractures, often heal at first very rapidly; but when on their contraction the irritation of the splinter is felt, the incarnation is more slow, and they become fistulous. This even happens when the wounds are dilated; for we can only thus separate the perfectly detached splinters, and the others will in time produce the same effects. In this case tents have been usually employed; but if these are omitted there is little danger of the wound healing. If exfoliation is expected, the bone may be exposed to the air to expedite the process; but in general nature forms the abscess most convenient for its exit. The only objections to this rule are when the joints are affected, particularly the small joints of the extremities; for in these, unless the sore is kept open, the suppurative process is disposed to extend; or when the sore continues fistulous, by a disease at its fundus. In these cases large openings produce suppuration and granulations in a short time.

To remove parts which are incurable is an attempt which should, if possible, be delayed. The hurry, the increased energy, the fever, indispensable to active exertions in battle, raise a commotion, which, when joined with the irritation of an operation, renders the event almost hopeless. Few can support the loss of a large limb till the inflammatory state is reduced, and it must be still more dangerous, when the additional causes of irritation just mentioned are combined. *Amputation*, therefore, should be delayed, unless an hæmorrhage from the wound of a large artery renders it indispensable, and, in that case, the previous hæmorrhage renders it more safe. The operation, however, seldom succeeds; and in general the greater proportion in which amputation has been delayed recovers. See FRACTURA, *Fractured leg*.

In the field we may indeed remove a limb, which hangs by a small piece of flesh only; for the amputation has been already effected by the ball: in the field, also, we may remove hard bodies sticking in the wound, replace prolapsed or protruded viscera, or remove

whatever may impede or render the removal inconvenient.

In general, *bleeding* has been employed in the first instance, and, from the agitation, &c. just described, it is undoubtedly a necessary measure; but the degree of fever and excitement, it must be considered, are temporary only, and when these recede, the constitution flags in proportion to the former increased energy. Thus we find that a second bleeding seldom succeeds when the fever at first was high. In general, it is observed that every injury bears bleeding better, the nearer the part affected is to the chest. The joints and distant parts are more susceptible of irritation than inflammation. When there is much pain and local inflammation, *leeches* are highly necessary, and particularly useful, and in every instance low diet, with gentle laxatives, are essentially necessary.

Bark has been given freely and indiscriminately; nor is it easy to lay down general rules. The great excitement has been said to be soon succeeded by collapse, and we have seen that the wounded part must be separated by the powers of nature. The bark should, therefore, be given early, nor should we wait for the remission of the inflammation if the pulse are low. It is better to direct it too soon than too late. Should the pulse rise too high under its use, a circumstance which seldom happens, small bleedings may be interposed.

Irritation and pain must be removed by *opium*, whatever the requisite dose may prove, and mortification is relieved as when it arises from other causes. The *volatile alkali*, with *musk*, recommended by Mr. White, has been in many instances highly useful.

See AMPUTATIO; Bell's Surgery, vol. v. p. 325; White's Surgery, p. 99; J. Hunter's Works.

SCLOPETA'RIA A'QUA, (from its use in curing gun-shot wounds). See ARQUEBUSADE.

SCOLOPE'NDRIUM, (from its leaves resembling the σκολοπενδρα). See LINGUA CERVINA.

SCO'LYMUS, (from σκολος, *a thorn*, from its prickly leaves). See CINARA.

SCO'PA RE'GIA. See RUSCUS.

SCOPULA, (a dim. of *scopa, a broom*). A BRUSH. The flesh-brush promotes a brisk circulation, and free perspiration. Persons with weak nerves, the sedentary and paralytic, should supply the want of exercise with half an hour's rubbing every night and morning. See FRICTIO.

SCORBU'TICUS SU'CCUS. *Spiritus cochleariæ aureus.* See COCHLEARIA BRITANNICA.

SCORBU'TUS, (from the German word *scharbock*). The SCURVY, *gingibrachium*, and *gingipedium*, because the gums, arms, and legs, are affected by it. Hippocrates considers it as a disease of the spleen, De Internis Affectionibus; and Dr. Cullen places it among the *impetigines*, defining it in the following terms. After living on putrid, salted animal food, in a cold country, without recent vegetable substances, universal debility, attended with fetid breath, loose, spongy, bleeding gums, different coloured spots in the skin, most commonly livid, particularly at the roots of the hair.

As the causes of this disease must always have prevailed, its antiquity is probably high. Some of its symptoms are mentioned by Hippocrates, and it seems to be mentioned distinctly by Strabo, lib. xvi. sub finem. Rousseus also supposes it to be the disease which so severely afflicted the Roman army under the command of Cæsar Germanicus; Pliny, xxv. 3. The accounts, however, are vague and unsatisfactory, and that of Joinville in his History of St. Louis is more striking. He refers the disease to the army eating a kind of fish (bourbettes) that feed on human bodies; and describes the spots, the wasting of the calves of the leg, and the hæmorrhages (p. 63). It is remarkable that he calls it the disease of the East.

As a disease of mariners, it first particularly attracted notice in Vasco de Gama's famous voyage, 1497, and frequently occurred in voyages during the next fifty years; but the disease was first particularly mentioned in the Botanologicum of Euritius Cordus, who recommends the lesser celandine for it. The first professed work on the scurvy seems to be that of Ecthius, in 1541, though probably not first published; but the first in which the disease was distinctly noticed at some length is that of Wierus, in 1567; but as Wierus eclipsed his cotemporaries, so he was in turn obscured by Eugalenus, whose treatise was for many years the standard. We have introduced this short early history chiefly to remark, that it is mentioned by these authors as an eastern or northern disease, particularly observed in Holland, and on the north of Germany and Denmark, where it seems to have been the genuine offspring of inactivity, gloom, and damp. At no great distance of time, however, it was appropriated to this country, and it has continued to haunt the minds of many imaginary sick men, as well as to be an opprobrium to the country and its inhabitants. The delusion is not yet conquered, and almost every patent medicine secures itself a favourable reception, by pretending to relieve and eradicate the scurvy.

The imputation was not, however, wholly groundless. England was formerly, in many parts, damp and marshy. Stall-fed oxen were uncommon, and the Englishman, accustomed to an animal diet, lived chiefly during the winter on salted provisions. The diet, the damp, and the gloomy unsocial modes of our ancestors, were well calculated to produce scurvy: it was therefore a common disease, which the earliest vegetable sprouts were well calculated to relieve, and from whence the numerous tribe of antiscorbutics was derived. It is now equally rare with us, and with our more southern neighbours; for the more acescent diet, the comparative disuse of salted provisions, and the numerous antiseptics introduced to our tables, with more social dispositions, and less retired manners, have destroyed the predisponent and exciting causes. The disease rately occurs, at present, even at sea.

The first appearance of scurvy is evinced by a pale, bloated complexion, lassitude, and a disinclination to motion, with diminished energy in every muscular exertion. If the gums are then examined, they will be found spongy, apt to bleed on being touched, the teeth loosened in their sockets. The skin is sometimes rough, but more often smooth and shining, covered with blueish or livid spots, which do not rise above it, and these spots often coalesce in large blotches, particularly in the legs and thighs. About the same period old ulcers often again break out, old fractures are again disunited, and the slightest mercurial quickly produces salivation. The ulcers discharge often a sanies, or are covered with coagulated cruor, which is renewed as often as it is separated. The edges are livid, with irregular edges, apparently of new flesh, which often in-

creases to a bloody fungus. During the whole of this period the appetite continues good, and, though tensive pains are occasionally distressing, yet, on the whole, the patient feels little inconvenience.

The state of the bowels is very various. The stools are often frequent and offensive, but costiveness is sometimes obstinate. The urine is commonly high-coloured and fetid; the pulse feeble, and seldom quick. A weakness in the joints appears early, but increases with the disease, and a shrinking of the flexor muscles renders the limbs useless. The calves of the legs shrink, with sometimes an irregular hardness, and at length become œdematous. The last stage is truly distressing. Blood is frequently discharged from the intestines, bladder, &c. The slightest motion brings on faintness, and often immediate death. Though catchings of the breath and occasional syncope appear in the more early stages, yet they only become considerable and dangerous in the later; yet so disproportioned is the pain and the actual feelings of weakness to the real state of the patient, that he often attempts exertions, and dies in the first action. When animated by any powerful motive, as to get on shore, or sometimes to join in an engagement, he will for a time succeed, but death follows the first exertion or the first remission of his energy, for it seldom cuts him off in the midst; and if a scorbutic seaman can survive the first movement, he will often bear to be carried on shore, though he may not long outlive the removal.

We have remarked, that, for many years the scurvy was considered as the endemic of Holland, and the lower districts of the north of Germany. On the shores of the Baltic it was also for a long time endemic; and no stronger proof can be alleged than the great anxiety shown by Burchard and Alberti to disprove the accusation. Mertens allows it to be frequent in Russia, and various authors admit it to be common in different parts of Germany, particularly in Thuringia. It has occasionally appeared as an epidemic in fleets and armies, particularly in the Russian, and contagion has been sometimes suspected. In Fourcroy's Medical Journal we have an instance of its being quickly fatal; but in this case there was much reason to suspect the complication of another complaint. It is greatly aggravated, when combined with lues. In some instances it has been supposed hereditary.

On dissection, effusions in the different cavities were constantly discovered; and Dr. Lind has mentioned his observing the fluid peculiarly acrimonious, probably saline. Bloody effusions in different parts had occurred, and even in the interstices of the muscles. The fleshy parts were soft and tender, giving little resistance to the slightest impression; and the epiphyses are sometimes separated from the bones. (Saviard and Poupart.) The brain was, however, sound, and the chylopoetic, as well as the thoracic, viscera usually healthy in their appearance; but spots, and sometimes effusions, were discoverable on the mesentery, stomach, &c. which were not mortified sloughs, but of a firm, resisting nature. The mesenteric glands are sometimes enlarged; different viscera are obstructed; and, in one instance, an ulcer was found in the heart.

Scurvy is not peculiar to seamen or navigators. There are instances of its occurring in besieged towns; in low damp situations, where the food has been deficient in quantity, or of a low quality. In one recorded instance it occurred in a young woman, who had subsisted almost wholly on tea.

The nature of scurvy has been apparently misunderstood. The dissolved state of the blood, the general weakness, the spots, &c. seem to point out a putrescent, almost a putrid state of the vital fluid as its cause; and this opinion led to the many experiments on putrefaction, which we have had occasion to record. Yet blood, when taken, had a buffy crust, and life was certainly incompatible with the degree and continuance of a state so highly putrid, if the appearances were really from putrefaction. The most fatal blow to the theory was, however, the effect of different remedies; for, while the bark and vitriolic acid were useless, acid fruits and oleraceous plants immediately relieved. But before we can engage farther with advantage in this enquiry, it will be proper to consider more minutely the fancied or the real remote causes, and to assign the true value of some supposed sources of this complaint.

Its frequent occurrence in sea voyages led at once to the suspicion that scurvy was owing to sea-salt; and the fact that solutions of almost every neutral prevented the coagulation of the blood, supported the opinion. Salt was also septic in small quantities, and all septics promoted the attenuation of the fluids. The theory was supported by numerous experiments, and even Dr. Lind, in the former editions of his work, following the opinions of sir John Pringle, countenanced it. Yet this opinion was opposed by numerous observations, by some of the remote causes, and the effects of remedies. Scurvy appeared where the diet was by no means saline; in damp situations, whatever the diet were, unless generous and stimulating: it was prevented by cheerfulness and exercise; cured by remedies which had no very striking effect in a chemical view.

Copper was supposed to be a cause introduced into the system of sailors, by a neglect in cleaning the culinary vessels of the ship (Travis. Medical Observations and Inquiries, ii. 1.); but this idea is evidently fallacious; and Colbatch, who attributes the disease to a superabundant alkali, is not far distant from those who derive it from a septic poison. Unfortunately the alkalescent plants are the best remedies. A deficiency of water and damaged flour have been accused with as little justice. Yet there is one point in which the damaged flour and the salted provisions meet, viz. in affording a diet of very inferior alimentary powers; but each is only an exciting cause, though, when long continued, each may assist in inducing the disease; for it is obvious that where such provisions only can be procured, the causes which we shall soon mention must concur.

We have remarked that scurvy is the offspring of confined air, of damp, of distress, of inactivity, or, on the other hand, too great fatigue, as well as an unalimentary diet. To all these seamen are exposed. Their births under the old regime were seldom ventilated, and usually damp. In long voyages, and in desperate attempts, the mind was in despair; in moderate weather the exertion was inconsiderable, and from the thoughtless seaman's improvidence, the clothing was insufficient, and the diet that only of the ship. The few aids which his wages might procure were sacrificed to his luxuries, viz. ardent spirits, which were equally injurious. If we look at the disease, when it occurs in other situations, we shall find the same concurring causes; and when we examine the best prophylactic

systems, we shall perceive that they are designed to obviate the effects which result from them.

The first effect must be debility, and a deficiency of perspiration. We accordingly find first a languor and a dry skin. Diminished powers of digestion follow, and the result is a defective assimilation, or a depraved state of the fluids. The original source of the disease is therefore depressed energy of mind and body; the consequence is diminished irritability and a diminished power of all the functions, particularly those of the digestive and assimilatory organs. The appearance of the blood shows a deficiency of oxygen, and the confined situation of the scorbutic patient sufficiently explains the source; but in every circumstance, debility is attended either with a deficiency of the red particles of the blood, or a change in their vivid hue. This effect we have often remarked, though we were unable to explain it. Numerous authors have observed that either a lower quality of the food or humidity of the air are among the causes of scurvy; and Storck, in his Annus Medicus, i. 22, has attributed the disease, as it occurs in hospitals, to these sources. In moist situations, especially where languor, inactivity, and distress of mind are combined, scurvy has been a frequent disease. That the principal effect of the remote causes is on the nervous system, the earliest symptoms sufficiently prove, and sir Francis Milman has collected them with this view. Dr. Trotter, who has examined scurvy in almost its exclusive seats, refers the cause to the blood; but we have often remarked that almost every change in the vital fluid is referable to some disease of the nervous system.

As the blood, however, is ultimately affected, and as the most striking symptoms are produced in this fluid, much satisfaction would result from well-conducted chemical inquiries into the real changes discoverable in it. No such, however, have been offered to the public since the nature of the circulating fluids has been more accurately ascertained. We can only therefore approach the solution of the question by induction.

The colour of the blood shows a deficiency of oxygen, and perhaps an accumulation of carbone. This, as observed, may be owing in part to confinement, but is certainly connected with debility. Each cause may have its influence. An equally certain change is a deficiency, or a more perfect solution of the gluten and fibrin. A want of irritability is connected generally with a deficiency of the fibrin, and this portion of the blood apparently depends on a strong, vigorous constitution. The gluten is also seemingly deficient; but we know that it may be more copiously dissolved in the serum by an additional quantity of any ammoniacal salt; though in weak constitutions its proportion is certainly diminished. The observations of Dr. Lind show the existence of an acrimony, probably a saline one, in the blood, which may, as just remarked, promote the solubility of the gluten. The nature of the salt has not, however, been ascertained. We now know that the slower concretion of the blood will account for the buffy coat observed on bleeding scorbutic patients, and it is expressly observed that the buff is tender.

In preventing the scurvy, the sagacity, the judgment, the experience, and perseverance of one man have done more than all the speculations of philosophers; and he has directed all his views to the causes laid down. We mean Captain Cooke; but while he leads the way, numerous improvements have, for the last twenty-five years, added to the comfort and health of seamen.

The ship in the first place, by frequent drying and ventilation, is preserved from damp and from foul air; the men are encouraged to change their clothes, and compelled, for so thoughtless is the British seaman that compulsion will be requisite, not to sleep, if it can be avoided, in those which are wet. Their clothes are also adapted to the climate in which they may be, and in the higher latitudes they are defended from cold with peculiar anxiety. In the night the crew is often divided into three, instead of into two, watches, that is, one third of the crew only are on deck, and each man has consequently eight out of twelve hours free from duty. The mind is usually amused in the intervals of labour by encouraging every species of amusement, every kind of active exercise, which keeps up the perspiration, and prevents the dangerous ennui. Cleanliness should be constantly encouraged, and indeed enforced; the linen frequently changed; the hair combed; and the body washed in sea-water. Fresh water for the linen, and domestic purposes, should be provided in plenty, and if deficient, rinsing the linen in salt water will be of service, and it will not be dangerous to put on the shirt while wet. Water, however, should be taken in at every land, where access to it is practicable, and on each occasion all the water formerly collected should be started. It is best preserved from putrefaction by charring the inside of the casks; but if aerated barytes could be readily procured, it might be preserved by a small portion of vitriolic acid, and this would be completely separated by the earth, while some portion of the carbonic acid gas remaining would render the water more wholesome.

The diet of seamen should be particularly attended to. On the West-India station, coffee, and sometimes cocoa, forms, with sugar, a salutary beverage for their breakfasts; and whenever fresh animal food can be procured, it should be served out in its freshest state. Oatmeal and flour, with raisins and sugar, will furnish a salubrious diet, in different forms; and the pease, which can be preserved in all climates, furnishes a little variety to their scanty fare, without adding greatly to its salubrity.

This diet, with the former precautions, will often prevent the scurvy from appearing, or from extending in any considerable degree; but modern observation has added many other prophylactics.

As vegetables are almost the only remedy for scurvy, so it has been a subject of the greatest anxiety to preserve them, with their peculiar qualities, scarcely impaired. The juice of acid fruits has been preserved in different ways; but all are too expensive for general use, and the more practicable methods rarely preserve the juices unchanged. Lemon juice, boiled down to the consistence of a rob, is changed in its quality: the mucilage is burnt, and the acid partly decomposed. Some decomposition also takes place when kept in bottles most carefully stopped, and the acid is apparently changed into a resinous substance of a bitter taste, not owing to the access of air; for it occurs when the external air is most carefully excluded, and in the darkest situations.

Sour-crout, sliced cabbage packed closely with layers

of salt, and firmly pressed together, is preserved with little change, except what appears advantageous, viz the acetous fermentation, from whence its appellation is derived. It seems to be a very useful aliment, and a pleasing, as well as a wholesome, condiment, with the usual salt provision.

As drinks, cyder and spruce beer are highly useful. The latter may be easily prepared from the extract of the spruce fir, which is uninjured by keeping. The most salutary drink, however, either as such, or a medicine, is the sweet-wort. Three parts of boiling water are poured on one of ground malt, which, when well packed in small casks, is uninjured by any climate for a considerable length of time. It is ground in a hand-mill when used, and is suffered to infuse for ten or twelve hours, when the clear liquor is poured off. By these means the scurvy is often prevented, and high degrees of it are cured even at sea. A necessary precaution, however, is to take in vegetables at every land where the ship touches; and, while the stock lasts, to feed the crew almost wholly on them.

Fresh vegetables, we know, are the only effectual remedy; yet they are not highly alimentary; they do not furnish oxygen, or add to the proportion of fibrin and gluten. It would appear, therefore, that the causes assigned were theoretical, did not the prophylaxis support them. Various are the suppositions on which their utility has been thought to depend; but we find none that has the semblance of probability, except their acescence. All vegetables are not, however, equally effectual, though all are useful. The acid fruits are particularly beneficial; but what are styled the alkalescent plants, the tetradynamiæ, including the alliaceæ, are particularly so. This is partly owing to their acrimony, by which they apparently excite the languid powers of the stomach; and, in confirmation of this idea, we find, from Dr. Lind, that the virtues of lemon-juice are greatly promoted by combining it with Madeira wine. The first effect of this change of diet is a moderate diarrhœa, attended or followed by a moister skin, a more genial glow, and spirits less depressed. The changes from this diet are rapid, especially on shore. If the sailor survive the first removal, even a few days will sometimes raise him to comparative strength and spirits: a fortnight often effectually restores him.

Few other remedies are successful; but many are recorded by different authors. We pass over the scorbutic juices, the hydrolapathum, the juice of celandine, salted cucumbers, preserved gooseberries, the horse-radish, menyanthes trifoliata, potatoes, &c. as these are only different kinds of vegetable matter in more or less active forms. The vegetable acids have been supplied by spirit of salt, of vitriol and nitre; by cream of tartar, with sulphur, and by fixed air. The latter has been exhibited in effervescing draughts, and in fermenting mixtures, and is the only remedy of this kind which has any claim to our confidence: its utility, however, is slight or uncertain. Such are the contrarieties in medicine, that even alkalis (the cornu cervi) and alum have had their advocates. Lime-water and the calamus aromaticus are recommended by Stoll.

The great debility, and the dissolved state of the fluids, indicated the use of the bark; but it has had few supporters, for it has scarcely in any instance been useful. The same principle, however, seemingly led Cullen to recommend the arnica, Stoll to use the iron, and an author in the Journal de Medecine to speak favourably of the lunar crystals. The hemlock, it is said, has been employed with advantage; but the strongest testimony in its favour is that of Schlinder, who used it with success in the Russian armies. He employed, however, the expressed juice, and combined it with four times the quantity of orange juice.

Some of the more pungent vegetables, as the mustard, the sedum acre, and the lepidium, have been recommended with the myrrh, the rubia tinctorum, and others, on a more uncertain foundation. Purgatives have been sometimes given, and mercury, either in small doses or in such as to raise a salivation. Our collection of remedies is by no means exhausted; but we shall only add one, said to be of more importance; burying the patient, so high as the neck, in warm sand. This is by no means an unpromising plan.

Though these medicines are useless in curing the disease, some of them are advantageous in relieving particular symptoms. The spongy gums may be washed with a decoction of the bark, acidulated with the muriatic acid; and ulcers spreading in the mouth, touched occasionally with the mel rosæ, acidulated with the same acid. If a salivation comes on, camphor, with some cordial, mild, opiated electuary, may be repeated every four or six hours, for it generally arises from a dry skin. If the legs are œdematous, gentle frictions are useful; and in cases of hæmorrhage, the mineral acids may be given at proper intervals. But though some advantages may be obtained by these particular administrations and applications, yet all these and the rest of the symptoms disappear in proportion as success follows the general method of cure.

The scorbutic ulcer also, called the putrid ulcer, affords no good digestion, but a thin, fetid sanies, mixed with blood, which at length hath the true appearance of cruor caked on the surface of the ulcer, and with difficulty wiped off. The flesh underneath is soft and spongy; and if the sloughs are removed they soon return: the edges are generally of a livid colour, and puffed up with excrescences of proud flesh, arising from under the skin. From compression, the fungus is apt to mortify; and the limb always becomes œdematous, painful, and for the most part spotted. As the scurvy increases in the general habit, the ulcer shoots out a soft, bloody fungus, which the sailors call, from its resemblance, *bullock's liver:* it often rises in a night to a great size, and, if destroyed, will be reproduced in twenty-four hours. These ulcers do not speedily affect the bones. The slightest wounds or bruises in scorbutic patients degenerate into such ulcers, which by their remarkable putridity are easily distinguished from all other sores. In some instances these ulcers are attended with soft spongy gums.

As an internal medicine, when scorbutic ulcers attend, Dr. Kirkland highly recommends the muriatic acid given in water, or mixed with the bark. Mr. Bell observes, that their cure depends much upon the relief of the disease of the system, which should be corrected previous to any attempt to cure the ulcer, which may be treated with the unguentum Egyptiacum, and the mel rosarum, with a small portion of vitriolic acid. In the milder instances, such as usually happen

in England, the cause is more frequently the want of due nourishment; and better food, with a more plentiful supply of it, and a little good wine, are the most effectual aids. The bark is more useful in this than in any other kind of ulcer, and it should be given as freely as the stomach will admit. As a dressing, pledgets of lint dipped in a strong decoction of the bark, or the carrot-poultice, will correct the fœtor from the discharge. When this is vanished, and the sloughs only are to be removed, the ungt. resinæ flavæ, with hydrargyrus nitratus, will be the most convenient application; and the cure is finished by gentle pressure. What is said with regard to the treatment of scorbutic ulcers is applicable to all sores connected with a dissolution of the fluids, from any other cause, viz. those which remain after critical abscesses, or that succeed to putrid fevers.

See Lind on the Scurvy, third edition; Macbride's Essays, essay 4; Wieri Observationes; Eugalenus de Scorbuto; Willisii Opera; Pringle's Diseases of the Army, Appendix; Hulme de Scorbuto; Millman's Inquiry; Trotter on the Scurvy; Monro in the Medical Transactions; Zeviani Sopra lo Scorbuto; Aascow in the Copenhagen Transactions, v. i.; Gutbrie and Clark, Medical Commentaries, Edinburgh; Huxham's Works; Medical Museum, vol. i. and ii.; Hoffmanni Opera, vol. ii. p. 421, &c.; Bell on Ulcers, edit. 3. p. 408.; Cullen's First Lines, vol. iv.; Medical Transactions, vol. ii. 325. 471; Lond. Medical Journal, vol. ii. p. 117. 388.

SCO'RDIO ELECTA'RIUM E. See DIASCORDIUM.

SCORDIUM, (from its resembling garlic, σκοροδον, in smell); *trissago palustris, chamædrys palustris allium redolens;* WATER GERMANDER; *teucrium scordium* Lin. Sp. Pl. 790. The flowers resemble those of the chamædrys, one or two proceeding from the alæ of each leaf; the calyx tubulated; the leaves hoary. The leaves when rubbed betwixt the fingers yield a moderately strong alliaceous smell, and are bitter to the taste: by keeping the garlic smell is lost, and the bitter improved. The leaves moderately dried yield their virtue to water or to spirit; but though water is impregnated with the flavour, no essential oil is obtained, though a large quantity of the leaves are employed. An extract made from the spirituous tincture is the best. The plant is recommended as an alexipharmic and corroborant in putrid diseases; and was long considered as an antiseptic and alexipharmic of singular power; and it has been recorded as successful in the plague which raged in Turkey. Bergius calls it antiputrescent, tonic, diaphoretic, diuretic, and resolvent; while others employ it only in antiseptic cataplasms and fomentations. It is, however, now entirely neglected. See Lewis and Cullen's Materia Medica; Neumann's Chemistry. See SALIVA SYLVESTRIS.

SCORDO'TIS and SCORODO'NIA, (απο τε σκοροδον οζειν, from its smell). See SALVIA SYLVESTRIS.

SCORPIO, Lin. System Naturæ, vol. ii. 1037. Modern naturalists, particularly La Treille, have arranged this animal with some of its congeneres, the thelyphonus, (confounded with the phalangia by Linnæus, and with the tarantula by Fabricius); the chelifer and phyrius, (arranged also by Linnæus as species of phalangium), under the family name of *scorpionides*. The characters of this group are, "a wingless body; head not distinct from the thorax; without antennæ; jaws composed of two claws; abdomen separated from the thorax, or confounded with it, but distinguished by the appearance of rings, with not less than eight feet, and palpæ, in the form of arms, distinguished by a kind of hand." The characters of the scorpion are, "palpæ, or arms, terminated by an enlarged articulation, with closed claws, and the inferior lips of the two portions short and simple." There are from six to eight species, of which we shall only distinguish the European and the African scorpion.

The scorpion has an elongated body, with from six to eight eyes, of which the largest are in the middle of the thorax, and the others, very small ones, on the sides. The thorax is united to the abdomen, and the latter consists of distinct rings, terminated by a tail formed by six knots, the last of which is an oval mass, elongated above, in a pointed sting. It has eight feet, and two dentelated laminæ, in the form of combs, under the belly.

Scorpions are found in the warmer regions of both worlds, inhabiting neither the arctic nor even the temperate regions. Those of Europe are scarcely more than an inch long, while in India they are sometimes five inches. The tail is moveable in every direction, and the scorpion usually carries it raised above its body, bent in an arch over its head.

The bite of the scorpion, according to Redi and Maupertuis, is not always poisonous, though it occasionally is so. The full effect of the venom seems only to be felt when the powers of the animal have not been for a long time exerted. The European species are scarcely in any instance capable of inflicting a fatal wound. The remedies are oil and warm sudorifics. It was usual to order oil in which scorpions had been suffocated; but the addition of the insect is an idle refinement. Emollient cataplasms are said to be also useful; but, as the bite is seldom dangerous, many remedies have obtained an unmerited credit.

The scorpion devours its own young, and even its companions; but its favourite food is flies, and particularly spiders. The female is very prolific, producing from forty to seventy young ones, which are born alive. The females are larger than the males; but the sexual organs have not yet been discovered. They are supposed to be placed between the dentelated laminæ.

Herbst's Monography of Scorpions; Redi de Insectis; La Treille in Sonnini's edition of Buffon's Natural History.

SCORPIOI'DES (from σκορπιος, *a scorpion*, and ειδος, *likeness*; because its leaves resemble the tail of a scorpion). See ORNITHOPODIUM.

SCO'RPIUS, (from the same). See GENISTA SPINOSA MAJOR.

SCORZONE'RA, (from *escorzo*, a Spanish word for *viper*, because it is said to be effectual against the bite of vipers, and that this animal will not hurt one whose hands are rubbed with it), *escorzonera, viperaria, serpentaria Hispanica*, COMMON VIPER-GRASS, *scorzonera humilis* Lin. Sp. Pl. 1112, hath large sharp-pointed leaves, with a prominent rib in the middle; on the tops of the branches are yellow flosculous flowers, followed by oblong, roundish seeds winged with down: the root is long, single, from the size of a goose-quill to that of

the little finger, of a dark colour on the outside, and white within. It is perennial, and a native of Spain, growing in our gardens, though that from Spain and from the island Amagria is superior. The roots are alexipharmic, antiseptic, and deobstruent, but only used as a nutritive aliment, in which the S. Hispanica excels. The juice is sweetish, and the roots, when boiled, do not prove very flatulent. See Miller's Botany. Lewis and Cullen's Materia Medica.

SCOTODI'NIA, and SCOTODI'NOS, (from σκοτος, *darkness*, and δινος, *giddiness*). See VERTIGO.

SCOTO'MIA, (from σκοτος, *darkness*). See VERTIGO: sometimes a synonym of amaurosis.

SCO'TOS. DARKNESS, or DIMNESS of SIGHT.

SCROBI'CULUS CO'RDIS, (a dim. of *scrobs*, a *ditch*). See ANTICARDIUM.

SCRO'FA, (*quia scrobes gaudeat facere*). A HOG. See PORCUS.

SCRO'FULA, (from *scropha, a pig*, an animal subject to tumefied glands, in common language styled *measles*), *struma*, *choiras*, *chœras*, *ecrouelles*, and KING'S EVIL, because Edward the Confessor, and other succeeding kings, both of England and France, have pretended to cure it by the touch. Dr. Cullen places it among the *impetigines*, defining it tumours of the conglobate glands, particularly of the neck, attended with a swelling of the upper lip and column of the nose; a florid countenance, smooth skin, and tumid abdomen. He styles it *scrofula vulgaris*, when without other disorders, external and permanent; *s. mesenterica*, when internal, with loss of appetite, pale countenance, swelling of the belly, and an unusual fœtor of the excrements; *s. fugax*, when temporary, caused by absorption from neighbouring sores or eruptions; and *s. Americana*, when joined with the YAWS; q. v.

Children of scrofulous habits have an unusually florid complexion, and a fulness of the face, and the tumours are rarely painful, or easily brought to suppuration. A multiplicity of symptoms attend different patients, but only a few of them are observed in any individual; but among the most frequent, besides the tumours chiefly discovered in the neck, are a swelled upper lip, soreness in it, and about the nose and cheeks: the tumours sometimes break, and heal with difficulty. The eyes are inflamed, and a sharp humour running from them corrodes the cheeks: the lids are swollen, red, and in a morning cannot easily be opened: the globes of the eyes are swelling and protuberant; the adnata commonly inflamed from the irritation of the lids, with the usual attendants of chronic ophthalmia.

The tonsils are very frequently enlarged, and the tumours are usually very conspicuous in the neck. The bronchocele is by no means a symptom of scrofula, since it is common in habits essentially distinct, and seldom appears in those truly scrofulous. We have reason to suspect tumefied glands in the lungs from a dry hectic cough, which terminates, often rapidly, in consumption; and in the mesentery, from a tumefied abdomen, with atrophy, often independent of fever. Scrofula often also attacks the bones, particularly the articulations, and those in which the lymphatic glands are scarcely conspicuous, or, as in the metacarpus and metatarsus, where no glands have been discovered. The most formidable diseases of the hip-joint and knee are apparently of a scrofulous nature. Various other internal diseases have been attributed to this source, but apparently without a sufficient foundation.

Scrofula is undoubtedly hereditary, and when either parent is affected, the child only which resembles that parent in complexion and appearance is affected by the disease. It is almost peculiar to the growing state; for in a maturer age the effects only remain in a tender state of the eye-lids, and some remaining tumours near the joints. It is rarely dangerous after the age of twenty-five. Steatoma, atheroma, and meliceris, are distinguished from scrofula, as their seat is distinct from glands, and they never affect the bones.

The contents of scrofulous tumours are commonly an inspissated lymph or gluten, and those authors who have described them as containing bones, hair, hydatids, cartilages, air, or worms, have evidently mistaken different tumours for them. They, however, sometimes approach a cartilaginous consistence.

Scrofula is not only hereditary, but in low damp situations endemic.

Many of the causes assigned are ridiculous; and it is now acknowledged that scrofula has no necessary connection with small-pox or lues, though a latent diathesis may be excited to action by either. Gout is mentioned by Stoll among the causes derived from the parent, equally without foundation. Salivation, repelled eruptions, cold air, and snow water, are causes equally imaginary.

Mr. Hunter considers the predisposing causes to be damp, and cold alternating with heat, adding, that it chiefly prevails in latitudes above 45°. Coming from a cold to a warm climate, he thinks, induces it, and the contrary direction cures it. Not, however, wholly satisfied with these causes, he adds a debilitated state of the constitution.

The more immediate cause is uncertain. It has been supposed to consist in a peculiar matter, possessing an assimilating power; but if the contents of scrofulous glands be examined, they will be found to consist of concreted gluten, with probably a mixture of albumen. It were, however, to be wished that they had been more carefully analysed. Mr. Hunter has not condescended to explain the connection between cold and damp, and the peculiar symptoms of this disease; nor has he shown in what the peculiar debility consists, or in what manner it operates.

We have often referred to this article, as if it were to contain some new views on the subject of the glandular complaint. We fear the reader may feel a little disappointment; for we cannot proceed far in a theoretical induction. It is, we believe, an established fact, that the scrofula is connected with the smooth, florid complexion, which we have described. The scrofulous temperament, however, though in a more general appearance resembling the sanguine, is essentially different. It wants the mobility and irritability of that temperament, and, except in the florid glow, often comes near the phlegmatic. We have seen the disease propagated from a parent of a brilliant hue to a child of the pale sallow cast; and scrofula is certainly not exclusively confined to those marked in the manner formerly described, though most frequent in such habits. It is not confined also to debilitated habits, but in those predisposed to it, causes of debility assist its action. If there is any peculiarity which we can more distinctly

perceive, it is a want of irritability in the circulating, particularly in the lymphatic, system. These views will explain the greater number of phenomena. In the younger period of human life albumen abounds, and in scrofulous habits it is apparently in excess. We have rendered it probable that gluten is only azotised albumen, and the florid hue of the scrofulous patient shows that oxygen rather than azote abounds. If then the mobility of the lymphatic system is less, the fluids will stagnate where the impelling power is least, viz. in the glands.

It will have been obvious that in describing the symptoms of scrofula the lymphatic glands were not exclusively affected. The eyelids, the mucous glands of the nose, and those of the joints, sometimes suffer. In the former the deficient irritability is peculiarly conspicuous: in the joints it is less so; but, in general, the smaller joints are affected, and the larger ones in consequence of some bruise, which weakens, as we have seen, the tone of the vessels. If to this the morbus coxarius, the distorted spine, and the white swelling of the knee be objected, we may perhaps reply, that these are not exclusively the diseases of scrofulous constitutions, but are certainly exasperated when scrofulous diathesis concurs. The white swelling is the only disease more intimately connected with such diathesis, and it is peculiarly subject to arise from causes of inflammation, as strains, blows, &c.

The principal points of this explanation are the mixture of albumen and gluten in the exhaled fluids, and of course their stagnation in the lymphatic system when the irritability of its vessels is preternaturally less. Thus, scrofula is the disease of the young, where the albumen is in a larger proportion, in constitutions where oxygen is more copious, and where the mobility is not acutely alive. The obstructions yield with difficulty, if at all, as the want of irritability, which occasioned the disease, would certainly not assist the removal of the load when it has accumulated. Scrofulous tumours admit not of suppuration, for we have found it probable that purulent matter is a peculiar secretion from the blood (see PUS), and these tumours are beyond the extent of the circulation. We have found also (see PHTHISIS) that all the marks of suppuration in vomicæ occur in the coats of the tubercle. The other symptoms are those of a languid circulation, or of a weaker action of the excretory ducts, and are readily explicable on the same principles.

Age, which gradually obliterates the lymphatic glands, destroys also their obstructions. They become foreign bodies; the circulation in their coats is obstructed, and they are absorbed as any substance extraneous to the system. The other effects of a languid circulation, however, often remain; and the diseases just mentioned, as with difficulty reconciled to the general theory of scrofula, are those of a more adult age than the general symptoms described. The other remedies of scrofula are various, and of an almost opposite tendency. The efficacy of many of these is established on a very uncertain foundation, and their credit seems, like that of some quack medicines, to be derived from the natural cure of the complaint, during their use. There is a period when scrofulous tumours disappear, and the last remedy obtains the credit. Thus the royal touch, the pressure of a man's hand who has died a violent death, the lead of a coffin long buried, lizards, the blood of a mouse, with a variety of other applications, have received their portion of fame.

The more important means employed by scientific practitioners are also various. The chief and the most useful are salts of different kinds, in different forms. Salt water and the sea wrack (fucus vesiculosus) have been celebrated in every age, and are highly useful. Salt is undoubtedly, as observed in the article CONDIMENT, a general stimulus, and neutral salts promote the solution of gluten in the serum. In each view the muriated natron is useful, and it is no slight confirmation of its mode of action that its advantages depend on its continued use. Dr. Cullen spoke of its efficacy in washing out the lymphatic system; a language not very accurate or scientific. Externally, the salt and the sea-weed appear to act as simple stimulants, not producing inflammation, and very slightly rubefacient.

What additional advantage is derived from an animal or vegetable empyreumatic oil is uncertain, yet burnt sponge, burnt cork, calcined egg-shells, and shell of the scuttle-fish, burnt or distilled toads, burnt cloth, particularly scarlet cloth (De Haen, ii. 157.), and calcined secundines have been recommended. The burnt sponge may be employed with all the advantages that can be expected to follow the others, and it is certainly in many cases useful. The soda alone has been sometimes employed (Kirkland), and its accompanying acid in sea-water has been advantageously combined with barytes by Crawford and Hufeland, as well as with lime by later authors (Swediaur).

Other remedies which we have found to promote a more equably active circulation have been employed. Among these the chief are mercury and antimony. Numerous authorities support the utility of small doses of muriated mercury, though salivation is as generally exploded; and on this foundation mercury, triturated with hemlock, has been recommended in phthisis. Externally, the solution of sublimate, and the mercurial ointment, are suspicious remedies, as they often increase inflammation, and hasten suppuration. The turpeth mineral, mentioned by Fischer, seems to act as an emetic only, and all emetics excite absorption. Mercury, joined with antimony in the Plummers' pill, is often useful; but antimony alone does not appear peculiarly adapted to the complaint. Dr. Rowley, whose success excites our astonishment, more than his reasoning convinces our judgment, speaks of this medicine with considerable commendation, but we can scarcely find any other authority which merits our notice. Various other stimulants have been employed externally and internally. As such we may mention the oxygenous gas, tried rather than recommended by Fourcroy and Hufeland; the horseradish; the petroselinum; the calamus aromaticus; balsam of sulphur; mezereon; sarsa; and some others which we do not enlarge on, as they appear very slightly efficacious. The decoction of sarsa and mezereon is supposed to assist the action of mercury.

However the effects of *tonics*, if considered in all their views, may embarrass us, we must remark, that they have been by every practitioner recommended. We have observed that in such cases the circulation is languid; and whatever assists it will probably be use-

ful. Independent, however, of this view it is of consequence to preserve the strength during the earlier period, till, in the progressive changes in the constitution, the disease disappears. The chief tonic remedy is the *cold-bath*; and to combine the effects of sea-water with it, *sea-bathing* is preferred. If scrofula *will* yield, it seldom resists these united remedies; but as we have said of saline medicines they must be long continued, and a fair trial can seldom be made under twelve months. Two or three years sometimes elapse without the cure being complete, though the amendment were slowly progressive through the whole term. This is particularly the case when the joints are affected. The *Peruvian bark* acts in a similar manner, and has been highly recommended by Dr. Fothergill, who generally, however, combined a warm bitter with it. This medicine has had many other advocates in different volumes of the Medical Observations and Inquiries, in Whytt's, Bell's, and Vicat's works. In general it has appeared to us that it is most useful in the advanced states of scrofula, particularly where the tumours have suppurated, and the patient has been sinking under a discharge from these and the joints.

As a tonic, we may consider the *arsenic*, mentioned in "A Compendium of wonderful Secrets published at Venice" in 1676, but it seems not to have been since tried. Iron is a similar remedy, but it has been seldom employed, except when heated and quenched in wine. The copper has only been applied externally (White).

It is still more difficult to explain the effects of the narcotic deobstruents. Yet we cannot resist the host of authorities in favour of hemlock, foxglove, henbane, solanum, opium, asclepias, vincetoxicum, and some others, with which perhaps the myrrh may be reckoned. It is not uncommon to see diseases cured by opposite remedies; but if the one class is useful, we can scarcely say why the others should not be detrimental. We shall therefore preserve the facts, however they may militate against the theory, and must add, that each medicine, particularly the cicuta, has some of the highest authorities in its favour.

Externally, stimulants of every kind, besides those already mentioned, have been employed. These are ammonia acetata, the gall of an ox, nut oil and salt, the fetid oil of tartar, turpentine, suet, oil with salt, oil of camphor, the root of the cyclamen, &c.; nor has the external use of the narcotics, formerly mentioned, been neglected. Issues and setons in the neighbouring parts have been occasionally recommended, but we have never found them particularly useful. Extirpation of the tumours is seldom necessary, for they never become cancerous; and suppuration should be most anxiously avoided.

When from suppuration a scrofulous ulcer is formed, the first discharge is viscid and glairy, sometimes a whitish curdled matter, which becomes a thin, watery sanies. The edges of the sores are frequently, though not always, painful; and are at first raised, but afterwards are much thinner. So long as the scrofulous disposition subsists in the habit, these ulcers generally remain with little change. At other times they heal very quickly, and again break out in other parts. Their surface is sometimes convex, with an uniform glossy appearance. While the general morbid diathesis continues in the system, it is usually in vain to attempt their cure, for by drying up the sores in one part they very commonly break out in others, and sometimes seem to fall, in consequence, on the lungs.

The best applications are saturnine preparations, for emollient applications are highly injurious; by weakening the parts already too much disposed to relaxation, they prevent healing, and sometimes occasion the ulcers to spread. The mischiefs occasioned by emollient applications are still more clearly shown by the salutary change produced by astringents and stimulants. The most simple of these is cold water, which hath frequently alone a good effect; but is more efficacious with every kind of saline and mineral impregnation, sea salt, and Goulard's extract. The unctuous saturnine applications are improper. In some cases, however, the ulcers are so inveterate as to require other aids, particularly when they swell, become painful, and discharge a corrosive, acrid matter. A carious bone may frequently be suspected in such circumstances to be at the bottom of the sore; and then nature must be assisted by separating such parts as are most diseased and become loose. But when the complaint is fixed in any of the large joints, art can rarely afford much assistance; and as amputation is not often advisable, from the danger of the disease returning to some other part, nature alone must be often trusted. In such a situation recourse should be had to a continued use of sea-bathing, with the bark, perhaps hemlock: and we should attempt particularly to promote a proper discharge from the sores. When by a due use of the necessary means there is a tendency in the sores to heal, issues may be advantageous to continue a discharge which must have become habitual. Gentle compression is peculiarly useful in these ulcers, as it prevents or removes the thickness in their edges.

See Wiseman's, Bell's, and Heister's Surgery; Cheyne on the King's Evil; London Medical Observations and Inquiries, vol. i. p. 184—200, 203—322; Bell on Ulcers, edit. 3, p. 421; Cullen's First Lines, vol. iv.; White on the Scrofula; Kirkland's Medical Surgery, vol. ii. p. 446; Stoll Ratio Medendi, vii. 155; Plenciz Acta Medica; Fischer de Strumis; Meckell de Cognoscendis et Curandis Scrofulis; Dover's Last Legacy; Nuck Adenographia; Haller Opuscula Pathologica Obs. 57; Russel on Sea-water.

SCRO'PHULA. See SCROFULA.

SCROPHULA'RIA, (from the unequal tubercles of its roots like those in the scrofula). See CRASSULA, CHELIDONIUM MINUS, GUACATANA.

SCROPHULA'RIA MA'JOR, Lin. Sp. Pl. 863, *scrophularia nodosa fœtida, ficaria, millemorbia*; COMMON KNOBBY-ROOTED FIG-WORT.

SCROPHULA'RIA AQUA'TICA, Lin. Sp. Pl. 864, GREATER WATER-FIG-WORT, said to be the same as the iquetaia of the Brasilians, famed for correcting the nauseous qualities of senna. Its other virtues are the same with the former species. See Raii Historia; Neumann's Chemistry.

SCRO'TUM, (quasi *scortum, a skin* or *hide*). The external covering of the testicles; *bursa testium, oscheus, oscheon, orchea, laccopedon*; chiefly consists of loose, wrinkled skin, rete mucosum, cellular membrane, and perhaps the expanded fibres of the cremaster muscle on each side, called by the Greeks *dartos* from its raw or excoriated appearance, and not from its use in contract-

ing the scrotum. Immediately within the dartos is a second cellular substance, which is more considerable than the first loose portion. The external membrane allows the fleshy fibres of the dartos muscle to pass, and these are attached to, or connected with, the internal surface of the cutis; the dartos in turn allows the filaments of the internal cellular membrane to penetrate through it, so that the two cellular membranes communicate. On the external surface of the scrotum is a prominent superficial ridge, termed raphe, continued from the anus to the extremity of the penis on its inferior parts, dividing the external surface of the scrotum into two nearly equal portions. The scrotum thus consists of two distinct bags; one for each testicle, and its immediate tunics or coats, formed by a duplicature of the dartos, situated on each side of the raphe, and laterally connected to each other by the intervention of a cellular membrane. This union of the sides of the dartos constitutes that partition, by anatomists denominated *septum scroti*, sometimes *diaphragma*, or *mediastinum*. The septum scroti, on the inferior part, is connected to the internal surface of the cutis, immediately under the raphe; on the superior part, to the inferior and external surface of the urethra, after having been expanded upwards betwixt the tunica vaginalis of each testicle. Upon a removal of the several parts which unite in forming the scrotum, the tunics or proper coats of the testicles next present themselves to view.

Though we have styled the *dartos* the expanded fibres of the cremaster, yet later anatomists have chosen to consider it as a condensed cellular membrane plentifully supplied with blood vessels. The contraction of the scrotum, and the number and depth of the rugæ, are evidently occasioned by the fibres of the cremaster, as contraction is increased by a stone passing through the ureter where it crosses the spermatic cord; nor is there any reason for supposing that a distinct membrane exists of which we cannot perceive the utility. The anterior and external lateral portions of the dartos terminate in a ligamentous expansion, connected with the cellular substance near the groin. The dartos is fixed also by an apparently flat ligament to the ramus of the os pubis.

The scrotum is liable to a variety of complaints; the first of which we shall take notice is the *prurigo scroti*, from ascarides in the rectum, from friction by violent exercise in hot weather, often from morpiones; sometimes from a morbid state of the skin, or superficial glands of the parts. See PRURIGO.

In the latter case the scrotum becomes of a brown colour, often thick, scaly, and wrinkled. The itching extends to the skin covering the penis, more especially along the course of the urethra, and the patient has little respite day or night. The treatment we have already noticed in the article referred to.

The scrotum is liable also to inflammation and abscess, attended sometimes with a considerable degree of fever and danger. In this case bleeding general and topical, with other antiphlogistics; discutient cataplasms applied cold, and frequently renewed, with a constant recumbent posture, are necessary. The scrotum should be suspended in a bag-truss; and if it be proper to encourage suppuration, a fomentation may be used warm, at least twice a day, and, after each time of fomenting, a poultice applied warm, and renewed as often as it becomes cool. In this case the patient must be supported with a generous diet and proper cordials, such as the *cortex Peruvianus, radix serpentariæ, radix contrayervæ*, in substance or in decoction: the *confectio aromatica* may be added, with an opiate occasionally.

When, by the size and prominence of the swelling, the softness and shining red colour of the integuments, the separation of the cuticle from the cutis, the mitigation of pain in the part itself, an œdematous appearance of the integuments upon being pressed, but, above all, the fluctuation of matter under the fingers, it appears that maturation is perfected, the tumour should be opened on its most depending part. If large, and the integuments thin and discoloured, a small part should be removed to admit of a more close as well as a more extensive application of the remedies. The wound must be filled with soft lint, covered with an emollient poultice. At the end of the two first days the dressing should be renewed twice in twenty-four hours, on account of the acrimony and quantity of the discharge, so long as may be thought necessary, fomenting the wound for the space of ten or fifteen minutes previous to each dressing; sprinkling the cloths with brandy or camphorated spirit of wine, if the discharge be thin or sanious. If after the operation any considerable hardness of the integuments should remain, the suppurating poultice must be applied, over the pledgets of digestive, until it is removed. The use of the bark alone, or with the serpentary or contrayerva in substance or in decoction, will generally support the patient's strength, and render the discharge more salutary. A gangrene is often the consequence; but the parts are generally again restored. We know no part where there are such numerous instances of complete regeneration.

Another disease of the scrotum is the cancer, peculiar to chimney-sweepers, hence called *cancrum mundatorum*, the CHIMNEY-SWEEPERS' CANCER, or WART, and the SOOT-WART. Mr. Pott seems to be the first writer who hath noticed it: he thinks it may be owing to a lodgement of soot in the rugæ of the scrotum, and at first not be a disease of the habit. It first attacks the inferior part of the scrotum, producing a superficial, painful, ragged sore, with hard, rising edges. From its situation, it is often mistaken both by the patient and the surgeon for venereal; but it is much exasperated by mercurials, and soon pervades the skin, dartos, and membranes of the scrotum, seizing the testicle, which it enlarges, and hardens. From thence it passes up the spermatic process into the abdomen, indurating the inguinal glands, and terminates soon fatally by attacking the viscera.

The only chance of checking or preventing this mischief is immediately to remove the part afflicted. If it be suffered to remain until the virus hath seized the testicle, even castration will seldom succeed. Early extirpation affords the best chance, but the operation should be immediate, before the habit is tainted. When the disease reaches the testicle, it is rapid in its progress, and most certainly destructive in its event.

Fistulous ulcers sometimes occur in the scrotum; and if these communicate with the urethra, a particular attention to this canal will be required in attempting to relieve. The causes may be an abscess in the scrotum;

a wound made through it into the urethra; the venereal disease first affecting the urethra, producing the ulcer in the scrotum. The external sore is generally very small and sinuous; the lips grow callous; the discharge is thin, copious, almost continual; and if there is a communication with the urethra, the urine will in some proportion escape through the external wound at the times of making water, or insinuate itself into the cellular membrane of the scrotum. Many inconveniences arise from these consequences, that cannot be removed until the orifice, made through the urethra, is healed.

When this disorder originates in the urethra, it may be known by introducing a catheter or bougie, which will meet with an obstruction. When caused by an abscess forming itself within the cellular membrane near the urethra, or in the corpus cavernosum urethræ, there will be little or no resistance to passing the bougie. Though fistulous sores, callosities, enlargements, and distensions of these parts should appear not to be confined to the scrotum, but extend to the perinæum and nates, and fistulous openings should be observable through the integuments, yet in some instances they are discoverable only on opening into the urethra. The source of these complaints should therefore be particularly attended to.

When a venereal cause occasions this disorder, the judicious introduction and use of bougies, joined with mercurial frictions, soft oily purgatives, and soft, diluting drinks, will often render every severe operation unnecessary, though the complaint be of a bad and complicated kind.

Pus is sometimes collected in the scrotum, occasioning the disease named *pyocele* (Medical Commentaries, xii. 425); and it has in one recorded instance been found covered internally with a calcareous crust. It occasionally swells to an enormous size from the urine passing into its loose cellular substance, through fistulous openings of the uretha, from stones obstructing the passage, or sometimes from sarcoma or schirrus. The latter complaints often originate from the testicle, and the tumour distending the scrotum confounds it with the gland; but in many cases the testicle is not injured, and we must recollect that the scrotum has numerous follicles, apparently for the separation of mucus. When the scrotum is distended in anasarca, it must be sometimes punctured to prevent gangrene from the distension; but warm fomentations and warm digestive applications, with spirituous embrocations, must be freely employed to prevent the same disastrous consequence.

See Pott's Chirurgical Works; Warner's Cases in Surgery; Warner on the Testicles; White's Surgery, p. 61.

SCRU'PULUS, (dim. of *scrupus, a small stone*). A SCRUPLE, *dibogon, gramma*. A weight in England equal to twenty grains; but in France and Germany to twenty-four grains. Three scruples, however, are a dram, and eight drams an ounce, in every country. See PONDERA.

SCUTELLA'RIA, (*scutella, a little dish,* from the shape of its leaves). See CASSIDA.

SCUTE'LLUM, (dim. of *scutum, a shield*), is a species of fructification, round, concave, and elevated in the margin, like a target.

SCUTIFO'RME OS, (from *scutum,* and *orma.*) See PATELLA.

SCU'TUM, (*a shield,* or *covering*). See EPITHEMA.

SCYBALA, (from *σκυβαλον, dung*). Hardened excrement moulded in globular masses in the cells of the colon.

SCY'RUS LA'PIS. See PUMEX.

SCY'THICUS LA'TEX; *πνευμα*, DIVINE WATER.

SEA. The few facts referable to the sea and its neighbouring shores we have collected in this part of our work, as they may be more readily sought for under this than the Latin appellation. We must divide it, for the sake of perspicuity, into the air of the sea and its neighbourhood; the water; its inhabitants; and effects.

In speaking of phthisis, we mentioned the general indiscriminate recommendation of *sea-air,* probably derived from the good effects of sailing, and have before mentioned the singular idea of Dr. Rush, that the mixture of the sea and land airs are by no means salutary. If we would ascertain the real facts, in the mist of fashion, of fancy, and prejudice, we must chiefly rest on observation. Eudiometrical experiments are extremely fallacious. Ingenhous attempted to show that the air at sea contained a greater proportion of oxygen than the air on land, and that the air of islands was purer in proportion as they were less extensive. Other authors have found different results, and it is agreed that the EUDIOMETER, q. v. is a very inadequate criterion of the salubrity of the air. If we admit the accuracy of Ingenhous' experiments, they will add little to our resources in the complaint just mentioned, for hectic patients are not benefited by an increased proportion of oxygen. In another view the situation may be more beneficial. In the bold exposed shores, where the surf is occasionally violent, the atmosphere is filled with a salt spray, which is constantly inhaled in every inspiration. There can be little doubt of the efficacy of such a saline impregnation in scrofula, where we have said a residence in the vicinity of the sea is useful; and perhaps in phthisis, which we have found so nearly connected with scrofula. May not this account for Dr. Rush's opinion; for near the embouchures of large rivers the sea does not roll in such violent waves, and the atmosphere is not equally filled with saline particles. Whatever plausibility there may, however, appear in this explanation, experience proves it to be a refinement; for, whether the exposed situation, by its sharp piercing winds, counteracts the salutary tendency of the salt atmosphere, or any other causes may concur, the situations near rivers are by no means less advantageous than on the open beaches. We have already said that the sea air is most salutary from the months of August, till December; often till February.

Sea air has been supposed to favour and increase bilious complaints. From attentive observation we have not found this accusation properly supported. We think it favourable to the alvine discharge; for though costiveness is common in sea voyages, it seldom attends the residents near the sea. This effect is, however, a general one only, for there are numerous exceptions. Sea air gives strength and activity, effects in part owing to a more regular and active mode of life; but which may arise from its superior purity, should the result of Ingenhous experiments be correct.

Of *sea water* we have already spoken in the articles

BALNEUM, CATHARTICA, and SCROFULA. As a bath we have not found it peculiarly useful, from its impregnation, though the saline crust it leaves on the skin may keep up a stimulus. As a cathartic it is chiefly useful in scrofula. This quality it owes to its salts, of which on these shores there are about one in thirty parts; in the northern ocean, one in sixty-four; in the tropics one in twelve. Pages found a remarkable diversity in different latitudes, and at different depths. At the equator the impregnation is stronger, probably in consequence of the evaporation, and at different depths there is a slight variation from the superior weight of the more saturated solution. In the neighbourhood of volcanic islands, the saltness of the sea is greatly diminished. This is particularly conspicuous near Madeiras, and the Cape de Verd islands. The reason of this, as well as of the original saltness of the sea, is not easily assigned, and it is a question which does not belong to this place. The sea on our coasts contains, in a wine pint, of common salt about 186 grains, muriated magnesia 51 grains, and of selenite six grains, besides an oily matter from the exuviæ, probably, of marine insects. Near the volcanic islands the sea often contains a large proportion of true bitumen.

The temperature of the sea is nearly uniform, so that it is warmer than the air and the earth in winter, and colder in summer. On the southern coasts of this kingdom it is usually about 52°. This renders the temperature of the air in its neighbourhood more uniform, possibly more salutary. The water, at the bottom, when at any considerable depth, is colder in summer and warmer in winter than near the surface. Mr. Henry found that the best method of preserving sea water from putrefaction, for the purposes of bathing, was to convert it into lime water, by adding lime in the proportion of two scruples to a quart.

Of the *inhabitants of the sea* we have already spoken in the article ALIMENT. Fish in the earlier ages were seldom eaten, and are mentioned as food in two places only of the Odyssey, when the crew of Ulysses were in extreme distress. The insects and vermes afford us many luxuries, and even the botanical riches of the ocean furnish food for the inhabitants of the higher latitudes. The sponges, the zoophytes, and lithophytes, are the work and the habitation of animals. The first and the last only afford medicinal substances; the sponges when burnt (see SCROFULA); and the corals now disused, but formerly employed as absorbents. In the arts, the fuci, confervæ and algæ are used for the production of natron.

The *effects of sea voyages* are, at first, a violent and distressing sickness, often occurring even in those accustomed to a sea life, when they have lived for a short time on shore. Small quantities of brandy, sometimes a little hartshorn, or laudanum, with water, will succeed in relieving it; sometimes a draught of sea water. It arises from the unaccustomed motion, and is only effectually stopped when the constitution has for a little time experienced it. In general, during a sea voyage the belly is costive, but the *health is seldom impaired*, except from scurvy. See PHTHISIS and SCORBUTUS.

SEACACUL. An appellation in the works of Serapion and Avicenna of a root resembling ginger, brought from India, and recommended as a provocative. It was suspected to be the eryngo, and hence this root, by Shakspeare and others, has been arranged among the aphrodisiacs. Modern authors suppose that by this term the ginseng was meant.

SEBA'CEÆ GLA'NDULÆ, vel MILIARES, (from *sebum, suet*); small glands secreting a sebum, to soften and polish the skin. Many of these are about the nose, where their contents are often hardened; and when the matter is squeezed out it resembles a worm with a black head, for the hardened sebum is moulded in the duct.

The black spot which has been styled its head seems to be produced by the obstructing matter. In young persons, particularly young women, whose constitutions are not yet firm, these obstructions are numerous, and form a class of cutaneous diseases scarcely noticed. The assistance of medicine is often required to remove them; but no medicine succeeds. Slight mercurials, topically applied, are sometimes useful, and Gowland's lotion has thus gained credit; but their removal is chiefly effected when the balance of the circulation is more completely established.

These glands, seated in the cellular membrane, under the skin, and in various parts of the body, sometimes are enlarged, and form encysted tumours.

SEBA'CEUS HUMOR. This glutinous fluid is supplied by the glands just mentioned; and when wanting, as in erysipelas, the skin is dry, parched, and often chapped.

SEBACIC ACID, (from *sebum, suet*). We have already mentioned this acid repeatedly, and observed, that it is supposed to be the acetous, disguised by its union with animal matter. It crystalises in needles, or by greater care in broad brilliant plates; has a slightly acid taste; reddens litmus; melts like tallow; is soluble in alcohol; more soluble in hot than in cold water. It precipitates the acetites and nitrats of lead and mercury, as well as the nitrate of silver; but decomposes neither lime, barytic, nor strontian water. These are the properties of Thenard's acid, which he thinks different from that of Crell, and contends that it is by no means the acetous. If it be so, there is a great probability that it is a product, not an educt; but till the experiments have been repeated with more attention it may retain its appropriate name. To make it, the matter distilled from hogs'-lard must be washed with hot water, and a solution of acetate of lead dropped into it, till no farther precipitate appears. On this precipitate, washed and dried, some sulphuric acid must be poured; and, on heating, the sebacic acid will rise to the top, resembling oil. For Crell's experiments, see Philosophical Transactions, vol. 70, 72; for Thenard's, Annales de Chymie, tom. xxix.

SEBADI'LLA. See CEVADILLA.

SE'BAR. See AGALLOCHUM.

SE'BAS, (from *sebum, suet*). SEBATES. Salt formed by the union of the sebacic acid, or the acid of suet, with different bases. They are little known, and have been never used in medicine.

SEBE'STEN, and SEBESTI'NA. *Myxa, myxara, vidamarum*; the fruit of the *cordia sebestina* Lin. Sp. Pl. Resembling in shape a plum, black on the outside, with a flattish wrinkled stone, produced in Egypt and Assyria. It is cooling and relaxant, but not used as a medicine, though said to obtund sharp humours which fall on the lungs.

SECA'LE, (*a patronymic*). *Siligo, rogga*, RYE, a

kind of grain less nourishing than wheat, which sometimes gently moves the bowels. Of all the cerealia it is the most readily acescent. When this grain is corrupted it occasions painful and convulsive disorders, and death. The meal mixed with common salt, and dried before the fire, is an excellent discutient in erysipelas; and mixed with honey it becomes a suppurative cataplasm. When grains of rye are diseased, and grow like a horn, they are called *clavi siliginis*, and *ergot*. This disease, according to Tissot, arises from an irregular vegetation between the grain and the leaf; and, according to other authors, from the puncture of an insect, the scarabæus solstitialis. Perhaps the bite of the insect may produce the anomalous vegetation.

SECRETIO, (from *secerno, to separate*). SECRETION. This function, the most useful and important in the animal economy, by which every loss is repaired, every tender organ defended, still remains unexplained. Nor is it surprising that a process carried on in the minutest vessels, the elements, according to Haller, of an organ should escape the most minute inquirer. The first step which occasioned the dispute between Ruysch and Malphighi has not yet been decided, whether a gland necessarily contained, as a part of its organical structure, a follicle, or whether it was only a mass of continuous, convoluted vessels. From the minutest injections we find the artery branching in the substance of a gland in a peculiar manner, and so constant in its appropriate angles, as to lead to the conclusion that these influence the nature of the secreted fluid. Yet the mechanical physicians who have examined their arrangement with the greatest attention, have been able to draw no very important consequences from it. No anatomist has, however, carried the injected fluid into the excretory duct by continuous vessels. There is a point at which the artery breaks of, and that point is apparently at a great distance from those minute branches where the change takes place. It is impossible therefore to determine whether follicles exist or not, but we know that there are secretions where there is no visible intermediate knot; and if secretion can take place from continuous vessels in any instance, it is impossible to say that it does not in every organ. A considerable change is certainly, at times, discovered in the secreted fluid, from the state of the vessels themselves. In the mucous membrane of the nose, for instance, the matter secreted appears a mere exhalation; yet when there is inflammation from a catarrh, it is thin, acrid, and discoloured. A more remote action changes the nature of the secretions, viz. nervous affections. A fit of passion will render the bilious secretion more copious and acrid; disastrous intelligence destroy the digestion, and render the contents of the stomach acid. Yet we are told that the glands have few nerves, and that the large ones, apparently sent to them, pass by without any communication (Haller). The glands are certainly insensible, but they are highly irritable from distant, often mental, causes. The nerves of almost all the glands (for we must exclude the brain from the number) arise from the great sympathetic. Their action is therefore involuntary.

Physiologists, according as they adopted the principles of the mechanical or chemical sects, have considered secretion, by which they understood the *separation* of a peculiar fluid contained, formally, in the circulating mass, as depending on the angles at which the secretory vessels were sent off, or on either a ferment or the influence of attraction. The former had more than the usual support from observation, as the vessels of each secretory organ pass off from the trunks, and ramify in a manner peculiar to themselves. Thus the seminal vessels pass off at acute angles, and do not become conical; in brutes they have even their diameters enlarged, and at last become peculiarly tortuous. The renal vessels pass at right angles from the aorta, and are dispersed on the kidneys in vermicular arches. To this may be added the observation of Lewenhoeck, who perceived by his microscopes that the velocity of the blood diminished in proportion to the angle which the arterial branch made with its trunk.

The chemists, on the other hand, struck with the dissimilarity of the secreted fluid from the blood, supposed a ferment to exist in the gland, which sometimes was brought to it from the blood, sometimes pre-existed in the part. Others of this sect attributed the change to stagnation, and peculiar attractions taking place; in modern language, the play of affinities.

More nearly allied to the doctrines of the mechanical physicians is the opinion of Des Cartes, who attributes the change in the secreted fluids to the vessels fitting only particles of a peculiar figure; as triangular vessels fit only prisms, and square ones cubes; and that of Boerhaave, who considers the size of the vessels to diminish gradually, and of course the finer fluids to be separated only in the lowest series.

There is still another view, which has not been expanded so far as the arguments in its favour might admit, that is, the effects of a specific stimulus. The squill that irritates the kidneys and the bronchial glands has no effect on the skin; and the asparagus, which conveys its odour to the urine, does not tinge the saliva. If then the blood consists of different portions, those only which are peculiarly adapted to stimulate a given gland will excite its action. We suspect, however, that this theory must fall with the rest.

In short, each author down to Hamberger and Haller has, with a very few exceptions, rested his theory in the formal pre-existence of the secreted fluid in the mass of blood, a foundation which cannot be allowed. The bitter matter of Welther, and the yellow fluid separated by Higgins, are far from being true bile. Even the milk differs from the chyle, and the semen from every other fluid in the whole body. There is a real transformation in the gland which we cannot explain. We may, however, clear the way for a more adventurous theorist.

Haller divided the different secreted fluids into aqueous, mucous, gelatinous, and oily. On this arrangement Fourcroy, in the present enlightened state of chemical knowledge, has improved by considering them as *saline, oleaginous*, which have some solidity, as the fat and cerumen; the *saponaceous*, as bile and milk; the *mucous*, as those which line cavities; the *albuminous* and *fibrous*. Those which come nearest in their nature to the blood are the saline, the albuminous, and the fibrous. These seem merely exudations, with little change. The perspiration, for instance, contains some carbonic acid, probably also azotic gas; the urine a peculiar acid; and all probably some animal matter,

The tears contain only, in addition to the serosity, a little mucus, and a very small proportion of animal matter; the water of dropsies; the halitus of cavities; the albuminous and fibrous fluids, which form adhesions, after inflammation, appear to be exudations only.

The three last seem to differ only in proportion to the impulse impressed by the vis a tergo, or the dilatation of the vessels; for the vessels of the pleura, which in health throw out an halitus, after inflammation exude an albuminous and even a fibrous fluid.

The secreted fluid, which approaches most nearly in its nature to the circulating fluid, is the mucus. It is, however, neither serous nor albuminous, for it does not coagulate by heat. This fluid is also secreted by the simplest apparatus, viz. a follicle, a cavity of an ovoid form; and sometimes apparently by simple vessels, without the interposition of a follicle, at least where no such can be discovered, as in the Schneiderian membrane. It is of more importance to observe that the inflammation of the membrane or follicle changes the nature of the secretion, which from being a mild viscid, white, fluid, becomes acrid, thin, and coloured. This alteration of properties may be owing to the rapidity of the excretion, for it certainly thickens by stagnation, and the access, in many instances, of oxygen; but the additional acrimony, which accounts for the greater flow, must be owing to a change of quality, for when mucus is only increased in quantity by a common stimulus, it is by no means acrid. This alteration of quality, from inflammation, we find also in the mere exudations, if the explanation offered in the article Pus, q. v. be well founded; and the consequence which we would draw is, that if, in any instance, a true excretion can be produced by tortuous vessels, independent of any apparatus, there is no reason for suspecting that the most apparently complicated gland consists of more.

Again: if passions of the mind, or even associated ideas, can change the quality of a secreted fluid, we cannot suppose that any peculiar ferment can be originally placed in the gland that changes the blood. The bile becomes acrid; the saliva poisonous from passion; the urine watery from terror; the mucus of the alimentary canal highly stimulating and cathartic from the same cause, or even from the recollection of similar events which occurred at a former period. The play of affinites cannot be called in aid of the theory, for these circumstances are connected only with the living principle.

It has appeared probable to some authors, that the greater the change, the denser is the gland, or the more complicated the apparatus. The former idea, that of La Mure, appears, however, wholly without foundation, when brought to the test of experiment; nor does the latter apparently rest on a firmer basis. The cerumen of the ear, for instance, is at least as unlike the blood as the bile; and the milk resembles it more than the mucus of the simplest follicle. If the bile be examined in the pori biliarii, it is as truly bilious as in the ductus communis; and the milk is the same milky fluid in the breasts as when it issues from the nipple. The chief use of what appears a larger mass of a glandular substance is merely the accumulation of a larger quantity of the secreted fluid, either for peculiar exigences or for a general supply. An instance of the former is the biliary cyst; of the latter the mammæ.

Physiologists have doubted whether the secreted fluids are not more perfectly elaborated, or at least somewhat changed in their respective receptacles. The semen in the vesiculæ seminales undoubtedly receives an additional portion, though its peculiar value in the function is unknown. That the bile is altered, except perhaps from the absorption of its more fluid parts, is uncertain, and on the whole any chemical change is improbable. The sebum and the mucus, in their respective follicles, are apparently inspissated, and sometimes, as in the nose, combined with a portion of oxygen. The vesica urinaria and the distensile coats of the rectum are chiefly convenient appendages to the kidneys and intestines.

It appears then that the functions of glands closely depend on the vital solid, and its different states of excitability or torpor. This idea may appear to be opposed by the observation of Haller, already recorded, that the large nerves apparently sent to glands were not in reality dispersed on them, but passed on to other organs. To this we may reply that sensibility and irritability are not always proportioned to the size of the nerves. The quantity of nerve is necessarily considerable where the motions are violent and incessant; they are less so where motion is less requisite, and where states of relaxation, as in glands, usually alternate with states of activity. Let the explanation, however, be what it may, the fact is certain, that secretion is more intimately connected with passions of the mind than with any distribution of arteries, or any considerable proportion of nerve.

We shall add the arrangement of animal substances from Fourcroy, in his later work, the Systeme des Connoissances Chimique, ix. 117, which includes those of the secreted fluids.

"Chemists have often divided the animal fluids into recrementitious, as the blood and lymph; excrementitious, as the urine and fæces; excremento-recrementitious, as the bile, semen, &c. We cannot be satisfied with this classification, which presents nothing fixed or accurate, but may divide these matters, from their chemical nature, into eight classes, according to the superabundance of one or the other of their component principles.

A Hydrogenated or oily animal substances; as the fat, cerumen, or bile.

B Oxygenated, or oxydes (the *albuminous* or *lymphatic*); containing the lymph, the water of the internal cavities, and the brain.

C Carbonated (*gelatinous* or *mucous*); comprehending membranes, aponeuroses, tendons.

D Azotic (*fibrous* or *fleshy*); as muscles, and the visceral parenchymata.

E Acid; the uric, formic, bombic acids, &c.

F Saline (*watery*); aqueous and vitreous humours of the eye, tears, and saliva.

G Phosphorated; bones, nails, horns, and hair.

H Mixed; blood, milk, semen, and urine."

We have thus seen that the function styled secretion is improperly termed, as it is by no means merely separated from the mass, except in a very few instances, as the halitus, perspiration, &c. which, how-

ever, modern chemistry has shown to be more different from the serosity than our predecessors suspected. Though we may, therefore, be unable to explain the cause of the change in the qualities of the fluid, we may collect from observation some of the LAWS of this function, which will regulate our practice.

The general causes which influence the secretions are few: magnetism and electricity, if they really differ, are the most commonly admitted; yet, except when locally applied, they have apparently little claim to the distinction. It is said they increase the perspiration, and so far the facts support the assertion. Heat is another general cause of increased secretion; but it seems only to accelerate the discharges from the skin in either a state of vapour or of a fluid; the insensible perspiration apparently depends on a different state of the constitution. (See DIAPHORETICA.) Dr. Hamilton, in the Medical Commentaries, has informed us that calomel, tartarised antimony, camphor, and opium, when combined, will promote every secretion. This is, however, a hasty assertion, which facts will scarcely support.

It must be admitted that some medicines will influence a greater number of secretions than others. Antimonials, for instance, will excite the action of the stomach, the bowels, and the vessels of the skin. They excite expectoration by an indirect effect, viz. their action on the stomach, and it is not the antimonial but the nausea which produces increased secretion of saliva and mucus. Calomel will excite the action of the bowels, the skin, and the salivary glands. Neither medicine will excite the secretion of urine, while squills, which are diuretic and expectorant, are not generally or constantly laxative or diaphoretic. Squills, however, approach more nearly to a general stimulus on every secretory organ than any other medicine, or even Dr. Hamilton's combination.

It has been usual to consider every medicine which increases a secretion as acting on the gland, when brought to it by the course of the circulation. It more frequently happens, however, that each acts by stimulating the orifice of the excretory ducts. In this way laxatives apparently increase the secretion of bile, sapid aliments of saliva, and the suction of an infant the milk. Many secreted fluids cannot be increased by medicines thrown into the system, as the tears, the cerumen of the ear, the mucus of the nose, &c. We know not that the pancreatic fluid is really increased in quantity by mercury when it has entered the system. We suspect it only from a supposed analogy of this fluid with the saliva.

Those medicines which generally increase secretions from the circulating system are remarkable for their acrimony, as the squills, the oxygenated preparations of mercury, &c.; but, as already hinted, every vessel is not equally excited by an apparently equal acrimony. What affects the biliary duct, for instance, will not excite the lacrymal or salivary glands: the turpentine, which excites the urinary discharge, is innocuous in the stomach and intestines. It may be supposed, then, that a medicine, when mixed with the mass of blood, produces no effect unless conveyed to those organs which would be peculiarly affected by it, were not the quantity so small that we could scarcely suppose it sufficient in its diluted and diffused state to influence any gland. Another idea has, therefore, been suggested, that the chemical affinity of the medicine combines it with those portions of the fluids which are conveyed to given glands. Thus salts increase the watery secretions; resins, the oily ones, &c.; but the theory will not admit of any considerable extension, for it soon fails if followed in detail.

Secretions also depend less on the state of the blood than authors have supposed. Dr. Cullen was of opinion that a larger proportion of water allows of more copious watery secretions; but this idea must be taken with a certain latitude. If pure water be carried into the circulating system, it is soon conveyed away by the watery secretions; for we have remarked, that what is not subjected to the digestive process never becomes a part of the animal mixture. It is then an heterogeneous substance, and as such rejected; but if from any other cause the tenuity of the blood is increased, no such increased secretions follow, as we see in all cachectic complaints. The saline or putrid acrimony of the fluids seems sometimes to excite the action of the urinary organs, and the urine, sometimes the perspiration, partakes of the same quality; but, though the discharge is frequently offensive, it is not always greatly increased.

The only remaining portion of this subject is the vicarious action of some of the secretory organs. The saline and watery secretions proverbially supply each other; and these will also sometimes pass off by the mucous follicles, as the watery accumulations in dropsies are occasionally thrown off by the glands of the stomach. The urine, when suppressed, and not discharged by the perspiratory vessels, is sometimes exhaled, it is supposed, in the ventricles of the brain; but the delirium thence excited seems rather owing to the acrimony, which all the watery secretions contain from the retention of the urea, and other excrementitious portions of the urine, than from the quantity, though this also is occasionally in excess, producing stupor. No organ supplies the defect of bile when the discharge is suppressed; but, as this fluid is dispersed through the whole system, some portion again reaches the intestines through the exhalants, and contributes in some degree to the assimilation of the food. No organ supplies the functions of the testes; but the whole economy is completely deranged by their destruction.

See Halleri Physiologia, vol. ix.; Cole de Secretione Animali; Richerand's Physiology.

SECUNDI'NA, (from *secundus, second*, it being as it were a second birth). SECUNDINES, *deuterion*. The placenta and membranes. See PARTURITIO, FŒTUS, and INVOLUCRA.

SEDA'NTIA, (from *sedo, to appease*). SEDATIVES. This class of medicines is of the most extensive utility; but we have nothing to add to the very frequent notice we have taken of the subject in the articles ANODYNA, INIRRITANTIA, REFRIGERANTIA, and DEMULCENTIA, q. v.

SEDATI'VUS SAL, (from the same). SEDATIVE SALT, now styled the acid of borax, hath been found by M. Hœffer in the laguni, or lakes of hot mineral water near Monte Rotondo, Berchiaio, and Castelnuovo, in Tuscany, in the proportion of nine grains in one hundred of water. Mascagni hath discovered it

adhering to schistus on the borders of the lakes, of a dirty white, yellow, or greenish colour, and crystalised in the form of needles. This acid may be procured by dissolving eight ounces of borax in three ounces of warm water, adding three ounces of the oil of vitriol. When on evaporation thin plates begin to appear upon the surface they must be swept off with a feather, the fire diminished, and the vessel stand unmoved till more crystals are formed. These are to be well rinsed with cold water, and dried, when they form the *sal sedativus*, which, Gaubius says, will procure rest in inflammatory fevers when opiates fail. To this end it is given from gr. viij. to xvi.; to maniacs, in doses of two drams. Lemery observes that two ounces of borax afforded him rather more than half an ounce of sedative salt; but he obtained it by the more tedious process of sublimation, which produces a purer acid. For this purpose nine parts of borax, three of the oil of vitriol, and one of water, are put into a wide-necked retort, which is placed over a fire, at first gentle, then hastily increased until the vessel is red hot: the salt rises, fixing about the neck of the retort, and the liquor that distils falls into the receiver, and should be poured back as the matter in the retort dries; for the sedative salt only rises while moist. The remaining salt is a vitriolated soda.

The sedative salt scarcely dicovers any mark of acidity. Its taste is bitterish, and rather cool; it scarcely changes the colour of blue flowers, or effervesces with alkalis: a spirituous solution of it burns with a green flame. As a medicine it has been highly celebrated in Germany and France, as an antispasmodic and anodyne; though Dr. Cullen, speaking from experience, says that it has little effect on the human body, even in large doses. It seems, however, to have no peculiar powers, and to differ very little in medicinal virtue from the vegetable acids. See BORAX and CHEMIA.

SEDATI'VUS SAL HOMBE'RGII, (so called from *Homberg*, the discoverer). See COLCOTAR (SAL).

SEDENTA'RIA O'SSA, (from *sedeo, to sit*). See ACUMEN.

SEDLITZ, or SEYDSCHUTZ WATER. A bitter purgative water containing a large proportion of vitriolated magnesia, with a small one of a muriat of the same earth. It is used in cases where a gentle and a continued solicitation of the intestinal canal is required.

SE'DUM, (from *sedando*, because it allays inflammations), *sempervivum*, evergreen; *vermicularis*, from its leaves resembling worms; *barba Jovis*, SENGREEN and HOUSE-LEEK. The *semper-vivum tectorum* Lin. Sp. Pl. 664. The GREATER HOUSE-LEEK, is called *sedum majus, æichryson, æonion, æizoon, crassula minor, illecebra, æthalis, piper murale*. The sedums are small plants, whose short and thick stalks are covered with little fleshy and conical leaves, set thick together like scales; on the tops appear pentapetalous flowers, followed by a pod full of small seeds. They are annual, grow on old walls and dry stony grounds, flowering in June and July.

The leaves have an acrid taste, but no remarkable smell: applied externally some species, particularly the *s. acre*, vesicate the parts; and internally, in no great quantity, are strongly emetic: whilst the sengreen and some other species abate external inflammation; and, if taken inwardly, are emollient and laxative, though slightly astringent; but they are not employed in the present practice.

It is also a name for *paronychia*.

SE'DUM ACRE, Lin. Sp. Pl. 619, ILLECEBRA, q. v. It has been recommended in epilepsies.

SEGREGA'TA, (from *segrego, to separate*). A class of plants in whose flowers many smaller calyces are contained in one common calyx.

SEIGNE'TTE, SEL DE. TARTARISED SODA. See RUPELLENSIS SAL, named from Seignette, an apothecary of Rochelle, who accidentally discovered it.

SELENI'TES, (from σηληνη, *the moon*), a name originally given to a white fossil, and from thence continued to different species of gypsum, which are usually white. It is the vitriolated lime, a common ingredient in every water, and giving the quality usually styled hardness.

SELI'NUM MONTA'NUM, (from σεληνη, *the moon*, because it was supposed to be useful in disorders attributed to her influence). STONE PARSLEY. *Apium* and *selinum, peregrinum, daucus peregrinus, visnaga minor*, scarcely differing from the common or garden parsley in its medical powers. See APIUM HORTENSE.

SE'LLA TU'RCICA, SPHENOI'DALIS, (*a sedendo, sitting*). A TURKISH SADDLE. *Ephippium; fossa pituitaria*; a depression between the clinoid apophyses of the sphenoid bone, on which the pituitary gland lies.

SELTZER WATER. This water rises near the town of Nieder Seltzer, in the bishopric of Triers, in Germany; has a brisk acidulous taste as taken up from the fountain, which it loses on exposure to the air. The acidulous taste and the sparkling appearance were not understood by the earlier chemists; but we now know that it is owing to the excess of the aërial acid beyond what is required to neutralise the lime and alkali. Sir Tobern Bergman from one hundred cubic inches obtained about one of common air; sixty of aërial acid, or fixed air; of aërated lime, seventeen grains; of aërated magnesia, twenty-nine one-half; of crystalised mineral alkali, twenty-four; of common salt, one hundred and nine one-half. Mr. Higgins discovered in a Winchester gallon of this water fourteen grains of mild calcareous earth, twenty one-half of carbonated magnesia, five pennyweights twenty-one grains of mineral alkali in a crystaline form, three pennyweights 20.2 of sea-salt, with a small proportion of oily matter. This quantity contains also one hundred twenty-eight ounce measures of acidulous gas, exclusive of what is combined with the alkali and earth, with three one-half ounce measures of atmospheric air, and is wholly without iron. These waters operate chiefly by urine, occasionally, though rarely, by stool. They gently stimulate the stomach, allay heat and thirst, and have been frequently used in scorbutic, hectic, and nervous cases. Hoffmann recommends them in gout, and as powerful deobstruents. From one pint to three, or more, are drank in a day, and milk is often added when given in hectics. See AQUÆ MINERALES.

SEMEIO'TICA, (from σημειον, *sign*). See MEDICINA, and PROGNOSIS.

SEMEN, (*quasi serimen*, from *sero, to sow*). SEED; in animals *genitura*, γονη; in vegetables *carpos*; the rudiment of the plant perfected during the fructification.

From analogy it is the appellation of that fluid secreted in the testicles which is so essential to generation, and which, for this purpose, must be conveyed at least into the uterus, and most probably to the ovaria. (See GENERATIO.) Though secreted in the testes, it is not perfectly elaborated in these organs, but seems to experience a change of colour, perhaps of qualities, in the vesiculæ seminales; for, during its stagnation, the colour becomes of a darker brown, or of a deeper yellow, than before.

The arteries which convey the blood to the seminal vessels pass through a long course without sending out branches, and without lessening in their diameter. In brutes it is said that their diameters enlarge. The termination of the artery in the testis has not been traced; and though it is known that the testicle is vascular, it is not certain that each contains a single tube. The epidydimis is certainly composed of one convoluted canal; yet it is highly probable that the testis contains numerous canals corresponding to the branches of the arteries, or, as is supposed, though without sufficient evidence, on which the arteries are dispersed, while their contents are exhaled into the cavities. The arteries are small, tortuous, and peculiarly firm in their coats. The course of the blood is probably assisted by a slight, steady, but almost insensible, action of the cremaster. The vas deferens passes in the cord, with the seminal vessels through the ring of the abdomen, between the ureters, behind the bladder, to the right and left seminal vesicles. It is continued on the inner side of each, enlarging into cells, and bent in serpentine convolutions, till it joins the duct which passes from the vesicles to the urethra, and apparently enters the vesicles in a retrograde direction. The bile in the same way enters the gall-duct. The fluid of the prostate which it receives in its course, during its discharge, contributes to its white colour.

The semen is very generally heavier than water, though its specific gravity varies in different persons. According to Plenck it is yellow in the testicles, and of a dark yellow in the vesiculæ seminales; but, if not suffered long to stagnate, it is whitish. Lewenhoeck first discovered little moving bodies, which he supposed to be animalcules, in it, and thought that these were the rudiments of the fœtus. This observation furnished to the brilliant genius of Buffon his theory of the molecules organiques. Later observers have not, however, found these animalcules in the first moments after the discharge; and they soon die, leaving some light brilliant crystals, resembling two cones united at their bases. They are discovered only in a mild temperature, and when the fluid has been at perfect rest.

According to Vauquelin, in the Journal de Physique, the taste of the fresh semen is sharp and somewhat pungent. Its aroma, he observes, is faint; though Plenck speaks of it as strong, peculiar, and not unpleasant. We find a similar smell in the roots of the orchis, the down of chestnuts, and the antheræ of several plants. In some animals it is so strong, particularly in the season of their amours, as to taint the flesh. When fresh, it changes the blue colour of vegetables to a green, precipitates calcareous and metallic salts from their solutions: experiments which equally show some disengaged alkali.

When part of its caloric is lost, it thickens, and becomes transparent; but on more perfect cooling is again fluid. When cold, also, its weight is diminished. Exposed to cold air it is soon covered with a pellicle, and deposits crystals in the form of quadrilateral columns, terminated by quadrilateral pyramids, which were found to be phosphorated lime, previously held in solution. Other crystals were afterwards formed, which consisted of carbonated soda. When dried, it is semitransparent, like horn; but in a moister atmosphere it becomes yellow, like the yolk of an egg, and smells highly putrid. By heat it swells, blackens, and, when the moisture is evaporated, yields empyreumatic ammoniacal vapours: the salts already mentioned are found in the coal. One hundred parts of fresh semen were found to contain ninety of water, six of fibrin, one of soda, and three of phosphat of lime. Vauquelin concludes his analysis by mentioning its remarkable properties, which are its becoming fluid out of the body; its insolubility in water previous to its fluidity, and its solubility afterwards, which he attributes to its animal and mucilaginous nature; its dissolving phosphat of lime, and its ready crystalisation on a very slight evaporation. Journal de Physique, 1791.

Unfortunately this very minute analysis does not assist us in explaining the functions of this fluid, and we cannot be surprised that the appearance of animalcules should so soon have captivated the lively imagination of Buffon, whose name, from his fascinating language, was for a long time supposed to be sufficient authority. This important function must, therefore, still remain in obscurity.

The diseases of the seminal vessels, and the imperfections of this secreted fluid, are not numerous. The organs, from excess or abuse, are often relaxed, and the semen is discharged by every exertion, particularly by the action of the abdominal muscles, in discharging the fæces; sometimes during the relaxation of sleep, without any exertion, or the very slight stimulus of a lascivious dream. It is said occasionally to retain the smell of the food, the fœtor of medicines, or the colour of a medicine, particularly saffron. In the jaundice it is yellow, and in negroes its colour is seemingly darker than in the Europeans (Pauw): it is said also to be darker in hypochondriacs. In some instances it has shown a tendency to form calculous concretions. (See Zodiacus, 1680.) From great excesses blood has been discharged instead of semen.

From ruptured vessels it seems to have been occasionally discharged by stool; externally by a fistulous ulcer of the testicles (Medical Observations and Inquiries, ii. art. 22), through the epigastrium, and from an ulcer in the rectum and urethra.

On a certain degree of distension of the seminal vessels the spirits, the vigour, and the general health depend. When this distension is relaxed, we find languor, debility, a want of energy both in the corporeal and mental functions. When there is no supply either from accident, disease, or unnatural mutilations, the whole system is changed, the voice weakened, the beard checked in its growth, the sternum expanded: in short, the appearance in every respect approaches that of a female. These changes have occurred when the testicles have been destroyed after the period of manhood, though in a less degree. An unreasonable suppression is a frequent source of hypochondriasis, or of a general

languor; and a French author has gravely stated the comparative disadvantages of suppression of this discharge, and that of the catamenia in women. Much, however, depends on habit; and those who have not indulged lasciviousness of thought or conduct will seldom feel great inconvenience from the retention of the seminal fluid.

Journal de Physique, Années 1784, 1791; Spalanzani's Tracts on Vegetables and Animals; Schurig's Spermatologia; Halleri Physiologia; Plenck's Hydrology.

SE'MEN ADGOWEN, an East-Indian aromatic seed, resembling in its sensible qualities savoury. It is stimulating and carminative, and given in dyspeptic complaints.

SE'MEN AGAVE, a stimulating East-Indian seed used in atonic gout.

SE'MEN CONTRA and SANCTUM. See SANTONICUM.

SEMENZI'NA, (dim. of *semenza, seed*, Ital.). See SANTONICUM.

SE'MI or SE'MIS. ONE HALF. A meaning which it preserves also in composition.

SEMICU'PIUM; *excathisma, insessio*, a HALF BATH, rising to the waist, usually formed of warm water, sometimes impregnated with herbs, adapted to the nature of the complaint, and supposed to be productive of their peculiar advantages. The semicupium alleviates pain, dispels flatus, and relieves internal congestions. See BALNEUM.

SEMIFIBULÆ'US. See PERONÆUS SECUNDUS.

SEMILUNA'RES CARTILA'GINES are placed upon the upper part of the tibia; they are thick on the outside, and contribute to enlarge the cavity. As they are moveable and variable, adapting themselves to the condyles in the various motions of the joint, they add to its flexibility and assist its rotation.

SEMIMEMBRANO'SUS MU'SCULUS rises tendinous from the posterior part of the tuberosity of the ischium, close to the origin of the musculus quadratus femoris, and is inserted into the back part of the internal condyle of the tibia.

SEMINERVO'SUS MU'SCULUS, or *semitendinosus*, lies upon the outside of the semimembranosus, forming, at its origin, one mass with the head of the biceps. When they have run together a little way they part, the semitendinosus running to the internal condyle and upper part of the tibia, making, conjointly with the sartorius and the gracilis, a fascia.

SEMI-ORBICULA'RIS. The orbicular muscles of the lips, if considered as two, are called *semi-orbicularis superior* and *inferior*.

SEMIRHOM'BUS. See HEMIRRHOMBIUM.

SE'MIS. See CYATHUS.

SEMISPINA'LIS. See SPINALIS DORSI MAJOR.

SEMITENDINO'SUS. See SEMINERVOSUS.

SEMITERTIA'NA FE'BRIS, *hemitritæus*, a fever returning every day, with a remission interposed more remarkably between the irregular and regular day than between the regular and irregular day, in fact, a double tertian. See INTERMITTENS and REMITTENS.

See Hoffmann on the Semitertian Fever; Lommius's Medical Observations; Cleghorn on the Diseases of Minorca; Hunter on the Diseases of the Army; Senac de Recondita Febrium Natura; Fordyce on Fever.

SEMPERVI'VUM, (from *semper, always*, and *vivo, to live*; because it is always green). See SEDUM.

SENE'CIO ASIA'TICUS, MADRASPATANUS. See CHINA SUPPOSITA.

SENE'CIO BRASILIENSIS. See CAAETIMAY BRASILIENSIS.

SENE'CIO VULGA'RIS, (from *senesco, to grow old*; because it has a greyish down, like the beard of an old man). See ERIGERUM.

SENE'CTUS, (from *senex, old*). See ÆTAS.

In the article HOMO, q. v. we have collected the different facts which point out the progressive changes in the constitution from youth to age, in reality, from the embryo to the man sinking under the accumulated weight of more than fourscore years. This might have appeared sufficient; but, when we considered the subject more nearly, there are various circumstances, both practical and dietetical, which claim our attention; nor need we cite the authority of the dramatist on this occasion, "*Senectus ipsa morbus*."

The great changes which take place in advanced life we showed to be a want of irritability in the muscular fibres, a diminished sensibility of the nervous, with an obliteration of a considerable part of the arterial system.

> "*Multa senem circum veniunt incommoda, vel quod*
> *Quærit, & inventis miser abstinet, & timet uti:*
> *Vel quod res omnes timide gelideque ministrat;*
> *Dilator, spe longus, iners, avidusque futuri,*
> *Difficilis, querulus, laudator temporis acti*
> *Se puero, censor castigatorque minorum*."

This is a faithful and elegant picture of the mental imbecilities of old age, to which we may add a less activity in volition, or a greater interval between the sensation and the action. The corporeal are not less striking. The body is bent; for the flexor muscles are still less counteracted by the extensors than even in youth, and resemble their state during the relaxation of sleep. The knees yield from imbecility; the gait is unsteady; the jaw and the under lip hang down; the whole body is extenuated, and every muscle on exertion trembles. Constitutions, however, often greatly differ; and the robust husbandman, the active mountaineer, often the old soldier of seventy-five, are active and robust, with little change in any of the functions. The foreign authors frequently indulge in inquiries whether old men should marry, and think that the offspring, if any, is weak or diseased. This question makes no part of our political medicine, and therefore it requires no farther notice. We may add, however, from our own observation, that if the other parent is of a middle age and a firm constitution, the children are in general strong and healthy. The causes of extended life previous to the deluge, which have engaged the attention of many of the German physiologists and divines, are still less within our province. It is probable that the patriarchal lives were dynasties; for without a miracle, and no such is recorded, the human constitution would not have so quickly changed. The tales of life extraordinarily extended are in the greater number of instances apocryphal.

The causes of long life are various, according to different authors. It is said, that a judge was anxious in

his inquiries respecting the mode of life of every man in a very advanced period of life, adduced as an evidence, but found that they agreed only in early hours, both of retiring to rest and rising. The various rules laid down by foreign authors are truly ridiculous. One recommended venesection occasionally; another, honey; a third, wine more largely diluted than formerly; others, the diminution of the proportion of solid food, or its total omission. In general, we find the appetite for solid food lessened, though some old people eat voraciously, with little inconvenience. Sweets of every kind are unusually grateful, and the inclination for wine frequently lessens. These are apparently the dictates of nature, and may be safely followed. Wine is said to be "the old man's milk;" but it is often unpleasant, and, where wholly discontinued, we have not found any great inconvenience follow.

The principal diseases of old age arise from torpor, and from venous plethora. The torpor is perceived in every function. The perspiration is retarded, often wholly checked, probably from weakened circulation, or the obstruction of the smaller arteries. The bowels are bound, the urine in small quantity and high coloured; the saliva only copious from debility; the fæces and the urine involuntary from the same cause. The extremities are cold, and the whole body is wrinkled. The venous plethora induces load in the head, followed by apoplexy or palsy; asthma, occasioning catarrhus suffocativus, or hydrothorax; piles, or obstructions of the liver, the sources of dropsy. Of all these we have already spoken in their proper places, and can only add, that they are not prevented by venesection. The chief remedies of old age are a moderately cordial diet, with the most anxious attention to the excrementitious discharges. Lying long in bed must be indulged, from the concomitant debility, and from its assisting the determination to the skin.

SE'NEGAL GUM. See GUMMI RUBRUM ASTRINGENS.

SE'NECA, (called from a tribe of Indians who used it against the bite of the rattle-snake); AMERICAN MILK-WORT, RATTLE-SNAKE ROOT, *polygala senega* Lin. Sp. Pl. 990. The leaves are pointed, and somewhat oval; the stalks upright and branched; the flowers white; the root variously bent and jointed. It is about the thickness of a little finger, and resembles the tail of a rattle-snake with a membranous margin, which runs its whole length on each side; outwardly of a yellowish or of a pale brownish colour, internally white; a native of Virginia, Pennsylvania, and Maryland, and cultivated in our gardens. This root is said to be a specific against the poison of the rattle-snake; the powdered or fresh root beat into a cataplasm is applied externally, and a decoction taken inwardly. (See BOICININGA.) As the poison from the bite of a viper is apt to produce difficulty of breathing, cough, hæmoptysis, a strong quick pulse, &c. evident symptoms of peripneumony, it was thought that the senega might, in diseases of this kind, be an efficacious remedy; and this it has apparently proved after bleeding, though it seems to owe its efficacy to its emetic and cathartic powers. It indeed appears to be a general evacuant, producing a plentiful spitting, increasing perspiration and urine, frequently purging and vomiting. In pleurisies, whether inflammatory or spurious, in the rheumatism, gout, gouty rheumatism, and the humoral asthma, it is considered as singularly useful: it has been prescribed with success in dropsies, and thought to have great power in attenuating the blood. (See PLEURITIS.) The powder is preferred to any other preparation, and the dose is from one to two scruples; but a decoction of three ounces of the root in a sufficient quantity of water, to strain off a quart, is usually given in a dose of from two to four spoonfuls three or four times a-day.

See Lewis's Materia Medica; Tennent's Essay on Pleurisy, Philadelphia, 1730, with his Epistle to Dr. Mead; De Haen, Ratio Medendi, iv. 352; who contradicts the last assertion by producing a strong fact against it.

SE'NEGA, SE'NICA, SE'NIGAL, GUMMI. See GUMMI SENEGALENSE.

SE'NNA, (from the Arabian word *senna, acute*; from its sharp-pointed leaves), is a shrub with a rosaceous flower, followed with a pod containing seeds like grape-stones.

SE'NNA ALEXANDRIANA; because it is exported from Alexandria; *folia Orientalia, cassia senna* Lin. Sp. Pl. 539, ALEXANDRIAN ACUTE, SIX-LEAVED SENNA. The leaves, which are the parts in use, are of a lively yellow-green colour, an oblong, somewhat oval figure, sharp-pointed at the end, about a quarter of an inch broad, and not an inch long. Those which appear bright, fresh, free from stalks and spots, that are well and strongly scented, smooth and soft to the touch, thoroughly dry, sharp-pointed, bitterish, and somewhat nauseous to the taste, are preferred. There are inferior sorts, but they are generally distinguished by their not being pointed, but more or less broad at the end. Of this kind is the Italian senna, a medicine much less active as a purgative. It grows in Jamaica, and is a variety of the Alexandrian senna.

The Arabians first used this medicine, which is a moderately strong, and in general a safe, cathartic. Dr. Alston prescribed it in ardent fevers; and frequent experience manifests its advantage even in the most delicate habits, and on the most robust it operates sufficiently. Two drams of these leaves are infused in four ounces of warm water, and the addition of acids takes off the nausea which it excites. As the griping quality depends upon its resin, the dilute infusions will be the freest from this effect. From ℈i. to ʒi. of the powder is usually sufficient for one dose.

Senna yields its virtues both to water and to spirit, but long boiling lessens the purgative quality. If the senna is infused with bohea tea, its nauseous quality is covered as well as by the figwort; and if infused in a decoction of guaiacum, its purging quality will be, it is said, increased, and the usual griping prevented. Coriander seeds cover the taste of the senna; but cardamom, ginger, or some of the warmer aromatics, are more effectual for preventing the colic pains. It generally requires to be quickened with the jalap or scammony.

Electarium sennæ, formerly the *lenitive electary*.—Take of senna, eight ounces; figs, one pound; the pulp of tamarinds, cassia, fresh prunes, of each half a pound; coriander seeds, four ounces; root of liquorice, three ounces; clarified sugar, two pounds and a half. Let the senna and coriander seeds be powdered, and passed

through a fine sieve to the weight of ten ounces, and boil the remainder with the figs and liquorice in four pints of distilled water to two; then press off the liquor, and strain. Evaporate the fluid to about one pint and a half, afterwards add the sugar to make a syrup, which must be gradually added to the pulp, the powder afterwards mixed. Dose ʒss. to ℥ss.

Infusum sennæ simplex.—Macerate an ounce and a half of senna and one dram of powdered ginger, in a pint of boiling distilled water, for an hour, in a close-stopped vessel, and strain the liquor. The dose ℥i. ss. to ℥ij.

Infusum sennæ tartarisatum is made of the same quantity of senna and boiling water, to which are added two drams of crystals of tartar, and half an ounce of coriander seeds bruised. The crystals of tartar are first dissolved by boiling in the water, which is poured upon the other ingredients, and managed as above. The dose is the same.

Extractum sennæ.—A pound of senna is boiled in a gallon of distilled water, as in making other extracts, to which a little rectified spirit of wine is added, and the strained liquor reduced to a proper consistence. This is a weaker purge than the powder, but occasions a more painful colic. The dose ʒss. to ʒij.

Pulvis e senna compositus.—Take of senna, crystals of tartar, each two ounces; scammony, half an ounce; ginger, two drams. Powder the scammony separately, the rest together, and mix them. The dose gr. 10. to ʒi.

Tinctura sennæ.—Take of senna, one pound; carraway seeds, bruised, ℥i. ss.; lesser cardamom seeds, freed from their husks, ℥ss.; raisins stoned, ℥xvi.; proof spirit of wine, one gallon: digest for fourteen days, and strain. Dose ℥ss. to ℥ij. Pharm. Lond. 1788.

See Lewis and Tournefort's Materia Medica; Neumann's Chemistry.

SE'NNA PA'UPERUM. *Mauritanorum, Europæa,* and *spuria.* See COLUTÆA.

SE'NNA SCO'RPIUM. See EMERUS.

SENORIA. See BANANA.

SENSATIO, (*à sentire, to feel*). Sensation is that function by which we judge of the nature or qualities of external bodies, or of the state of our own organs. By this definition we exclude what physiologists have styled *sensus interni,* which are purely mental functions, and thus limit the term to the effects of impressions only. Sensation is conveyed by the nerves to the sensorum commune, and the impression is made on them generally through some medium, which either defends their sensible extremities from a too violent impulse, or modifies the effects of the impelling power. Thus the structure of the eye conveys a distinct image to the retina, which rays, continually diverging, could not otherwise form; that of the ear confines and increases the impulse of sonorous bodies. Smelling and tasting are more similar to touching, for these senses require the access of the body, whose quality is to be perceived in a more or less attenuated state. The nerves, like those of the fingers, are defended by integuments; but are in some inexplicable manner adapted for conveying appropriate impressions, though these sometimes intrude on each other's confines, and the smell gives some idea of the taste, or the contrary. Touch may be said to reside exclusively in the tops of the fingers; for by these we discriminate most accurately the external properties of bodies, though the sense, in a less distinct degree, is found in every part of the surface.

The definition of sensation given above includes not only the distinct *sensation of impressions,* but the less distinct, internal sensations, which Dr. Cullen has styled *sensations of consciousness.* The latter he refers to the following heads: 1. Those of *apperception,* by which we are in general conscious of thinking, perceiving, judging, and willing, and thereby of our existence and identity. This is the foundation of Des Cartes' philosophy; Cogito; ergo sum; and these sensations differ from the exercise of volition, judgment, &c.; for they imply only a consciousness of the power. 2. The sensations arising from the accuracy or facility by which these functions are carried on. 3. The sensations arising from the particular state of volition, and its various modes. 4. Those arising from the general state of action, as vigorous or weak. 5. Those from particular actions, or a consciousness of the actions excited, and of the motion of particular parts of the body. 6. From the diminution or absence of impressions.

Dr. Cullen observes (and we mention his name particularly, as these opinions have been publicly attributed to Dr. Hooper), that the four first genera of sensations, viz. seeing, smelling, hearing, and tasting, give no indication of the nature of the bodies; but that the sensations arising from touch correspond with the peculiar state of the impressing body, both with respect to bulk, size, hardness, impenetrability, rest, and motion. Perhaps some objections might be raised to a proposition so unlimited, were minute disquisition admissible in this place. It is of more importance to proceed with the very ingenious professor, and to add, that to produce a sensation of impression, a certain force corresponding to the sensibility of the organ or to the idiosyncracy and habits of the person is necessary. Too weak an impression produces no sensation: one too strong, either pain or an indistinct idea. Different sensations also depend on different degrees of force combined with the previous state; as the air may feel cold or warm, according as the person comes from a much higher or a much lower temperature. Some duration of the impression is also necessary to convey a distinct idea, and to the touch this duration must be longer than in the other senses: a sensible interval also takes place between the impression and the idea, which seems to be employed in penetrating the cuticle. Next to the touch, the taste requires an interval; but this varies with the nature of the sapid body. For this reason, the best writers on the materia medica distinguish the times required for any medicine to produce its appropriate taste.

When the mind rests for some time on the impression it is styled *attention,* and this is necessary to ascertain the force of the impression, often its existence. Thus persons apprehensive of any disease fix their attention on the part affected, and magnify every little feeling which would otherwise pass unregarded. This is particularly the case with syphilitic patients, and those styled nervous: in both diseases the mind is greatly affected. In other repects the degree of attention is influenced by the force of the impression, by its pleasantness or pain, by the emotions arising from either, and by the relation which these emotions have to the person who feels. If the attention is alive, and excited by the

different circumstances mentioned, the impression remains after the action of the external body has ceased. Thus a lighted stick whirled round, with no great velocity, conveys the idea of a circle of fire; for the first impression is not lost before it is again renewed: an example adduced to prove the elasticity of the fluid which conveys the impression to the mind.

The mind admits of, or can attend to, only one sensation at a time, and the strongest, sometimes the most interesting, from the relations just mentioned, fixes the attention. There is, however, a fallacy in observations of this kind, arising from the rapidity with which the mind passes from one sensation to another, or from different impressions combining in one idea. The union of smell and taste we have mentioned, and the voice of Catalani combines in producing pleasure with the splendor of the scenes and dresses. It is supposed by the author whom we follow, without servilely copying him, Dr. Cullen, that these different impressions unite in producing one neutral sensation; but we suspect that this supposed combination is rather the result of the rapidity with which the mind passes from one sensation to another, especially when the sensations are nearly connected, or from the rapidity of their succession, while the former impression continues.

The same impression, by repetition, produces a sensation less lively and less interesting; hence the charms of novelty. Slight impressions, by repetition, lose altogether their power of exciting sensation, and they must be increased to produce their accustomed power. On this account, those who drink spirit and water increase the proportion of the former imperceptibly, unless accustomed to measure it.

We have already remarked, that the effect of the impression differs according to idiosyncracy and habit; but it differs also in the same person at different times. The latter is sometimes connected with the degree of sensibility of the nerves, which is increased by warmth, by the tension of the vessels dispersed on them, by the state of the fluid which conveys the impression, or that in the brain. The degree of attention and of emotion excited by the impression increases also the liveliness of the sensation. In these remarks we assume as principles that sensations depend on the nerves; but many parts appear acutely sensible in different situations which have few nerves, and some, from experiment, are found to possess little sensibility, to which some considerable nerves can be traced. Each observation appears to be, therefore, fallacious. We know that the nerves convey sensations; because if these are tied or obstructed, the part becomes insensible, and we must consequently conclude, that not the presence of nerves only, but their expansion, when they have deposited their coats, renders them capable of conveying impressions. On the other hand, parts to which few nerves can be traced may become highly sensible, if these nerves are excited by the increased tension of the vessels connected with them. The experiments of Haller and others are daily contradicted by painful experience.

Our sensations, respecting impressions on the surface, are sufficiently accurate; but by no means strictly so. The internal sensations are often indistinct, particularly those connected with the ganglionic system, for reasons already explained. (See NERVI). The internal feelings are often referred to the incumbent external part, with some obscure distinction between the more deep and the more superficial. We thus find great inconvenience in the difficulty of distinguishing between pleurodyne and pneumonia; between peritonitis and enteritis. Sensations are referred sometimes to impressions made on a very distant part; as the pain in the neck of the bladder, or in the urethra, is felt only in the extremity of the glans penis; sometimes to a part which does not exist, as a pain in the toe after the loss of a leg, and in a tooth which is artificial. In fact, the pain in the trunk of a nerve is referred to the extremity, and the association remains when the extremity has been separated. We may thus explain the return of the pain of the TIC DOLOREUX, q. v. after the nerve has been divided.

The sensations of consciousness are referred indistinctly to the encephalon, particularly the two first, which relate chiefly to functions purely mental. Those which arise from the particular state of volition, are equally referred to the head when moderate; but, if more violent, to those parts in which their effects are exerted. The remaining sensations are seldom referred to a particular part; but, in general, to a whole member or organ. We are not conscious of the action of particular muscles, except when their action is spasmodic.

Perceptions, formerly received, are renewed without a repetition of the objects which excited them. These perceptions, if we recognise the less perfect image, is called an idea: if we think it equally vivid, and consequently suppose the object present, *imagination*, which arises from a too acutely sensible state of the brain from different causes; but chiefly from increased tension, in consequence of a greater fulness of the blood-vessels, or from increased excitement of the nervous fluid.

Sensations in general are either *pleasant* or *painful;* and these terms are relative. The remission of pain conveys pleasurable sensations, while the same degree of pain, from a state of absolute ease, would be painful. Dr. Cullen would refer the term *agreeable* to external bodies, and *pleasant* to internal sensations: the terms *disagreeable* and *painful* are employed with a similar distinction. These must be carefully separated from sensations of consciousness connected with debility, lassitude, &c. and particularly from that very obscure feeling generally arising from a sense of obstruction, which we term ANXIETY. All these sensations may, in common language, be styled *uneasy*.

Sensation and action within certain limits are always desired, and are usually pleasant. The want of sensation, even imperfect, indistinct sensations, are uneasy. In actions of every kind, sensations of debility and difficulty are also *uneasy*. Sensations of impressions, if moderate, are *pleasant;* if violent, *painful;* allowance being made for their degree, for the sensibility of the person, or the state of the organ. As impressions, from repetition, produce weaker sensations, so painful ones, at first, may afterwards become pleasant; or the pleasant sensations become insipid; at last uneasy, for lighter impressions to those accustomed to the stronger are generally such. Hence arise the charms of novelty, the desire of variety, and of gradually increasing the force of pleasant impressions. In general, however, it appears an indisputable axiom, that no sensations arise in the mind without a corresponding change in the state of the body. *There are no innate*

ideas, but all arise from external objects variously combined, modified, and sometimes heterogeneously grouped or distorted.

SENSI'BILIS, (from *sentio, to perceive*). SENSIBLE, whatever is capable of making an impression on the senses.

SENSI'BILITAS, (from the same). SENSIBILITY, the quality of perception, and often its degree, is occasioned by some alteration in the organ of sense. It is connected with the brain, or its prolongations, the nerves, but its degree frequently depends on a variety of causes already considered. See SENSATIO and NERVUS.

Every part of the body, with few exceptions, is sensible, except the hair, epidermis, and the extremities of the nails: among the insensible parts Haller reckoned the bones, the membranes, the cartilages, and the glands; but there is no organ insensible when inflamed, and consequently no part, except those mentioned, deserves that appellation.

Sensibility is a term often referred to mind, and those acutely affected with tales or scenes of distress are said to possess great sensibility. It is often the delusive covering of artifice and fraud; but frequently the effect of indulging the contemplation of distress in the fictitious scenes of the novelist. The mind, in these cases, may be compared to the body denuded of the cutis, where the touch of a fly is a source of pain. It is truly a mental disease.

Fordyce's Elements, part i.; Medical Commentaries by Dr. Hunter.

SENSO'RIUM COMMU'NE, (from *sensus, the senses*); *critheterium*. Des Cartes supposed it to be the pineal gland; Willis that portion of the brain where the nerves of the external senses terminated, about the beginning of the medulla oblongata, in the corpus striatum.

SE'NSUS EXTE'RNI. The external senses are those of SEEING, HEARING, TASTING, SMELLING, and FEELING, q. v. In touching, tasting, and smelling, we are conscious of the impression, but not in hearing or seeing; on which account the latter are considered as more refined. Of these seeing has the pre-eminence, as it conveys to the mind more vivid images, and a greater number of qualities, especially when assisted by the touch.

> *Segnius irritant animos demissa per aurem*
> *Quam quæ sunt oculis subjecta fidelibus, et quæ.*
> *Ipse sibi tradit spectator.*

The connection between the impression and the idea is wholly unknown. We see only in the eye an image on the pulpy part of the retina; but it is by no means probable that the same image is conveyed to the brain. It is sufficient if corresponding impressions are conveyed; but even in that case we scarcely approach nearer to a solution of the question, unless we knew the connection between the medullary substance of the brain and the mind. We know that the undulations of a cord which conveys a sharp sound, are much more rapid than those which convey a grave tone; yet there is no connection between the rapidity of the undulations and the idea excited. In short, while the nature of mind continues uncertain, the connection between ideas and sensations must be obscure. We no longer believe the bold and ingenious conjecture of Leibnitz, styled *the pre-established harmony*, where the actions of body and mind, though distinct and independent, are supposed to be simultaneous, and consequently appear to be connected as cause and effect. Other explanations are by no means more satisfactory.

A sentient nerve runs from its origin to its termination, without any connection with any other nerve, which accounts for the distinctness of the idea; and it is probable that ideas have a "local habitation," since arbitrary signs, as words, recal them, when conveyed by the same or a neighbouring nerve. Association, however, assists al•• in recalling ideas, and the same solution will not apply, as the sound of the drum or trumpet will recal the distressing scenes of the field: the sight of a cup which has contained a bitter draught will bring back the idea of the taste. To pursue this inquiry would lead us from our subject, and plunge us into the obscure regions of metaphysics. Of *sympathy* we have already spoken (see NERVUS); but the proximity of the origin of the nerves will by no means account for the different facts of this kind until the nervous fibrils shall be more minutely traced within the brain. We have added all the observations on this subject which we have been able to trace in authors of established credit; but must return to the subject. See SYMPATHIA.

See Lord Kaims' Elements of Criticism; Reid's Inquiry.

SE'NSUS INTE'RNI. The INTERNAL SENSES are affections of the mind excited by its perception of ideas, and are, imagination, memory, attention, and the various passions.

SENTICOSÆ. The BRAMBLES. A natural order in the Linnæan system, comprehending the agrimonia, alchimilla, aphanes, comarum, dryas, fragaria, geum, potentilla, rosa, rubus, sibaldia, and tormentilla, which contain, in different parts, an astringent principle.

SEPARATO'RIUM, (from *separo, to separate*). The name of an instrument for separating the pericranium from the cranium; and of a chemical vessel for separating liquors, but particularly the essential oil of any vegetable substance from the water that is distilled from it.

SE'PIÆ, OS, (from *sepia, the cuttle-fish*, derived from σηπω, *to putrefy*, because its blood looks black and putrid), *præcipitans magnum*, CUTTLE-FISH BONE. The cuttle-fish is a polypus, called *calmar;* and its bone, when calcined in the sun, is sometimes used as a dentifrice.

Linimentum sepiæ is made by levigating a dram of cuttle-fish bone with as much sugar-candy, to which two scruples of calomel are added, and the whole is formed into a liniment with honey of roses. It is used for opacities of the transparent cornea of the eye.

SEPIARIÆ, (from *sepes, a hedge*). A natural order in the fragments of Linnæus, containing woody plants, ornamental in hedges.

SEPO'MENON, (from σηπω, *to putrefy*). See MORTIFICATIO.

SEPTA'NA, (from *septum, seven*), *septimana*. A SEPTENARY FEVER, which completes its period in seven days. It is sometimes the appellation of an er-

ratic intermitting fever, which returns every seventh day.

SEPTARIA. Fossils divided by partitions, much employed by Dr. Hutton to illustrate his peculiar theory, but of little or no use in medicine.

SE'PTICA, (from σηπω, *to putrefy*). SEPTICS. Medicines which promote putrefaction, or which destroy animal substances by corrosion. See MATERIA MEDICA, and PUTREDO.

SE'PTICUS LA'PIS. See CAUTERIUM POTENTALE.

SEPTIFO'LIA, (from *septum*, and *folium*). See DENTARIA.

SEPTIMA'NA. See SEPTANA.

SEPTINE'RVIA, (from *septem*, and *nervus*). See PLANTAGO LATIFOLIA.

SE'PTUM CEREBRI. The falciform process of the dura mater.

SE'PTUM CEREBELLI. A process of the dura mater dividing the cerebellum.

SE'PTUM CO'NCHÆ. See AURICULA.

SE'PTUM CO'RDIS, vel VENTRICULORUM, (from *sepes, a division*). The partition between the two ventricles of the heart. See COR.

SE'PTUM LU'CIDUM. The thin partition which divides the two lateral ventricles of the brain, a continuation of the corpus callosum, and united on its lower part with the fornix. See CEREBRUM.

SE'PTUM NA'RIUM, *interseptum;* the partition betwixt the nostrils: it is formed by the descending laminæ of the os ethmoides, as well as by the vomer, and placed in the groove framed by the cristæ of the ossa maxillaria, and rising edges of the ossa palati. The cartilage which forms its lower part is joined to the anterior edge of the middle portion of the os ethmoides, to the anterior edge of the vomer, and to the anterior part of the groove formed by the ossa maxillaria, as far as the nasal spines of these bones.

SE'PTUM PALA'TI. See PALATUM MOLLE.

SE'PTUM SCRO'TI. See SCROTUM.

SE'PTUM THORACIS. See DIAPHRAGMA.

SE'PTUM TRANSVE'RSUM. See DIAPHRAGMA.

SE'PTUNX. See CYATHUS.

SEPULTURA, (from *sepelire, to bury*). SEPULTURE. With the life of the patient the cares and anxieties of the physicians are supposed to cease: but two circumstances have contributed to distress timid or hypochondriac persons; one, the apprehension of premature interment, while life remains, which may return in the grave; another, the danger of disseminating disease and death by burying in churches, or within the walls of large crowded cities. On each subject we shall add a few observations.

We have already mentioned the fallacy of the signs which have been supposed to discriminate death (see MEDICINA POLITICA); but at the same time have shown, that by the concurrence of the most certain changes, the real state may be ascertained. In this climate it is highly proper that no body should be interred till some appearance of putrefaction has come on; and if in lower latitudes interment is necessarily more quick, it must be remembered, that the more rapid approach of putrefaction is the cause. Sonnerat and Marx have pointed out the precautions of the Jews and Hindoos on this point; but in this climate we wait only the appearances of incipient putridity.

The danger of recovering in the dreary cell seems inconsiderable, and the numerous stories which have been related on this subject are in general, we believe, fictitious. We have witnessed the disinterment of more than one, near whose grave noises have been heard, and returning life been suspected, but the corpse had not moved. Such facts are, however, recorded, and the greatest caution is necessary. But we ought, on the other hand, to reflect on the great improbability of a person breathing again in a coffin, who had not for a long time breathed in the open air; and there can be little doubt but if a breath or two were drawn, it would be checked by the confinement before sensation returned. This at least would mitigate the horror of the event, and prevent the methods of extinguishing every spark of returning life by an operation.

The attention of the world was particularly directed to the impropriety of burying in churches, or within towns, by the dissemination of infection on opening a grave at Lyons. The danger, however, is inconsiderable; though we admit, in every view, the impropriety of sepulture in churches, or within towns. But while such continues to be the custom, it is of consequence to quiet ill-founded apprehension; nor is there the slightest reason to suspect the dissemination of infection, except perhaps during a reigning pestilent epidemic, whether the plague or a highly putrid fever. Even in such cases, before the coffin is decayed, new affinities have taken place, and the body is not as it was. A common custom of hanging over the grave, either from affection, or, as is too frequent, from idle curiosity, should be repressed. While one last look is indulged the breath should not be drawn.

The reasons against burying in churches consist chiefly of the damps diffused, and tincturing the cheerfulness of real piety with pain and regret. Churchyards in towns are generally the play-places of boys. The objects themselves give pain, and the little reverence paid to the repositories of our friends is often the source of considerable anxiety.

SERA'PIAS, (*serapis, a lascivious idol*, either from its supposed aphrodisiac powers, or from the testiculated shape of the root). See ORCHIS.

SERAPI'NUM. See SAGAPENUM.

SERAPIO'NIS GUMMI. See GUMMI ARABICUM.

SE'RGELIM. See CORALLODENDRON.

SE'RICUM, (from the *Seres, a people of Lower Bucharia*). SILK. Raw silk, when calcined, is said to excel the sponge in its medical effects; for it yields more volatile salt than any other animal substance. In Switzerland, the volatile salt of raw silk is called the English salt; and they give the same name to the volatile salt of vipers. It is an error to suppose the Seres a race of Indians or Chinese. The ancients were wholly unacquainted with China.

SERIFLU'XUS, (from *serum*, and *fluo, to flow*). A class of diseases consisting of serous discharges.

SERI'FOLE BENGALE'NSIUM. See COVALAM.

SERI'OLA. See ENDIVIA.

SERIPHIUM, (from *Seriphas, an island on which it grew*). See SOPHIA.

SERPENS, (from *serpo, to creep*). SERPENTS, the source of terror and the objects of adoration; the emblems of wisdom, prudence, and eternity in former ages; no longer inspire apprehension or admiration. If we omit the fables of antiquity, we may also omit the idle tales of the medical reporters of wonders, who have told us of serpents discharged from different parts of the body, though we find Fabricius, Camerarius, and some names of respectability in the list.

Serpents are animals, which breathe only by means of lungs, with a round body, an indistinct neck, moving by undulations, jaws not articulated, but dilatable, no obvious external ears. Their skeleton is formed of numerous vertebræ, and ribs which are very mobile, without any sternum; their throat is wide, and their œsophagus capable of considerable enlargement, so that they can swallow animals of considerable bulk. They swallow them, indeed, by degrees; for one part is digested before the other is taken in, and in this state of glutinous torpor they are easily killed. The poison of the serpent is exclusively in his teeth, which we shall soon notice. The tongue, which is darted forth as a javelin, often a double one, for it is occasionally split, can inflict no wound; and the spur, or claw, near the anus of some East-Indian serpents, used occasionally as a weapon of offence, has not been accused of conveying poison. Though the ancient fables of the dragon are without foundation, there is a small innocent animal, provided with wings, which resembles it; but this is a lizard. No serpent is winged; yet by an effort they can leap at some distance. Their pace, however, is usually slow. Their reputed powers of fascination seem, according to Dr. Barton, to arise from the terrors which they inspire in birds apprehensive of danger to their young broods.

Later observations have, in a great degree, destroyed the terrors formerly entertained of their poisonous qualities. Few are capable of injuring by their bites, and of these a very small proportion can at all times inflict a fatal wound, especially on larger animals. This is therefore the reason that many specifics have been commended, which in cases truly dangerous have failed.

The distinction between the poisonous and innocent kinds is not generally known. The first distinct account which we recollect was given by Dr. Gray, in the Philosophical Transactions for 1789; for the distinctions of Redi, Swammerdam, and even Linnæus, were often erroneous. Some of the serpents are said to have poisonous breaths; but all have a faint smell, probably from their long fasting.

Dr. Gray, in the volume referred to, thinks that a broad head, covered with small scales, though not a certain criterion, is, with a few exceptions, a general character of venomous serpents. A tail less than one-fifth of the length is another, though this mark is contradicted by a few facts; but a tail longer in proportion shows the animal to be innocent. A thin acute tail is not, on the whole, peculiar to the venomous class; but a thick obtuse one is only found among the innocuous ones: carinated scales, in general, distinguish the poisonous tribe. The fangs of the poisonous are not, in his opinion, always or essentially moveable: their size is various, and they are generally situated in the anterior and exterior part of the upper jaw, not connected with a row of teeth all round. Venomous serpents have two rows of teeth: innocuous ones four. About one in six serpents are supposed by Dr. Gray to be poisonous, though perhaps not capable of inflicting a fatal wound.

Though these distinctions have, since the period referred to, claimed the attention of numerous naturalists; yet we shall only mention the later opinions of Dr. Russell, in his account of the serpents of the coast of Coromandel. The principal distinction of this author consists in what he styles the marginal teeth, in opposition to the palatal. In effect he agrees with Dr. Gray, that venomous serpents have not a complete row of marginal teeth. With respect to the poisons of different snakes, they appeared, from the symptoms, much alike, and the order of the progression was the same, though the rapidity, as well as the commencement, varied. When a snake is first caught, its bite affects more certainly than when it is kept some time; but the deleterious nature of the poison is only impaired, not destroyed. When it no longer kills quadrupeds it is fatal to birds, though in a longer time. When a snake bites frequently in succession, the first wound is most quickly and certainly mortal; the others less so in their order. Animals are killed at different times, but not always or certainly in proportion to their size, and they sometimes unexpectedly escape from a concourse of very dangerous and alarming symptoms. The insertion of the poison is not so certainly fatal as the bite. It is generally known that the poison is a secreted fluid, preserved in a receptacle at the base of the fang, and conveyed through a groove at its side, when the bag is pressed by the substance bitten. Fontana thinks, though with little reason, that in the viper this fluid assists digestion.

The action of the poison of serpents has been differently explained. It is singular, respecting the viper, that Mead first thought it coagulated the blood, and in subsequent editions referred its action to the nerves. Fontana changed his opinion in the opposite way; but there is little doubt of its acting on the nerves, since the very minute quantity inserted could not produce any change on the circulating mass, and the rapidity of the effects is too great to admit of its having taken the circuitous route of the absorbents.

In considering the effects of remedies, we must make considerable allowance for the innocuous nature of many serpents reputed poisonous, and for the little power which many of those which are truly poisonous have on an animal so large as man. It has been attempted to extract the poison by suction, by cupping-glasses, by leeches, &c.; to stop the communication with the rest of the system by ligatures, to blunt its acrimony by applications of oil and oily frictions, the axunge of the serpent, or saliva. Each plan has been found ineffectual; and excision of the part, or amputation of the limb, are operations which require more time than the usual rapidity of the effects will admit, if we were not checked by the little danger which often follows the bites of serpents supposed to be venomous. Warm applications, as warm spirit of turpentine, and even warm water, are often useful; but the actual cautery, and even the mineral acids, were either inefficacious or injurious.

As the poison of serpents is of a sedative nature, it has been followed by the warmest sudorifics, and medicines which determine to the skin. The polygala seneka, which acts as an emetic, has the latter effect, and in Fontana's hands the tartarised antimony succeeded equally well. The theriaca was less successful; but the aqua ammoniæ, called in some authors on this subject the *fluor alkali*, particularly when combined with an essential oil, as in the eau de luce, has been highly commended. The Tanjore pill, whose efficacy is much boasted of, consists of white arsenic, quicksilver, killed with the juice of wild cotton; the roots of velli-navi, a poisonous vegetable from the Malabar coast; the roots of neri visham, and the kernels of nervalam, two drastic purgatives, unknown to systematic botanists. The ophiorriza mungos, the radix serpentum, is an intense bitter, apparently narcotic; the lignum colubrinum is from the same genus, perhaps the same species, which affords the nux vomica; but it is emetic and cathartic, raising considerable commotions in the system; and we find one authority for the use of the belladonna. (Munck in Richter's Bibliothica). We cannot easily reconcile the action of these narcotics with what we are told of the effects of the poison, except that they excite vomiting, which is neither the effect of the lignum colubrinum nor the belladonna, and must conclude that they were used in cases which would not probably have been otherwise dangerous. Cantharides were either useless or injurious; and, in reality, the volatile alkali and the eau de luce appear best entitled to our confidence. The COLUBRINUS LAPIS, q. v. is an artificial combination of no real value. Redi.

Serpents, it is said, are sometimes tamed, and become faithful companions; their flesh is highly nutritious, and they are of service in devouring rats, toads, and many noisome reptiles.

La Cepede sur les Serpens; Fontana sur le Venin de la Vipere; Russell's Account of Indian Serpents; Redi Opera; Mead on Poisons; Gray in the Philosophical Transactions for 1789.

SE'RPENS A'NGUIS. See ANGUIS.

SE'RPENS I'NDICUS CORONA'TUS. See COBRA DI CAPELLO.

SERPENTA'RIA, (from the resemblance of its roots to the tail of a rattle-snake). See DRACONTIUM.

SERPENTA'RIA HISPANICA. See SCORZONERA.

SERPENTA'RIA MI'NOR. See ARUM.

SERPENTA'RIA NI'GRA. See ASARUM VIRGINIENSE.

SERPENTA'RIA VIRGINIA'NA, *aristolochia, pistilochia viperina, colubrina Virginiana, contrayerva Virginiana*, VIRGINIAN SNAKE-WEED, SNAKE-ROOT, BIRTH-WORT, *aristolochia serpentaria* Lin. Sp. Pl. 1363, is brought from Virginia and Carolina. The root is small, light, bushy, and composed of a number of strings or fibres issuing from one head, and matted together, of a brownish colour on the outside, and pale or yellowish within. It has an aromatic smell, somewhat like that of valerian, but more agreeable, and a warm, bitterish pungent taste, not easily covered by any mixture.

Snake-root yields its virtue to water or to spirit; but the greatest part of its flavour is carried off either by water or by spirit in distillation, and if the quantity distilled be large, a pale-coloured essential oil, of a strong smell, but not a strong taste, rises with the water; the greatest part of the pungency and bitterness of the root remaining in the inspissated extract. The spirituous extract is stronger than the watery, not from its having lost less by evaporation, but from its containing the active parts of the root concentrated in a smaller bulk; its quantity amounting only to one-half of the other.

The Virginian snake-root has been thought to possess tonic and antiseptic virtues, and is allowed to be a powerful stimulant, and a warm diaphoretic. With this view, when the doctrine of concoction was held sacred, it was employed in low and putrid fevers, to raise the pulse, promote perspiration, and resist putrefaction; but even in these it is now seldom used; for wine is thought a safer cordial, and the aromatics more useful stimulants. This medicine was undoubtedly abused by a too free indiscriminate use, and it has now perhaps been too much neglected. In some intermittent fevers, the bark has been found more efficacious when joined with serpentaria than when given alone. We suspect that it may be useful in chronic rheumatism, and superior to the guaiacum. Led by the practice of a respectable veteran in medicine, we have found it, we think, an useful remedy in atonic gout. Dr. Alston says it resembles the aristolochia in virtues, but that he prefers the aristolochia tenuis to the serpentaria. The dose may be from gr. x. to ℥ss. and to a dram or two in infusion, or in tincture.

The Virginian asarum is sometimes sold for the snake-root, but may be distinguished by its darker colour.

The London college direct a tincture to be made of Virginian snake-root, three ounces; proof spirit of wine, two pints, digested for eight days, and strained. (Ph. Lond. 1788.) In this tincture, if powdered fine, the whole virtue of the root remains. It may be taken from two tea-spoonfuls to a table-spoonful, three times a day. See Lewis's and Cullen's Materia Medica.

SERPE'NTIS LA'PIS. See COLUBRINUS LAPIS.

SERPI'GO, (from *serpo*, because it *creeps* over the skin gradually); *herpes, impetigo*. Linnæus includes under this title tetters and ring-worms. See LICHEN and PURPURA SCORBUTICA.

SERPY'LLUM, (from the same, because its roots creep along the ground), *gilarum*.

SERPY'LLUM CITRA'TUM, *serpyllum thymus* Lin. Sp. Pl. 825, var. ε. LEMON THYME, differs but little from the mother of thyme in its appearance, except that it is upright and bushy. It is a native of dry mountainous places, common in gardens, flowers in July, is less pungent than the common thyme, more so than the mother of thyme, and more grateful than either. Its smell is like that of lemon peel; distilled with water, it yields a larger quantity of essential oil than the other sorts, which contains nearly all the medicinal parts of the plant. Spirit of wine also takes up the finer parts.

SERPY'LLUM VULGARE MINUS; COMMON MOTHER OF THYME, or WILD THYME; *thymus serpyllum* Lin. Sp. Pl. 825, var. α; COMMON SMALL WILD THYME: *hyssopus capitata*, grows wild on heaths and dry pasture ground, flowers in June and July, is an agreeable aromatic, similar to that of the other species, but milder, and in flavour rather more grateful. Its essential oil is in smaller quantity, as well as less acrid, and its spirituous extract is inferior in penetrating

warmth and pungency to that of the common thyme. See THYMUS.

SERRATULA AMARA, Lin. Sp. Pl. 1148, a plant botanically allied to the carduus and other bitters. It has been celebrated for the cure of agues.

SERRA'TUS, (from *serra*), indented or notched like a saw, an epithet of indented leaves.

SERRA'TUS A'NTICUS MA'JOR, (from the same). The FORE OF GREATER SAW-LIKE MUSCLE; *serratus magnus*, is broad, and fleshy: rising by digitations from the nine superior ribs, it passes backwards, and is inserted into the whole length of the scapula. Its largest portion is inserted into the lower angle of the scapula, which it rotates and brings forwards. Between every portion of this muscle a quantity of cellular membrane is interposed, especially about the middle, where it seems to divide it into two distinct muscles. Winslow divides it into three. If the pectoralis minor is called *serratus anticus minor*, this muscle is called *major*, otherwise it is simply called *serratus anticus*. Its use is to support heavy weights on the shoulder. It does not raise the ribs but by elevating the scapula.

SERRA'TUS ANTI'CUS MI'NOR. See SERRATUS ANTICUS MAJOR.

SERRA'TUS POSTI'CUS SUPE'RIOR, rises by a thin broad tendon, from the two upper vertebræ of the back, and the two lower of the neck, and is inserted into the second, third, and fourth ribs.

SERRA'TUS POSTICUS INFE'RIOR, rises from the fascia of the loins, and is inserted into the three last ribs, serving to bring them down.

SE'RTULA CAMPA'NA. See MELILOTUS.

SE'RUM. WHEY; the thin part of the blood. The serum of the blood contains, in solution, the gluten, which forms what is called the buff, after taking it from a vein; is fluid in any degree of heat between thirty and one hundred and sixty of Fahrenheit's themometer, and consists of a coagulable matter and water, in which common salt, muriated ammonia, and phosphoric ammonia, are dissolved. It contains also some superfluous water, which may be separated by filtration; but the addition of superfluous water does not affect its viscidity. The abstraction or addition of water in chemical combination will affect the viscidity of the mixt; but this never takes place in the circulating system, or at least very rarely. See MORBI FLUIDORUM.

The serum is usually thin, and naturally without smell or colour; but the gluten gives it a yellowish tinge, and the peculiar aroma of the blood some odour. It is coagulated out of the body by acids, oils, and alcohol; but these can never reach it in the vessels except in the most diluted state, and probably the lymphatics refuse to admit either uncombined. It has, however, in no instance been found in a coagulated state: polypi are partial concretions of the gluten.

It is sometimes white, probably from a recent mixture of unassimilated chyle (Hewson); sometimes acrid from a larger proportion of neutral salts (vide SCORBUTUS). It often oozes from secretory organs previous to their more perfect secretions, and in one instance was discharged from the navel. (Acta Naturæ Curiosorum, i. 94.)

SE'RUM ALUMINO'SUM. See ALUMEN.

SE'RUM LA'CTIS. MILK-WHEY. See LAC.

SE'RUM VINO'SUM. WINE-WHEY. See VINUM.

SESAMOI'DEA OSSA, (from σησαμη, *an Indian grain*, and ειδος, *likeness*). The SESAMOID BONES are those found at the articulations of the toes and fingers, sometimes at the condyles of the os femoris, and at the lower extremity of the fibula. Those at the first joint of the great toe are much larger than any others, and allow the flexors to send their tendons along this joint secure from compression, besides augmenting the force of the muscle by the angle of insertion. They are of very different figures and magnitudes, generally most numerous in old people; and Winslow thinks they are often formed from the ligaments or tendons about the articulations, where subjected to a strong compression. Cheselden observes that the sesamoid bones are reckoned to be forty-eight in number; but that there are commonly found but two under the ball of each great toe, two at the middle joint of each thumb; and sometimes one at the lower end of each thigh-bone, at the beginning of the plantaris muscle. He adds, that he found in some bodies the little cartilages at the receiving ends of the bones of the fingers ossified; and concludes, that those who enumerate forty-eight sesamoid bones have mistaken these ossifications for them.

They do not appear in the fœtus, and at first are cartilaginous. A life of hard labour seems to add to their number and size; were it not for the organisation of those of the great toe, they may have been thought exclusively the effects of pressure.

The great toe hath the largest sesamoids, and the inner one is the largest. The Arabic name for the sesamoid bone of its first joint is *albadara*, *aldabaram*.

Dr. James, in his Medical Dictionary, article ALDABARA, relates a case of frequent fits, which, after resisting various means of relief, were effectually cured by amputating the great toe: this operation was proposed on a supposition that the sesamoid bone there was dislocated, from whence the fits arose. He further adds a case which seemingly arose from an injury done to the sesamoid bone of the great toe. When the patient was first hurt, he was seized with a fit; and whenever he moved that toe, with another. These fits resembled epileptic ones, except that no froth was discharged at the mouth: the injured foot first began to be convulsed, then the leg, and from thence a very uneasy sensation ascended to the head, when the convulsions began to be universal. The event was fatal.

SE'SAMUM VE'RUM, (from σησαμη), *sesamum veterum, digitalis orientalis, gangila*; OILY PURGING GRAIN; *sesamum orientale* Lin. Sp. Pl. 883, is an Egyptian plant, the seeds of which afford a great quantity of oil by expression, but which, however, is not cathartic.

The oil when first expressed is pungent, but in about two years becomes mild, when it is freely eaten. The seeds when parched over the fire are eaten by the negros, mixed with various ingredients. Sometimes the seeds are used as millet and rice to make a pudding. The quantity of oil is more than two quarts from nine pounds of seed.

SESCU'NCIA, SESQUIU'NCIA, (from *sesqui, half*, and *uncia, an ounce*, AN OUNCE AND A HALF). See HEMIOLION.

SE'SELI VULGA'RE, (παρα το σαωσαι ελλον, be-

cause it is salutary to young fawns); *siler montanum, ligustrum; laserpitium siler* Wildenow, v. 1, 1418; COMMON HARTWORT, is a small umbelliferous plant, with large leaves set in pairs, and a large, thick, branched root. It is perennial, grows wild in the south of Europe, is raised in our gardens, and flowers in June.

All the parts of this plant are aromatic, of an agreeable smell, and warm sweetish taste; the roots are the most warm and pungent, the seeds most pleasant and sweet. A spirituous extract of the seeds is an elegant aromatic sweet. See Lewis's Materia Medica.

SE'SELI PYRENŒUM. See MEUM LATIFOLIUM ADULTUM.

SE'SELI MASSILIE'NSE; *fœniculum tortuosum;* ITALIAN and FRENCH HARTWORT, or HARTWORT OF MARSEILLES; the *seseli tortuosum* Lin. Sp. Pl. 373, is perennial, and a native of the south of Europe, from whence the seeds are brought. They are aromatic and warm, more pungent than those of the common hartwort, but without their sweetness. See Lewis's Materia Medica.

SE'SELI ÆTHIO'PICUM. See LASERPITIUM VULGATIUS.

SE'SELI CRETICUM; *tordylium officinale* Lin. Sp. Pl. 345. The seeds are diuretic.

SE'SELON. See COCHLEÆ.

SESQUI; one and a half.

SETA'CEUM. A SETON; (from *setæ equinæ*, because *horses' hairs* were first used; but now thread or cord is preferred as less painful); *perforatio*. Camanusali, a physician of Bagdat, who lived previous to 1258, mentions a seton in the cure of a disorder in the eye. Rhazes also speaks particularly of this remedy. Originally it was made with a heated needle, but Hollerius substituted a cold one.

This operation is performed by raising the skin with the finger and thumb, while an assistant does the same at about an inch or two distant; and having armed a large, broad, crooked cutting needle, made for the purpose, with the necessary number of threads, pass the needle through the stretched skin, and bring the threads a little way through. They are left in the wound, and as much of the thread as will pass into the seton at each time of dressing must be rubbed with the unguentum resinæ flavæ, moved forward every morning and evening, and thus the discharge will be promoted, and continued at pleasure.

According to Mr. Bell, when tumours in some situations are large, the seton empties them, whatever their size may be, very gradually; and effectually prevents the admission of air. The operation is not so painful, the inflammation so great, nor the cicatrix so unsightly as after a large incision. When the patients are otherwise in good health, it commonly succeeds with this advantage, that a cure is frequently obtained in little more than half the time usually found necessary after incision.

Setons are commended in HYDROCELE, q. v., in complaints of the head and eyes; and all disorders where issues are recommended. They may be used where issues would be inconvenient, and the discharge, as it is deeper and more extensive, is often more beneficial. In many cases, however, issues or perpetual blisters are equally advantageous. Blisters are more agreeable, and equally useful methods. See Heister's and Bell's Surgery, vol. iv. p. 382; Bell on Ulcers, edit. 3. p. 83, &c.; White's Surgery, p. 184.

SETA'CEUS, (from *seta, a bristle*); leaves of plants, covered with a bristly pubescence.

SETA'NIUM, (from *σητάνιος, a year's growth*, from the tenderness of the fruit). See AMAMELIS.

SEU'REN. See BOVINA AFFECTIO.

SE'VUM OVI'LLI. See PRÆPARATIO ADIPIS.

SE'VUM MINERALE. A bitumen found on the sea coasts of Finland in 1736, burning with a blue flame, smelling of grease, and leaving a black, almost incombustible, matter. It is lighter than tallow, and only 0.770, while tallow is nearly 1. It is partly soluble in alcohol, and wholly in boiling expressed oils. It is found also in Persia, at Strasburg, and some parts, it is said, of Lancashire.

SEXTA'NA, (from *sextus, sixth*). Erratic, intermittent fevers, which return every sixth day.

SEXTA'RIUS, (from the same). *Chist.* This term has been used both in liquid and solid measure, with numerous variations. Galen observes, that it was not formerly an Athenian measure, but received by the Greeks, though different from what it was among the Romans. Among the latter the sextarius included the pound, half pound, and a sixth, making together twenty ounces; the Athenians meant by it a pound and a half, i. e. eighteen ounces. It was sometimes only equal to three ounces. Rhodius distinguishes it into ponderal and mensural, adding that it contained two heminæ, or thirteen ounces. The same author asserts that the sextarius of dry ingredients was a pound; of liquid half a pound; the sextaria of two heminæ; the Arabian ponderal was half a dram, the Italian eighteen ounces of oil, twenty of wine and water, seventeen of honey. The sextarium of wine was also sixteen ounces, and as many scruples; of honey five-and-twenty ounces, according to some others. Castelli. See CYATHUS.

SE'XTANS. See CYATHUS.

SEXUAL SYSTEM. The artificial system of Linnæus, founded on the sexes of plants. See BOTANY.

SEYDSCHUTZ WATER. See SEDLITZ.

SHALE. A bituminous ore containing alum, or at least alum is formed during its calcination. It is chiefly found in coal countries, particularly in Derbyshire.

SHERBET. An acid perfumed drink, from Turkey and Persia. It is the origin by metaphrasis of shrub, and is often the name of the lemonade previous to its being formed into punch by the addition of spirit.

SHINGLES. See ZOSTER.

SIALOGO'GA, (from *σίαλον, saliva*, and *άγω, duco*). SIALOGOGUES comprehend all such medicines as produce a flow of saliva into the mouth. They have been divided by some authors into three classes; those which immediately act upon the salivary glands; such as occasion a flow of saliva into the mouth, by intercepting any discharge from other parts; and substances supposed to break down the mass of blood, and supply the mouth with too great a proportion of the dissolved fluid. At present they are divided into internal and topical. See MATERIA MEDICA.

SI'BBENS. A name of the venereal disease in some parts of Great-Britain. In the year 1773, Mr. Hill, a

surgeon in Dumfries, published his cases in surgery; to which he added an account of this disorder, in confutation of Dr. F[...]er's thesis, where it was asserted that the sibbens was different from lues. It is generally agreed nearly to resemble the disease; but mercury is not equally effectual in it. The disease is now little known. See YAWS; Gilchrist's Observations, Physical and Literary, Edinburgh, vol. iii.; Freer de Syphilitide Venerea, Appendix, 1707; Hill's Essays; Adams on Morbid Poisons.

SIBCADI. See BULBUS VOMITORIUS.

SICILIA'NA. See ANDROSÆMUM.

SI'CULA, (from *sica, a short sword,* from the shortness of its root.) See BETA.

SICYE'DON, (from σικυος, *a cucumber*). A TRANSVERSE FRACTURE; broken like a cucumber.

SI'CYOS. SINGLE-SEEDED CUCUMBER; *sicyos angulata* Lin. Sp. Pl. 1439; *cucumis Canadensis,* a native of North America and the West-Indies.

SIDERA'TIO, (from *sidus, a planet,* because it was supposed to be induced by the influence of the planets). APOPLEXY, q. v.; a sphacelus, or a species of erysipelas, vulgarly called *a blast.*

SIDERA'TIO O'SSIS. See SPINA VENTOSA.

SIDERI'TIS, (from σιδηρος, from its iron colour). See CHAMÆPITYS et MAGNES, SIDERATIS ANGLICA, and PANAX COLONI.

SI'DIUM. See GRANATA MALA.

SIGESBECKIA ORIENTALIS, Lin. Sp. Pl. 1269, a Chinese plant, of an ambrosial odour, and a bitter taste. It seems to have been useful in strangury; but in calculus, gout, and leucorrhœa, for which it has been recommended, it appears wholly inefficacious.

SIGILLA'TÆ TERRÆ, (from *sigillum, a seal*). SEALED EARTHS; BOLAR EARTHS, made into cakes, upon which is put some impress, differing according to their colour or titles. They are, however, essentially the same, factitious, and have been long neglected.

SIGI'LLUM HERME'TICUM. An HERMETIC SEAL. A glass vessel is said to be hermetically sealed, when the glass is melted, and the vessel by this means is closed.

SIGI'LLUM SOLOMO'NIS. See POLYGONATUM.

SIGI'LLUM BEA'TÆ MARIÆ. See BRYONIA NIGRA.

SIGMOI'DES PROCE'SSUS. See PROCESSUS CORACOIDES; called *sigmoidal* from its resemblance to the Greek letter sigma. Three valves of the heart have this epithet, viz. those of arteriæ pulmonales, and aorta. The semicircular cavity of the cubit, at the articulation of the fore-arm with the humerus, is sometimes called the sigmoidal cavity; the cartilages of the aspera arteria have the epithet sigmoidal applied to them by some authors; and the last curve of the colon before it terminates in the rectum is called the *sigmoid flexure.*

SI'GNUM. A SIGN. Symptoms are those particular appearances which, taken collectively, constitute what is termed disease, in general, as they indicate morbid changes, or a læsion of the functions. But there may be signs which are not symptoms, which appear without any previous complaint affecting the habit. A person having drank a large proportion of weak punch, will very often make a quantity of limpid urine, which cannot be considered as a symptom, as the person is in perfect health; but a patient labouring under hysteria will do the same without drinking. This then is an indication of some morbid state, and as such may be denominated a symptom. All symptoms therefore may be signs, but all signs are not symptoms. Signs are in general declaratory of the state of the diseases, as well as of something which has happened, or may occur, in the machine; symptoms only of the presence and nature of the malady itself. They have been therefore divided into diagnostic, prognostic, and amamnestic. The first discovers the state of the disease, and enables us to define and distinguish it from others; the second gives information of the changes which will happen during its continuance; the third enables us to determine what disease has previously affected patients, from which they have recovered.

SILEX, one of the vitrifiable earths of the former mineralogists, found generally of a globular form in beds of chalk; but said to rise in Saxony in hexaedrons, composed of two low three-sided pyramids, applied base to base. Its specific gravity is about 2.6; it is brittle, splitting into splinters in every direction, emitting, when two pieces are rubbed together, a phosphorescent light, and a peculiar odour. Its property of striking fire with steel is well known. When heated, it decrepitates, and when exposed to the air is soon covered with a whitish crust.

Water is essential to its nature, for when it is separated by heat, the stone loses its properties. It is dissolved by alkalies, and by the fluor acid. From its melting with alkali it forms glass, and the fluoric acid dissolves the silex in glass. Flint has been lately discovered in reeds and in the epidermis of many plants. In the tabisheer, a reed of India, it sometimes concretes near the joints in small nodules; and Dr. Gibbes discovered it in the waters of Bath. A small portion has been occasionally found in the animal fluids. It is very sparingly soluble in water, but seems to admit of being conveyed by it, or at least its elements are conveyed through passages wholly imperceptible.

SILI'CULA, (dim. from *siliqua, a pod*). A SILICLE, LITTLE POD, or POUCH; a two-valved pericarp, having the seeds fixed along both sutures, and the transverse diameter equal, or nearly so, to the longitudinal. This pericarp varies in shape; and is orbiculate, ovate, or flatted, entire at the end, or emarginate.

SILICULO'SA, (from *silicula*). The name of the first order in the class *tetradynamiæ* of Linnæus.

SILI'GO. See SECALE.

SI'LIQUA. An ancient weight, equal to three grains and one twenty-eighth. A POD, CARAB, or that kind of pericarpium which consists of two valvulæ, and in which the seeds are fixed alternately to each suture. Miller improperly applies this definition to the legumen.

SI'LIQUA HIRSU'TA. The COWHAGE. See PHASEOLUS ZURRATENSIS, and STIZOLOBIUM.

SI'LIQUA DU'LCIS, and SI'LIQUA E'DULIS; *caroba, carantia, ceratia, ceratonia.* The CAROB-TREE, grows in Sicily and Naples; the fruit called *ceratium* is cooling, and moderately laxative: the internal seeds of the fruit are named *xylococca.* At Venice they are much used.

SI'LIQUA SYLVE'STRIS SPINO'SA ARBOR INDICA. See CORALLODENDRON.

Si'liqua purga'trix, is from a large tree, a native of Guinea; the pod is much more purgative than that of the common carob. See Raii Historia.

SILIQUA'STRUM, (from its pods). Judas-tree. *Cercis, colytea, Judæ arbor, cercis siliquastrum* Lin. Sp. Pl. 534. *Icthyperia*, a name given by Dr. Hill to the bony palates of fishes, frequently found fossile in strata of stone, have been called *siliquastra* by Mr. Lhuyd, from their resemblance in shape to the pods of lupines.

Siliqua'strum Plinii. See Piper Indicum.

SILIQUO'SA, (dim. of *siliqua, pod*). The name of the second order in the class *tetradynamia* of Linnæus, containing those plants which have a proper siliqua for a pericarp.

SILIQUO'SÆ. The name of the fifty-seventh order in Linnæus's fragments; of the thirty-ninth in his natural orders; of the twentieth class of Ray; the same with the cruciformes of Tournefort.

SI'LPHIUM, (from the Arabic word *salaph*). Asafœtida, q. v., and the stalk of the plant which affords it. The root of the silphium is named *magudaris*; the leaves, or, according to some, the stalks, are called *maspeta, maspetum*.

SIMAROU'BA, (a patronymic name of America); *euonymus, simaruba*, and Guiana bark. *Quassia simaruba* Wildenow Sp. Pl. ii. 568, is brought to us in long pieces, of a yellow white colour, light, tough, and fibrous, resembling that which the ancients describe under the name of macer. It was brought into Europe in the year 1713; and is said to be a specific in dysenteries, particularly the seroso-bilious, bloody, and mucous kinds, removing these disorders when there is no fever, and when the stomach is unhurt, without the usual inconveniences of astringents; at the same time abating spasms and hysteric affections. It has been used in intermittents, but with little success: in fluxes it is said to restore the tone of the intestines, allay spasm, promote urine and perspiration, remove the lowness of spirits attending dysenteries, and dispose the patients to sleep. The tormina and tenesmus are said to be taken off, and the stools changed to their natural colour and consistence. In a moderate dose it occasions no disturbance or uneasiness, but in large ones produces sickness at the stomach and vomiting, by which its antidysenteric qualities are diminished. In this way, however, it is only successful in the third stage of the dysentery, where there is no fever, where the stomach is unhurt, and where the colic and tenesmus are only continued by the weakness. Old and obstinate dysenteries, and diarrhœas brought from warm climates, have been completely and speedily cured by it.

The simaruba, however, appears to be only a pure and simple bitter, possessing nearly the same qualities as the quassia. The powder is sometimes given; but the best preparation is a decoction. Coquatur simarubæ crasse contus. ʒi. in aq. font. ℥xxiv. ad. ℥xij. et cola.

See Lewis's Materia Medica; Memoirs de l'Academie des Sciences, 1729, par M. de Jussieu; Cullen's Materia Medica.

SI'MPLEX O'CULUS, is a bandage for the eye, being only a single-headed roller applied to the cheek, then passed over the eye, and the ossa parietalia, running down behind the head. From the nape of the neck, it rises to the place it began at, and is continued till the whole is taken up. It is called *simplex oculus*, even when longer, and made to pass over both eyes; but for this purpose it is rolled up into two heads, and the middle is applied to the nape of the neck.

SINA'NCHICA. Italian rushy horse-tail. See Juncaria.

SINAPELÆON, (from σιναπι, *mustard*, and ελαιον, *oil*). Oil of mustard-seed.

SI'NAPI, (ὅτι σινει τȣς ωπας, *because it hurts the eyes*). Mustard; *eruca, napy, sinapis alba* Lin. Sp. Pl. 933, is an annual plant, with long rough leaves, divided to the rib into irregular segments, of which the extreme is the largest, producing at the tops of the branches tetrapetalous yellow flowers, followed each by a short, smooth, quadrangular pod, divided longitudinally by a membrane, which projects at the ends, containing small roundish seeds, of a reddish brown colour. The *sinapis nigra* Lin. Sp. Pl. 933, the plant, preferred in the foreign pharmacopœias, is a native of England, but commonly cultivated for dietetic and medicinal uses; what is called the *Durham mustard* is prepared by separating the husk.

Mustard-seed yields, upon expression, an oil as insipid as that from olives, the pungency remaining entire in the cake. Spirit of wine takes up but very little of the pungency of this seed; but water extracts from the bruised seeds nearly the whole. If mustard be added to boiling milk, the whey will be separated from the curd, and possess much of its virtue. Distilled with water it yields a limpid essential oil, extremely pungent to the smell and taste, which sinks in water. The remaining decoction, on being inspissated, becomes a sweetish, brisk, mucilaginous extract.

Mustard is a very strong pungent stimulus, acting sometimes as a diuretic, without much heat. In paralytic, cachectic, and serous disorders, a large spoonful of the unbruised seeds has been taken two or three times a day; but in this way it acts only as an eccoprotic, without any stimulus. Bergius hath cured vernal intermittents with it, and has found the bark rendered more effectual by adding the powder of mustard. The bruised seed prepared as for the table is rubbed with advantage on parts affected with numbness, or with rheumatic disorders. As a condiment it assists digestion; mixed with horseradish, and infused in wine, it is an useful stimulant, often a diuretic, in constitutions where the circulation is languid. When beaten up with vinegar into a cataplasm, it is applied to the feet to remove delirium in fevers, and to bring down the gout from the head or the lungs to the feet; but in these circumstances it is a painful and troublesome application, with little adequate advantage. They are sometimes applied to the feet for raising the pulse in low fevers, and for relieving the head in those disorders. If mustard is mixed as for the table, and of this mixture a table-spoonful or two is added to a pint of tepid water, and drank on an empty stomach, it operates as an emetic; and, if repeated once or twice in a week, is said to be of service in nervous disorders. Mustard whey is frequently ordered as a drink in all low fevers. (Lewis's Materia Medica.) The *rapistrum sisymbrium*, and *erysimum latifolium*, are distinguished by the same appellation.

SINAPI'SMUS, (from *sinapi, mustard*). Sinapism

s made of powder of mustard seed and crumbs of bread, equal quantities, mixed up into the consistence of a cataplasm, with a sufficient quantity of vinegar. See EPISPASTICA.

SI'NCIPUT, (*quasi semi caput*). See BREGMA, and ARCUALIA OSSA.

SI'NE PA'RI. See AZYGOS. The emplastrum sine pari, or matchless plaster, is a pompous name for a composition now not noticed.

SINGU'LTUS, (*quasi singulatus, ad singula verba vocis interruptio*; an interruption to every word). *Lygmos;* the HICCOUGH, is a spasmodic affection of the stomach and muscles subservient to deglutition. Hippocrates thinks the stomach its only seat; Hoffmann, that the diaphragm is the part principally affected; but the stomach is the organ chiefly diseased. The disorder is primary or symptomatic. The immediate cause is that of spasm in general, either irritation or debility, inducing increased irritability. Inflammations of the stomach itself, or of the liver, probably of its convex portion, sometimes induce it. Inflammations of the diaphragm have with less reason been accused, and the poisons which have appeared to bring it on have been rather of the narcotic than the acrid kind. Flatulence of the stomach, cold drinks when the person is warm, acidity, repletion, suppressed diarrhœa, repelled gout, worms, excess of venery, and even the diaphoretic antimony, have been accused. These are all debilitating powers. Mechanical irritations are better established, and we find hiccough arising from a dislocated rib, a compressed cartilago ensiformis, a distorted or compressed rib. At the end of long fevers it is not an uncommon symptom, and it sometimes follows epileptic paroxysms.

Hiccough is a troublesome, but seldom a dangerous, complaint. Various cases are recorded where it has continued from eight days to four years. We once knew it continue for a month, with scarcely any intermission, even by night. The sleep was at last so profound, that the convulsion scarcely awoke the patient. A case is recorded in the Edinburgh Medical Commentaries, where it was habitual. Bartholine, in the Copenhagen Transactions, mentions it as periodical.

The causes are so opposite, that a particular attention ... them is requisite; and, when we can trace it to in- ...on, or any of the mechanical irritations, our ...ires no particular hint. When it arises, ... the case, from spasm induced by ... warm antispasmodics, as the ...phor, often joined with ...sential oil, particularly ...r, an acrid foment- ... stomach, are ... useful, ...to dis- ...ul of

the zinc. Sulphur has been advised, on ... ciple or with what success we know not.

Like other spasms, it is often stopped ... arresting the attention, whether by hope, f... On this principle a deep continued inspirati... moves slighter degrees of the complaint, w... many cases peculiarly troublesome and obstin...

See Stoll Prælectiones; Bruning Dissertat... Singultum Morbum Symptoma Signum; Sen... Singultu.

SINKO'O. See AGALLOCHUM.

SI'NON. SINNON. See AMOMUM.

SI'NUS, (from κενος, *void*). A CAVITY. ... tomy it is the cavity which receives the head of ... in surgery, a collection of matter with only ... orifice not callous, for its discharge. (See FIS... The vagina is sometimes called *sinus muliebris*, ... *pudoris*.

SI'NUS CEREBRI; the veins of the dura mat... CEREBRUM.) Ruysch found on dissection ... them, and a small bone has been taken fro... They offer no impediment to the operation of ... pan. Lassus Memoirs de l'Academie di Chirurg...

SI'NUS CO'XÆ, i. e. ACETABULUM COX... See ACETABULUM.

SI'NUS MAXILLA'RIS. See ANTRUM ... RIANUM.

SI'NUS VE'NÆ PO'RTARUM. The ... vena portæ hepatica superior vel minor.

SI'PHILIS, (from σιφλος, *filthy*). ... DISEASE. See LUES.

SIRACO'STUM. See ALSIRA...

SIR'ENES. See BOVINA AFF...

SIRI'ASIS, (from σειρος, *a cav*... *adustio*. A disease of children, ... flammation of the brain and its ... with a depression of the fontane... eyes, a violent fever, with pale... of appetite. Dr. Cullen ran... phrenitis. It is very indistinc... times seems to be hydroceph... ences to the best authors o... who will examine them m... tracting a meaning than ...

Horstius de Siriasi; ... rum; Forestus, xxviii. ...

SI'RII BO'A. See ...

SIRO'NES. See ...

SI'SARUM, (from ... *detum*, SKIRRETS, o... gardens, and chief... they are nourishin... come very tender, ... diuretic. *Tordyl*... ties. See Raii ...

SI'SARUM M...

SI'SARUM ... PANICUM.

S'SON, ...

...MI...

WATER-RADISH; *sysimbrium amphibium*,
Pl. 91 , grows in marshy ditches, flowers
July, and is supposed to agree with the
in its virtues.

GICE, (from σιτος, *aliment*, and λεγω, *to*
hat part of medicine which treats of ali-

(from the Hebrew *shalah*). THIRST, *poly-*
Cullen, consists in a sensation of dryness in the
d fauces, demanding a supply of fluid, gene-
. It arises partly from a diminished or an ex-
secretion of saliva, of the mucus of the mouth
ces, frequently from the state of the stomach,
e presence of acrimony, and considerable, or
pending, discharges from other glands. Thus
t only excited by an increased flow of urine,
arge of halitus from the lungs; but the nurse
e sensation of thirst, often in the moment
l's mouth is applied to the nipple. It some-
ccurs in circumstances, whose influence on this
n we cannot explain, as it has been said
from a polypus of the heart, and becomes oc-
y a disease peculiarly craving, without any
use, unless we suspect acrimony in the blood,
ome cases of this kind we have thought has
by the appearance of cutaneous eruptions.
nes said to be epidemic among children,
en known to continue for a long period,
e instance, where it arose from the ex-
ce of cold drinks in the hot fit of fevers.
ns, in the tortures, to the disgrace of
y employed to extort guilt, and at
hments of negroes, the thirst is said
ore distressing than the pain. If
it probably arises from the acidity
he stomach; and perhaps liquo-
xempted from the accusation of
onsequence of its containing a
ucilage than other vegetable

drinking water alone. This
absorbed, and, as we have
o the urinary organs. If
e mouth, when the agita-
livary glands. Rolling a
e mouth is often equally
n it relieves thirst, must
The vegetable acids are
fruits particularly so,
ver of the acid in re-
supply the fluid por-
sea-water, in cases
d thirst, when the
. Analeptics, by
culation, relieve
a mouthful of
eneral, during
ndulged, even
tution is less
rati

the manner just mentioned, corrected by the appropriate remedies, or evacuated by an emetic. Bile and putrid suburræ are best corrected by the vegetable acids, an acid by alkalis or absorbents, both by bitters joined by slight laxatives. In general, thirst forms one of those claims of nature which may be most safely indulged, if copious draughts, at once, are avoided.

Adipsia, the want of thirst, is often constitutional, and where fluids are not required, they need not be enforced. The only objection to this is, when the patient is insensible to the feeling, as often happens in fevers. Drinks then must be frequently offered, and their acceptance urged by every motive which can attract attention or ensure obedience.

SI'UM, (σειω, *to move*, from its agitation in the water); LAVER. The root is like that of colewort, fibrous and ligneous; the leaves pinnated, growing by pairs to one rib, and ending with an odd one; the petals of the flowers bifid, the seeds roundish, gibbous, and striated.

SI'UM AROMATICUM. See AMMOMUM.

SI'UM ALTERUM, MAJUS, and ERUCÆ FOLIO. See CICUTA AQUATICA.

SI'UM ANGUSTIFO'LIUM; *sium latifolium*, β. Lin. Sp. Pl. 361; *berula Gallica, laver verum Matthioli, apium palustre foliis oblongis*. COMMON UPRIGHT WATER-PARSNEP, grows in moist wet places, and flowers in June. Its leaves resemble in their effects those of the great water-parsnep.

SI'UM LATIFO'LIUM, *pastinaca aquatica*. GREAT WATER PARSNEP, Lin. Sp. Pl. 361, α. grows in rivers and marshy places, and flowers in July. The leaves are said to be lithontriptic; but the whole plant is neglected.

SI'UM NODIFLO'RUM, Lin. Sp. Pl. 361. CREEPING WATER-PARSNEP, an indigenous, perennial, wing-leaved plant, growing in hedges and ditches; its leaf resembles the spring leaf of the hemlock drop-wort, which is poisonous: it flowers in July and August. It was formerly considered as a lithontriptic, diuretic, and emmenagogue. It seems to correct acrid humours, when manifested by cutaneous eruptions, and tumours in the lymphatic system. Dr. Withering gives an account of a young lady, six years old, who was cured of an obstinate cutaneous disease, by taking three large spoonfuls of the juice twice a-day; and he has repeatedly given to
adults three or four ounces every morning, in
complaints, with the greatest advantage. It is
ous, and children take it readily if mixed
the dose which he gave, it neither
nor stomach.

SMA'LTUM. See C

SME'CTIS, (σμ
cloth). See C

SMI'LAX
to cut.
ROUG
is

Smi'lax I'ndica. See China occidentalis.

Smi'lax Virginia'na. See Sarsaparilla.

Smi'lax unifo'lia humi'llima. See Monaphyllon.

SMY'RNION, (σμυρνα, *myrrh*, from its smelling like myrrh). See Imperatoria.

SMY'RNIUM, (from the same). See Hipposelinum.

SO'DA, (from the Arabic term *sodar*). A burning uneasiness in the throat, with rancid or hot eructations, synonymous with dyspepsia and pyrosis. (See Cardialgia.) A name for potash, and for the mineral fixt alkaline salt. See Anatron, Clavellati cineres, Chemia, and Sal.

So'da phosphorata; *alkali minerale phosphoratum; phosphas sodæ*, is a combination of the phosphoric acid with the mineral fixed alkali. We are indebted to Dr. Pearson for the introduction of this salt to the materia medica, as it is active and almost tasteless. In broth or gruel it may supply the place of common salt without suspicion. The other combinations of soda with different acids offer no particular subject of remark. See Sal.

SOL, (from *halal, to shine*). See Aurum.

Sol-lunar influence means the influence of these luminaries, either when in opposition or in conjunction, on the human body. In this disquisition we do not include the insolation, *coup de soliel*, nor the effects supposed by the Italian authors to arise from the light of a full moon, but the influence of either on the human body from other causes.

From very early antiquity the sun and stars were supposed to influence the human frame, its diseases, and even its fortunes. The latter idea is now left to the tricks of pretended conjurers; but the former has continued to prevail, and at different periods has started into notice. Dr. Mead has collected, from practitioners of respectability and character, various facts which show that the sun and moon have some influence on diseases. Epileptic attacks, hæmorrhages, fevers, and a variety of complaints, have been said to occur in greater frequency, and more violent degrees, at times when the influence of the sun and moon was most considerable. Were such a connection well established, it might be of essential service in directing our remedies; but it seems to be either accidental, or other observations have not been directed with these views. The tract of Dr. Mead was written when the mind was dazzled by the splendour of sir Isaac Newton's discoveries on attraction, and it was supposed that aërial bodies (for the atmosphere would obey the impulse of attraction as well as the water) must produce considerable changes in the constitution. The annals of medicine were ransacked by those to whom all the stores of antiquity were open, and it is not surprising that many facts could be adduced, especially from authors of a credulous and dark era. We know, however, that the foundation of the theory is truly aërial. The barometer shows little alteration in the real height of the atmosphere at those periods when the attraction is greatest, unless other causes concur; and we know that much greater changes in the weight of the atmosphere are borne without exciting any uneasiness, or producing any variation in the functions. The idea of an attraction of the nervous fluid is still a more baseless fabric. Yet the changes of epileptic paroxysms during the moon's increase are apparently confirmed by vulgar observation, and we think there are some well-founded facts of increased discharges at these times; but should these be established, the reputed cause must be fallacious, for it acts before it has reached its acmè, and at a period when the aërial tide must be inconsiderable.

More lately, however, Dr. Balfour has endeavoured to establish the sol-lunar influence in the attacks and crises of fevers by observations made in India. To these we cannot reply, but must leave the subject to future practitioners, who will not, we trust, suffer such a curious subject of inquiry to escape their attention. We shall add the summary of his remarks from his latest works, viz. his paper in the eighth volume of the Asiatic Researches.

"In prosecuting this analysis, we have obtained the knowledge of three very important principles in the pathology of fevers.

"1st. That the paroxysms of fevers are produced by the action of *sol-lunar influence*.

"2dly. That there is, however, a certain state of the human constitution, denominated the *paroxysmal disposition*, required to concur with the exacerbations of sol-lunar power in exciting and reiterating paroxysms, in such a manner as to form fevers.

"3dly. That in the course of the disease there takes place in the constitution a certain state, denominated the *critical disposition*, which tending gradually to *maturity*, at length concurs with certain remissions of sol-lunar power in producing a crisis; by which salutary change the tendency to paroxysm is diminished or removed, so as to bring fevers to an end after certain intervals of time.

"In my explanation of this theory, I have hitherto confined myself as much as possible to examples of the typhus, and of the endemic, remitting, and intermitting bilious fevers of this country; particularly those without local affection: and such therefore as are strictly denominated fevers. I now mean to extend it to every disease that is distinguished by febrile paroxysms, returning in coincidence with the periods of increased sol-lunar power, whether with or without local affection; and as there is no disease of the numerous list detailed at the beginning of this paper, excepting the plague, catarrhal fevers, and one or two more, in which I have not myself distinctly observed the coincidence of concomitant fever with the exacerbations of sol-lunar influence; the whole of that catalogue, and many others, though not generally distinguished by the appellation of fevers, are to be considered as nothing more than so many different modifications of fever; in which the peculiar constitution of each is variously affected by the action of sol-lunar power, and in such a manner as to produce the great variety of febrile forms that daily appear.

"The exacerbation and remission of febrile paroxysm in coincidence with the rising and falling of sol-lunar power constitutes the general and distinguishing character of fever or febrile disease; and although the lowest degree of this power acting on paroxysmal dispositions in a high state of prosperity, may happen to produce febrile paroxysms at an unusual period, such instances, though apparently exceptions, are no argu-

ment against the truth or principles of the general law, but are consistent with it in every respect.

"Combining therefore the operation of the principles we have obtained from this analysis, we are enabled to construct a *theorem*, which serves to explain in a new, but satisfactory manner, the whole *class* of febrile diseases.

THEOREM.

"The fluctuating force of sol-lunar influence coinciding and co-operating in all its various stages and degrees, with the various modifications of the paroxysmal disposition, excites febrile paroxysms to attack on all the days of the neaps and springs, and supports and reiterates them, according to various types, until the commencement of different neaps; at which junctures the maturity of the critical disposition happening to concur with the periodical decline of sol-lunar influence, these paroxysms then subside and come to a termination or crisis: and thus form different successions of paroxysms constituting fevers of various length or duration.

"It has been observed, respecting the various forms of durations, that some are apt to occur more frequently than others. To search for a solution of this question amidst the chaos of the incorrect and mutilated history that has been accumulated on the subject of fevers, would be unsatisfactory and useless. It will be far more profitable to observe their course with attention in future, when the laws that direct it are explained and understood, and I have no doubt that any physician who will carefully attend to the diurnal and nocturnal returns of the tides, and will constantly hold before him the prevailing tendency of fevers to appear at the commencement, and during the period of the springs; and on the other hand their prevailing tendency to subside and terminate at the commencement and during the period of the neaps; together with the observations that have been made respecting the propensity of the paroxysmal, and the maturity of the critical disposition, will soon obtain more information respecting the phenomena of fevers; and be able to form more just and certain judgments and prognostics respecting every event, than if he were to study the history of medicine, as it is now written, for a thousand years. In short there is no revolution or change in the course of fevers that may not be explained by these general principles, in a manner that is consistent with the laws of the human constitution, and those of the great system of revolving bodies, which unite together in producing them."

The author adds in a note, that Dr. P. Russell observed the febrile paroxysms of the plague returned obviously every twelve hours in coincidence with the periods of the tides; and the author of the Natural History of Aleppo remarked, "that the generality of fevers there, and indeed almost all acute diseases, are subject to exacerbations once or twice in twenty-four hours." Millar's Observations on the prevailing Diseases of Great Britain, p. 203.

Mead on the Influence of the Sun and Moon; Balfour on Sol-lunar Influence, Asiatic Researches, vol. viii. art. 1.

SOLA'MEN INTESTINO'RUM. See ANISUM.

SOLANOI'DES, (from *solanum, night-shade,* and εἶδος, *likeness*), BASTARD NIGHT-SHADE, hath a rose-shaped flower, followed by a berry.

SOLA'NUM, (from *solor*, because it comforts by its stupefying qualities), NIGHT-SHADE, is a plant with a monopetalous flower, divided into five segments, having its cup divided in the same manner, with the same number of stamina in the middle, and followed by a juicy berry.

SOLA'NUM BARBADE'NSE. See PHYTOLACCA.

SOLA'NUM LETHA'LE; *belladonna; solanum maniacum, somniferum, furiosum*; DEADLY NIGHT-SHADE; *Theophrasti strychnos, atropa belladona* Lin. Sp. Pl. 260, is one of the indigenous poisonous plants of Great Britain; poisonous in all its parts. The root is long, large, and creeping; the stalks purplish, upright, firm, numerous, branched and herbaceous; the leaves egg-shaped, entire, very large, smooth at the edges, pointed a little at the extremities, and of a beautiful green colour, hairy and soft. The flowers stand on single foot-stalks; are formed of one petal; bell-shaped, and very lightly divided into five segments at the edge. Their colour is a dark dead purple. The berries which succeed the flowers are globular, first of a red, afterwards of a black colour. This plant flowers in July, and its fruit is ripe about Michaelmas. It is found in woods and hedges, amongst lime-stone and rubbish; and, where the ground is rich, from manure. The smell is faint, somewhat resembling the poppy, but lost when dry. It has no peculiar taste. When taken in too great a quantity, giddiness, like that of intoxication, comes on; thirst, pain in, and tightness across, the breast; difficulty of breathing, delirium, but with short intervals of relief, or, instead of delirium, a fatuity; strangury, painful deglutition, and retching, followed by stridor dentium, and convulsions. The eyelids are drawn down, the face becomes red and tumid, the mouth and jaws spasmodically contracted, the sensibility and irritability are so much diminished that the stomach often bears large and repeated doses of tartarised antimony without any effect; the pulse is hard, small, and quick, and the tendons start; risus sardonicus, and coma, generally precede death. On dissection, inflammation has been found in the liver, intestines, and mesentery. The ancients called the disease brought on by eating this plant *strychnomania*. When adults have recovered from the effects of this poison, they have related that they felt themselves as if drunk, but saw and understood all that was doing, even when they gave the wildest answers. Some are said to have continued in a state of madness for several days; others lose their sight for a time, the iris being so much relaxed as to become paralytic, and dilated to a very considerable size. In children, to whom it is generally fatal, the belly swells, and convulsions sometimes follow. To adults it often proves fatal in less than twenty-four hours.

Vinegar liberally drank has been found very efficacious in obviating the effects of this poison; but its evacuation should always be first promoted: for the particular management, see AMANITA.

Notwithstanding these effects, a prudent use of this plant has been recommended. The leaves applied in the form of a cataplasm are supposed to relieve cancers: an infusion of the leaves is commended as an internal medicine in cancerous cases; but on trial does not appear to deserve the encomiums. The doses are very

small, and their effects various and uncertain. Sometimes it purges, at others runs off by the kidneys or through the skin, and often no evacuation takes place. Those who took the infusion suffered by giddiness, throbbing pains in the eyes, a discharge of tears, and a dilatation of the pupil. Mr. Gataker observes, that it is a medicine chiefly calculated for particular cases where the common remedies have failed, and where this seems, upon trial, to be free from the inconveniencies which so often attend its use.

Dr. Cullen has seen a cancer in the lip cured, and a schirrosity in the breast removed, by it. Great service has also been derived from its use in a sore a little below the eye, which has resembled cancer. The first dose should be one grain or less, which may be gradually increased; six grains is considered a very large one.

See Gataker's Essays; Bromfield on Nightshade; Wilmer's Observations on Poisonous Vegetables; Withering's Botanical Arrangement; Cullen's Materia Medica.

SOLANUM HORTENSE; *solatrum; aguara quiya; solanum vulgare officinarum, nigrum* Lin. Sp. Pl. 266, α. COMMON OF GARDEN NIGHT-SHADE. Its leaves are oval, pointed, and irregularly indented; the flowers white, and in clusters; the berries black. It is annual, grows in uncultivated grounds, and flowers in August.

This, as well as the former species, may be used in cancerous disorders, foul ulcers accompanied with pain, obstinate pains in particular parts, scorbutic and scrofulous disorders. This species is said to be particularly useful in carrying off bile, when taken in the form of an infusion. Externally applied in a poultice it is said to have abated the violence of inflammation in the eyes, headachs, pains in the ears, acrid defluxions, syphilitic inflammations, pains from schirrous tumours; and to have relieved scrofulous and cancerous tumours.

The most common effects observed on taking the infusion of the leaves are, a general warmth, followed by a plentiful sweat, and a lax belly the next day. If sweat did not follow, a considerable discharge of urine, or loose stools, were the consequence; but without some increased secretion no benefit ensues. In sanguine habits bleeding and purging may precede its use; and, if the stomach seems loaded, an emetic may be premised. Feverishness will not preclude its use.

The leaves may be used either fresh or dry. Half a grain of the dry leaves may be infused in an ounce of boiling water, to be taken at bed-time, gradually increasing the dose, which may be repeated every night. That quantity which produces giddiness, sickness, a gentle looseness, or some other sensible effect, should be continued. Sometimes one dose is sufficient for two or three days: it hath been gradually increased to twelve grains. See Storck on the Solanum.

SOLA'NUM LIGNO'SUM; *dulcamara, glycypicros; amara dulcis, solanum scandens,* BITTER-SWEET, PURPLE FLOWERING, WOODY NIGHT-SHADE, *solanum dulcamara* Lin. Sp. Pl. 264. Many of its leaves are deeply cut, or furnished with two small appendages at the bottom; the flowers in clusters, of a blue colour; the berries red. It grows on the sides of ditches, and in moist hedges, climbing upon the bushes with winding, woody, but brittle, stalks; is perennial, and flowers in June and July.

Its sensible operation as a medicine is by sweat, urine, or stool. A tincture may be made by digesting four ounces of the twigs into two pints of white wine, and of this the dose will be from ʒij. to ʒvi.

This species is not so deleterious as the two former, and it acts more uniformly. Decoctions of it have been serviceable in the rheumatism, in inveterate cases of scrofula; in cancer, lepra, and other cutaneous affections; and in local anomalous diseases arising from the lues venerea.

Decoctum dulcamaræ is prepared by boiling two drams of the twigs of dulcamara in two quarts of distilled water to one. Dose half a pint in twenty-four hours, mixed with an equal quantity of milk. Dr. Hulse thinks it one of the most powerful discutients: he directs four handfuls of the leaves, and four ounces of linseed, to be boiled together in wine, or in hog's fat, to a cataplasm, and to be applied warm.

SOLA'NUM ARBORE'SCENS I'NDICUM. See COLUBRINUM.

SOLA'NUM DULCAMA'RA and SCA'NDENS. See SOLANUM LIGNOSUM.

SOLA'NUM FURIO'SUM, MANIA'CUM, and SOMNI'FERUM. See SOLANUM LETHALE, and STRAMMONIUM.

SOLA'NUM LYCOPE'RSICUM and POMI'FERUM. Ses AMORIS POMA and CACHOS.

SOLA'NUM MA'GNUM and RACEMO'SUM. See PHYTOLACCA AMERICANA.

SOLA'NUM NI'GRUM OFFICINA'LE, and VULGARE. See SOLANUM HORTENSE.

SOLA'NUM POMIFE'RUM. See MELONGENA.

SOLA'NUM QUADRIFO'LIUM, BACCI'FERUM. See HERBA PARIS.

SOLA'NUM SOLA'TRUM. See SOLANUM HORTENSE.

SOLA'NUM TUBERO'SUM, &c. See BATTATAS.

SOLA'NUM VESICA'RIUM. See ALKEKENGI.

SOLA'NUM U'RENS. See PIPER INDICUM.

SOLDANE'LLA MARI'TIMA MI'NOR, (*à solidando*, from its use in healing wounds). See BRASSICA MARITIMA.

SO'LEN, strictly means a cradle for a broken limb, but is applied to any similar cavity.

SO'LIDA, SOLIDS. Physiologists, following Haller, formerly supposed that the solid elementary parts of our fibres are a calcareous earth kept together by a gluten; that in a natural state, when bones lose their gluten, this earth falls into powder; and that in this earth there is a portion of iron. Modern chemistry has, however, destroyed this system, and particularly the office of the gluten. Different solid parts are differently composed; and, as albumen or gluten forms a portion of each, it only concurs with the others in giving to the mixed that firmness which arises entirely from the force of their combined powers of attraction.

SOLIDA'GO VIRGA AUREA, (from *solido*, from its corroborant and astringent virtues). See VIRGA AUREA.

SOLE'US, (from *solea, a sole*). *Gastrocnemius internus;* a muscle, called from its resemblance to a solefish. It is a biceps, rising on the outside from the

upper part of the tibia, internally from the outside of the fibula: leaving an aperture for the passage of the vessels, it joins the gastrocnemius to form the tendo Achillis.

SOLITA'RIÆ GLA'NDULÆ. See INTESTINA.

SOLITA'RII. Diseases affecting only one part of the body.

SO'LIS A'QUÆ. See BATHONIÆ AQUÆ.

SO'LIUM, (from *solus*; because it is a congeries of animals, and consequently appears *alone*). See TÆNIA.

SOLSE'QUIA, (*quasi solem sequi*; because its leaves turn to the sun). See CALENDULA.

SOLSE'QUIUS, (from the same). See TITHYMALUS HELIOSCOPIUS.

SOLU'TIO, (from *solvo*, to *open*, or *dissolve*). SOLUTION is the dividing of a solid body into particles so small as to disappear in the menstruum or solvent.

A solution, strictly speaking, is an union of the minuter parts of the solvent and solvend, where each retains its respective properties, or where, though combined, they may be recognised as distinct and unaltered. Such is the solution of sugar or salt in water, or of sugar dissolved in salt water. When an alkali is combined with an acid, the salt disappears in the same way, but the properties of the principles are changed.

Solution was formerly supposed to be only a very minute diffusion; but it appears to depend on a mutual action between the particles of the menstruum and the body dissolved; for it is not necessary that this should be a fluid. An essential oil, for instance, is dissolved in water, and solution in this case takes place in their state of vapour. In what is called, chemically, *deliquatio*, the water, dissolved in the air, is attracted by the salt.

As solution is then a combination, not essentially different from other chemical operations, so it is influenced by the laws of affinity. Almost every solution is accompanied by the absorption or separation of caloric; and almost every solution is of a greater specific gravity than the mean of its ingredients. Every added substance seems to lessen the repulsion of the fluid particles, and hence the solution is generally less in bulk than the separate ingredients. A phial full of kali, and as much water, will not fill the double space. Fire in melting bodies seems to become a menstruum, and, when combined in a considerable temperature, it reduces the body to an aërial state, frequently giving it the form of a permanent gas. All solutions are assisted by heat, which seems to lessen the cohesion, so that the menstruum meets the solvend in a greater number of points. Powdering the solvend has a similar effect, for the same reason.

Medicines are often given in a fluid form, as their taste becomes less nauseous by solution, and they occasion less inconvenience to the stomach. The fluids of this viscus have, however, been supposed to possess peculiar powers as a menstruum, and many medicines have been given near the period of meals, that they may meet these fluids in a more active state. This idea, however, seems to have little foundation; for the advantages of giving medicines in a solid form seem chiefly to depend on their not having been changed by previous preparation. The extractive of bark, for instance, becomes, in part, resinous by boiling.

See Chaptal's Chemistry; the Bishop of Landaff's Chemical Essays.

See Table of Solubility of Salts, under SAL.

SOLU'TIO PER I'GNEM. See FUSIO.

SOLUTIO'NES, (from the same). Fresh wounds whilst yet bleeding. Sagar.

SOLUTI'VA, (from the same). LAXATIVES.

SOMNAMBULI'SMUS, (from *somnus*, *sleep*, and *ambulo*, *to walk*); *hypnobates*, *hypnobatasis*, *noctambulatio*, and *somnambulatio*, a species of *oneirodynia*. See SOMNUS.

SO'MNIUM, (from *somnus*, *sleep*). A DREAM. See INSOMNIUM.

SOMNUS. SLEEP, "*tired nature's sweet restorer*," is essential to the existence of mankind; for those deprived of its necessary proportion most probably experience some abridgement of the period of their existence. In this regularly returning "semblance of death" the external senses and the voluntary motions are lulled into insensibility and a temporary quiescence, while the involuntary motions are carried on with steadiness, though with some relaxation of their activity. In other words, the functions of the brain are suspended, while those of the ganglionic system (see NERVUS), sharing a portion of the insensibility of the brain, from its slight connection, enjoys with little change its own inherent power. We thus find that, in proportion to the bulk of the brain, or perhaps its activity, sleep is more necessary. Birds, which have a small brain, sleep very little in their natural state.

We find the recurrence of sleep necessary to recruit the faculties both of body and mind, to which authors have added, that during this suspension of sense, nutrition is probably carried on more perfectly and actively. This opinion rests chiefly, however, on the larger proportion of sleep which infants require, and those, who adopt it, forget that often in advanced age sleep becomes equally necessary, depending, in fact, merely on the state of debility. How sleep is induced, by what power the activity of the mind and body is restored during this state, and the causes which terminate the insensibility, are little understood. It has been supposed that the mental actions excite the arterial system, and that, in consequence, a greater proportion of blood is carried to the head, or to the exhalents, occasioning a greater discharge of their contents. This pressure is supposed to produce sleep, during which the veins or the absorbents carry off the superfluous quantity. In the same way sleeping after a full meal is explained, since the distended stomach presses on the descending aorta, which, of course, assists the circulation through the ascending branch. Each hypothesis is truly ideal; for, were it true, the previous appearances would be those of activity, since such are the effects of determination to the head, before the fulness produces compression. The stomach also, after a full meal, presses forward, and its greatest curvature, which in the empty state is below, when full projects against the parietes of the abdomen. This objection was apparently felt; for more lately the narcotic effect of the air, evolved in digestion, has been brought in aid of the system of compression, an effect which, at least in the stomach, is never experienced.

Sleep naturally comes on once in twenty-four hours,

usually at the accustomed period, generally in the natural state soon after the commencement of darkness. When the usual stimuli are withdrawn, if the temperature is moderate, and the posture easy, the usual train of ideas is interrupted; they are less regularly connected or associated, and a slight delirium ensues, previous to the sound sleep, which consists in a total cessation of the exercise of all sensation and thought; of all motion connected with volition, though volition seems sometimes imperfectly exercised, in changing, for instance, an uneasy posture. When this state has continued its due time, which differs in different constitutions, ideas occur with irregular associations, and occasional interruption, as when sleep came on. These become more regular and connected, till the labours of the ensuing day, or the anxieties of the past, occur to the recollection, and banish farther repose. The regular trains of sensation and motion gradually take place, at first less actively, but soon with the usual, or rather with renewed, vigour.

Such is the history of the regular sound sleep of a ɔerson in perfect health; but the variations are infinite. Che period, the duration of sleep, its degree of soundess, its occasional interruptions, and the fanciful images ggested to the mind, occasion a considerable variety, hich it would be useless, and indeed impracticable, to tail.

The remote causes are whatever exhausts the vital rgy, as constant action; intense thought, light, or se; violent pain, or considerable mental distress. the activity of the brain has been completely exd by the long continuance of any of these causes, er silence, darkness, an easy posture, or a modetemperature, are necessary to court sleep. It comes the most unfavourable circumstances, and contill the brain has recovered some degree of ac- Every stimulus in excess, by exhausting the ility, will induce sleep; but opium, wine, and appear, as we have said, to be truly sedative , and to produce irregular instead of excessive ent.

e perfectly waking state the elastic fluid, on state all sensation and action seem to depend, ently active, and its communication through rt of the brain free. Delirium we have shown nected with an interrupted communication, or al excitement; and palsy, in many instances, Dr. Cullen styles a collapse, or that state in is incapable of conveying impressions or volie collapse is, according to this respectable complete in sleep. We certainly perencement by the delirium, which shows communication through the brain, and reases in the extreme case of sound sleep, t complete. When, however, no naras been administered, the accumulated gins to exert its powers, and rouse the e its functions. The powers of thought e perfect, the communication becomes at last volition again renews its office. some difficulty in conceiving how the citability can take place from mere quiis difficulty would, it was supposed, be posing the brain a gland, which supplies ; but this opinion we found untenable, and the difficulty must remain, though various collateral facts support the doctrine just mentioned. One of the most striking of these is the hybernation of animals, who remain torpid during winter. This is a state of a more perfect collapse than sleep itself, and requires some exciting power. (See TORPOR.) In cases of sleep no power is necessary but the circulation of the blood acting on an organ, which by rest has recovered its torpor, or has accumulated excitability.

We have said that sleep is more or less perfect, and that volition is, though obscurely, exercised. In the less perfect sleep the brain remains in the state described, when sound sleep is coming on, and various fancies, from the interrupted communication between the different parts of the brain, are presented to the mind (see INSOMNIUM); but there is also a state where volition remains more perfect, where persons *talk*, and even *walk*, during sleep. In such cases, however, caprice or fancy regulates the conduct; and the motions, though directed often to some end, are seldom under the guidance of reason and judgment; mental operations, which we have often shown, require the freest, most uninterrupted, communication through the whole brain. The utmost exertion of reason ever displayed in sonambulism is the extreme caution with which such persons walk in places by no means secure. In every such instance there seems to be an imperfect consciousness of the situation which they do not recognise when awakened.

Compression of the brain produces torpor; but scarcely in any instance sleep. Narcotic poisons lessen the energy of the brain, and produce a partial collapse, for we find that they always induce delirium; and so great is the power of opium, in particular, over the association of ideas, that those of duration are influenced by its operation. In general, opium acts as a narcotic only, and produces sleep indirectly by destroying the irritations which prevented it; and it is more successful when these irritations are peculiarly nervous, than when they have affected the sanguiferous system. The latter, we have said, are often injured by opium, as their best relief is by increasing the discharge from the neighbouring glands or exhalents, which is checked by its narcotic power.

The impediments to sleep are cold, light, noise, uneasiness of mind or body. Cold, in an extreme degree, produces sleep, or rather the torpor, which is the precursor of death. In a moderate degree it impede sleep by the uneasy sensation which it produces. Th other causes act as stimuli, preventing the collapse, ti by their degree or their continuance, the excitability exhausted. Sleep is induced by avoiding these cau by employing the attention on subjects which ex no emotion, by a monotonous sound of no great l ness, and by narcotics, sometimes narcotic gasses. hydrocarbonate seems to have some effect in thi See ANODYNA.

Sleep is often a capricious visitant, flies the down, while it seals the eyes of the sea-boy rudest hour. It is often least frequent when sired, and the apprehension of watchfulness means of precluding the access of this s woes. A close attention to literary labo an irritability which equally prevents sl student fears to leave his midnight lamp

exchange only for a state of uneasy restlessness. Yet, as we have said, these hours are borrowed only. Nature cannot be deprived of this interchange of rest, and we never yet knew a case where its period was greatly abridged but that the life was shortened, and the latter part of it spent in languor and distress. Tea, coffee, and those narcotics which give a cheerful hilarity, are often used to prevent the recurrence of sleep; but often with the worst consequences.

A contrary state is no less dangerous, viz. too great indulgence of sleep. Somnolency is generally the consequence of distended vessels; and, if indulged, ends in apoplexy, in dropsy, or fatuity. To indulge sleep after dinner is by no means dangerous or unsalutary; but it should be allowed only to the infirm; those whose rest at night is disturbed, or who cannot always command sufficient time for the necessary recruit. In other cases, if it does not render the sleep at night less sound, the usual consequences of somnolency follow.

The best time for sleep is early in the night, when the evening exacerbation has come on, to prevent its increase by the abstraction of all stimuli. Its greatest violence is from ten at night to one in the morning. This period should, therefore, be spent in sleep, and the two hours before twelve are by far more salutary than any other part of the night. The duration of sleep should depend much on the labours of the day. From six to eight hours are in general sufficient; but some constitutions require more than eight: few can continue healthy with less than six, though those accustomed to interruptions will be considerably recruited by four hours of rest. If, however, this becomes habitual, the constitution will eventually suffer. If the same hour of retiring to rest be observed, habit will concur with fatigue in inducing sleep.

See Fordyce's Elements, part i.; Cullen's Institutions; Cheyne on Health and Regimen.

SO'NCHUS LÆ'VIS, (παρα το σωον χεειν, *from its wholesome juice*). *Montanus purpureus* and *repens*. See CHONDRILLA, and HIERACIUM MAJUS.

SO'NUS, (from the Arabic term *sanah, to cry out*). SOUND. Sound consists in vibrations of an elastic body, and are either acute or grave as the sounding body is longer or shorter; for a long string, which gives an acute sound, experiences different vibrations in its different portions. This is, however, scarcely a part of our present subject, which relates rather to the medium and communication of sound, as applicable to
he organs appropriated to the sense of hearing. We
hall therefore speak of each portion of the subject,
d perhaps be able to correct some erroneous opinions
o generally received.

Sound is supposed to be communicated by undulations
he air, resembling those of water when a stone is
wn into it; and if any body is interposed to check
undulations, a new center is said to be form-
rom which fresh undulations proceed. This is,
er, an erroneous view of the subject, and wholly
stent with the phenomena of sound, whose
y only, not its velocity, is diminished by in-
bodies. Sir Isaac Newton, who has been
authority on this subject, has expressly
, lib. ii. prop. 43, that "every tremulous
stic medium will propagate the motion
where in a strait line; but in an inelastic medium will excite a circular motion." What, however, wholly contradicts the common theory of undulations of every kind is, that sounds are conveyed through bodies wholly inelastic, through timber, water, wool, and cotton threads; so that if vibrations only convey sound, it must be the vibrations of a body much rarer than air, probably a very rare ether; and these vibrations cannot be circular. Indeed the vibrations by which sound is conveyed through air seem not to be those of the air itself, but of a rarer medium, for the loudest sounds will not most slightly disturb the flame of a candle.

Dr. Franklin, who might have taken the hint from Kircher, first led us to suspect that air, though the common medium of sound, was by no means the best. When the sound, emitted by striking two stones against each other, was conveyed through water, they were much stronger than when conveyed through air. Dr. Franklin heard the sound of two stones, struck against each other, at the distance of a mile, as sharp as if near his ear; and the watermen on the Thames assert, that when the air is still, a small sound may be heard across
the river. Bells of no large size may be heard at th
distance of four or five miles, when water only is inte
posed; and we are informed that the explosion of
twelve-pounder may be heard nine leagues, in cal
weather, at sea. On experiment, a voice scarcely au
ible at the distance of seventy-six feet on land, w
distinctly heard at the distance of one hundred a
forty feet over water. Damp walls and houses h
echos, which they lose when dried; and when a
of water was carried under the theatre of Argenti
Rome, a voice, on the stage, was heard distinctly
extremity of the pit, which was scarcely audible be

Another very powerful medium of the commu
tion of sound is bone. Sounds are conveyed wit
ticular distinctness, and increased intensity, throu
bones of the head, particularly by the harder on
the ear, as the os petrosum of the temporal
Some facts of this kind are mentioned by Halle
siologiæ Elementa, v. 295), and were noticed
Monro so early as 1769; but the first account,
then abridged, was given by M. Perolle, in th
volume of the Memoirs of the Society of M
some notice was taken of it in Rozier's Journal f
From his experiments, the teeth seemed t
powerful medium, next the bones of the skull,
larly the temporal bones, and those on which t
dura of the 7th pair of nerves was dispersed.
particular experiments are recorded in the la
of the Turin Transactions, the fifth, of
give a short account, as we do not recoll
in our language.

M. Perolle begins with the fundame
of hearing by means of the bones of the
mentioned. The sound, in the next e
the vibration of a watch, and the com
made with the meatus auditorius, by n
cylinder of wood, or of the substanc
method not perfectly correct, but su
comparative experiments. The order
and metals communicated sound was
beginning with the strongest, viz. fir,
oak, cherry-tree, chestnut, iron, copp
tin, and lead. Strings, extended with

force, propagated sounds in a still inferior degree in the following order; gut, hair, silk, hemp, flax, wool, and cotton. Zinc, antimony, glass, sal gem, gypsum, dried clay, and marble, were still worse conductors; but their order was not particularly ascertained, except that marble was the weakest, though still better than air. Fluids transmit sounds with different forces. Oil olive, and oil of turpentine, were nearly twice as good conductors as air; water and spirit of wine better conductors than oils. The proportions are 14 and 16; 20 and 21 to 8.

In all these experiments the nature of the sound (its "*timbre*") was altered; but M. Perolle adds that he had no means of ascertaining it. He could not therefore mean the tone, the acuteness, or gravity, for either could have been easily ascertained. The sound of a tuning fork was fortified by the bodies in which it was placed, and, as might be expected, nearly in the orders recited; but the bulk of the body, when applied to musical instruments, seems to have had a considerable influence in increasing the sound.

From these results we find scarcely any clue to lead us to the principle on which the different substances act in conveying sound. One distinction will immediately occur, that a sonorous body must be very different from a conductor of sound, as the action of the former consists in rapid pulses, by which it strikes the surrounding medium, while the other is to the senses perfectly quiescent. Wood or metal will conduct sounds when surrounded with moist clay, and the water through which the vibrations of a watch are conveyed will not be most slightly agitated. In the experiments with woods and strings, their superiority as conductors seems to be connected with a fibrous structure, where the fibres are continued longest without interruption, or with an uniform texture. Specific gravity has apparently no influence, for water is perhaps the most perfect conductor of sounds hitherto known.

Future experiments will not probably confirm all M. Perolle's results, and indeed he speaks of them as not always uniform. We objected to their accuracy for this reason, that there was in reality three different media of a sound, the conducting body, the air of the meatus auditorius, and the bones of the head: so that the experiments could be styled comparative only. We were led to this objection, from having, many years before, made some similar trials in a manner apparently more unexceptionable. Having closed the ears, and swathed the head with numerous folds of flannel, we placed a watch on a cushion touching the case or the glass, for we found the result the same, with a halfpenny, a new shilling, and a guinea, successively held between the teeth. The sound was certainly weakest when the copper was employed; and though there were some doubts respecting the power of the silver and the gold, the latter seemed the best conductor.

The course of our reasoning has led us to omit some facts respecting the progress of sound in the air. The experimentum crucis, which supported the claim of the atmosphere to the title of the chief conductor of sound, was that of Mr. Hawkesbee, in the Philosophical Transactions. He found that a bell sounded with diminished sharpness in vacuo, and with increased loudness in condensed air. In fact, momentum is in proportion to velocity and density; when the density is increased, the velocity given, the momentum will be proportionally augmented. To which we may add, that in vacuo the diminished momentum has to contend with increased pressure from without, while in condensed air the contrary circumstances take place. At best it is only comparing air in different degrees of density, and not comparing it as a conductor with any other substance.

Another circumstance, which has been misrepresented, relates to the power of winds in diminishing the velocity of sounds. Strong winds move about 90 feet in a second; and if they really impede the propagation of sound, they ought to diminish it about $\frac{1}{12}$. This determination from calculation I was happy to find verified by the experiments of the accurate Derham (Philosophical Transactions, No. 313). He found that storms really retard sounds, so that a sound which travels 571 feet in five seconds may be accelerated to 600 feet in the same time, or retarded to 560 feet, nearly $\frac{1}{12}$.

These facts will apply particularly to the function of hearing, which we omitted in the former articles, as the facts relative to sound were not before us. The meatus anditorius is, we know, terminated by an interposed membrane, the drum, which is kept tense by the handle of the malleus, while the vibrations are communicated by the other bones to another drum, which closes the foramen ovale. There is, however, still another drum closed, according to signor Comparetti, by the membrane of the foramen rotundum, and another at no great distance. The outer drum conveys sound without probably increasing its intensity; but from its numerous irregularities seems to render it less distinct. These are corrected in the small bones, and the sound is conveyed unbroken by the stapes to the foramen ovale. Into the cavity of the tympanum the Eustachian tube opens, and various uses have been assigned to it. In fact, it is an essential part to what we may style an *air drum*, for without its assistance no sound could be conveyed to the interior ear. The whole of the cavity of the tympanum is lined with a membrane, perhaps to deaden all the sounds except those conveyed by the little bones, which receive a tension, that from their attachment they give also to the tympanum, by small muscles, peculiarly adapted for this purpose. When the tympanum is broken, the sound is apparently conveyed by the Eustachian tube to the little bones; but when these most essential organs are destroyed, as is sometimes the case, by suppuration, the deafness is incurable; though, when the stapes remains, a sense of sounds is not wholly lost. Mr. Home contends (Philosophical Transactions for 1800) that the membrana tympani is muscular, and that this structure concurs with the action of the little muscles in giving a delicacy of hearing, or what is styled a *musical ear*. We cannot deny the fact, but the consequences are not supported by observation, for those in whom the membrana tympani has been ruptured have retained their nice distinction of musical sounds. It has been designedly broken by Mr. Cooper and others, to restore hearing which was destroyed by the obstruction of the Eustachian tube; for in that case the tympanum cannot fulfil its office.

Minute anatomists, particularly Scarpa and Comparetti, have greatly added to our knowledge of the anatomy of the internal ear. It is of little importance to follow them minutely, and we shall only add the outline, where the structure is particularly connected with the function of the organ.

What we now style the *internal ear* is not the cavity immediately beyond the tympanum, into which the

Eustachian tube enters; but that inclosed by the membrane, which covers the foramen ovale, connected with the stapes, and that of the foramen rotundum, which opens into one of the scalæ of the cochlea. This part of the ear is styled the *labyrinth*, and we shall not now be surprised to find it filled with water, though it appeared singular to the first discoverer, Cotunnio, and was contested by Meckel. The fact was, however, proved by freezing the water in the cavity, and then sawing through the bones.

A remarkable singularity, as we have said, occurs in the openings of the two foramina, for while one, the foramen ovale, opens into the vestibule of the labyrinth, the other communicates with one of the scalæ of the cochlea; and Comparetti observes, that another drum is thus formed, whose umbo seems capable of rendering the membrane tense, producing an effect similar to the action of the muscles on the handle of the malleus. The existence of the two tympana, and each communicating with different sides of the cochlea, has occasioned no inconsiderable difficulty to physiologists. Does each drum convey the same sounds, or different ones? If the former, why is no confusion produced? If the latter, to what sounds is each tympanum adapted? It has been observed, that an elastic membrane was necessary to admit, by its yielding, of the vibrations necessary for the perception of sound; but the authors do not recollect, that in an inelastic fluid no vibrations can take place; nor will the face of the question change if we refer the communication of sound to a very rare and highly elastic ether. Water, we have remarked, conveys sound without the slightest agitation of its surface, and the yielding of an elastic ether in one part would apparently produce only its condensation in another.

If the structure of the scalæ cochleæ be minutely examined, they will be found to be divided by the spiral lamina, but there is a distinct communication between them on the top: the structure is the same; they are supplied by the same fasciculus of nerves, and in no respect is there any real distinction. It is possible therefore that the fenestra rotunda may be a subsidiary tympanum, to prevent total deafness, should the bones be destroyed by suppuration; for in this case some sense of hearing appears to return; and this idea is supported by its convexity internally. It is, however, on the whole more probable, that it is intended to yield in cases of violent shocks, to prevent any injury to the tender nerves by the concussion. To this opinion numerous objections may, indeed, be offered.

The peculiarly multiform and complicated structure of the human ear has occasioned some disquisitions respecting the peculiar utility of each part of the organ. As the cochlea was peculiarly minute in its structure, and singular in the arrangement of its nerves, it was supposed to be the seat of that acute and distinct perception of sounds which we style a *musical ear*. Unfortunately for this hypothesis, birds have no cochlea; but though they have minute perceptions of sounds, their scale is limited; while men can, according to Dr. Reid, distinguish four or five hundred variations of tone, and by combination an uncalculable variety. Some animals want many parts of this complicated organ; but no one animal wants a bone or a calculous concretion. When we hear through the bones of the head or the teeth, the sounds are still probably conveyed to the internal ear exclusively by the little bones.

We have not, in this disquisition, noticed the form and situation of the different sacculi, or the direction of the minute foramina into which many of the bones surrounding the ear are hollowed. Both are designed to enlarge the organ, and consequently to render it more sensible. The sacculi are not in contact with the osseous case; and Scarpa, when he traced the nerves to them, found them fibrillous on the external part, but the fibrous structure was lost on the internal; and it there became a soft, apparently an inorganic, pulp. In this respect the organ of hearing resembles that of seeing. In each, when the nerve is fibrous, it is insensible; but when the coats are deposited it becomes a smooth acute organ of sense.

We are provided with two ears, as with two eyes, to prevent a total loss of the sense, should either be destroyed. We know, that if the axis of each eye is differently directed, we perceive for a time objects double; but it is not so generally known that by disease we hear sounds double. Two singular facts of this kind we shall, however, mention from Sauvages. A musician blowing the flute, heard at the same time two sounds, viz. the proper sound, and another in the same time, but not in the same tone, and consequently not in harmony. On considering the subject he found that the day before he discovered this double sound he had been exposed to damp, and felt a catarrh on his right side. On the cessation of the complaint the usual accuracy of hearing returned. In another case, a person heard the voice of one who spoke to him, and, at the same time, another sound an octave higher; but it could not have been in unison, for the harshness attending it was intolerable. These facts, compared with the phenomena of sight, show that the sense depends on the coinciding impression, not on the visible image in the retina, or any undulations of a fluid; and these subjects considered in their analogous points will illustrate each other.

The diseases of the ear are not so peculiarly distinct and different as to occasion any very extensive disquisition. Of the morbid state of the internal ear we know little, except that it suffers with the brain from distension of the vessel, from active inflammation, or from palsy. There are, however, some local affections which dissection has traced; but, as usual, which previous observation has not connected with preceding symptoms. The Eustachian tube has been obliterated by inflammation, by ulcers, frequently syphilitic, or increased effusion from other causes. This disease impedes the vibration of the air and prevents hearing, which is restored by breaking the membrana tympani, and admitting the sounds through the bones of the ear and of the head, perhaps through the tympanum of the fenestra rotunda also; nor is it very unlikely that the latter conveys the vibrations from the teeth and bones of the head, while the malleus and its connections convey those through the tympanum.

External bodies passing into the meatus produce considerable pain; and the motions of a living animal, as a fly or insect, the most painful noises. These may be washed out or destroyed by the appropriate injections. Common soap and water is sufficient for the former, and oil or tobacco smoke for the latter. Inflammation of the meatus often occasions most violent pains, which often terminate in suppuration, the matter either passing externally between the lobe of the ear and the mastoid

process, or into the cavity itself. In a strong light we can, by pulling the lobe backward and downward, see the whole of the meatus, and the state of the ulcer will suggest the proper applications.

An herpetic eruption of the ear sometimes extends to the meatus, and the increased discharge closes the passage. This complaint yields readily to alterative mercurials internally, to mercurial applications, with the strictest attention to cleanliness. The most useful application is the unguentum cerussæ acetatæ, with a small proportion of the unguentum citrinum. A fungus or polypus of the meatus requires no particular treatment. Mr. Sanders supposes that they most frequently occur when the tympanum has been broken.

Inflammation of the cavity of the tympanum often terminates in suppuration, which has been generally neglected from apprehension of injuring so delicate an organ, or transferring the matter to the brain. The former idea is visionary, and the latter absurd. If suppuration continues, the small bones will in time suffer, and the patient become irrecoverably deaf. Blisters behind the ear, gentle saline purgatives, solutions of the vitriolated zinc, injected into the ear, sometimes with a small proportion of the tincture of opium, will often remove the complaint. When polypi, which are not unusual in these circumstances, follow, they may be extracted by forceps, or sometimes destroyed, if soft, by puncturing. The base may be eroded by the argentum nitratum.

When the tympanum is destroyed, air may be forced through the meatus externus from the lungs, through the Eustachian tube, if the mouth and nostrils are closed; but if the membrane is sound, a distending force is felt against the tympanum. This experiment in each case will not succeed with every one. It shows, however, when the air passes, that the tympanum is at least in part destroyed, and the degree of injury is known by the quantity of air discharged through the meatus. In this case our plans should be actively pursued to prevent the exfoliation of the bones. When the tube is really obstructed by the effects of inflammations, polypi in the nose extending to the throat, or enlarged tonsils, Mr. Ashley Cooper's very judicious plan of puncturing the tympanum often succeeds. The part where the handle of the malleus is fixed should be avoided, and the aperture should not be very small, as it will in that case again close (Philosophical Transactions for 1802).

When the meatus is not diseased, when by the breath, on closing the mouth and nostrils the tympanum is inflated, and deep-seated pain or noises in the ears are attended with deafness, the cause is inflammation, or what is styled nervous deafness. The pain distinguishes the former, and the noises the latter. Evacuations of the most active kind are necessary for the pain, and these may be general or topical. Leeches and blisters reach most nearly to the part, when applied near the mastoid process; but general evacuants and the most cooling medicines are chiefly effectual. The nervous deafness, which sometimes arises from palsy, is relieved by tonics; more often by small doses of alterative mercurials, and stimulating applications to the meatus. See TINNITUS AURIUM, and SURDITAS.

Sanders on the Human Ear; Scarpa Anatomicæ Disquisitiones de Auditu et Olfactu; Valsalva de Aure Humana; Home in the Philosophical Transactions for 1800; Perolle in the Turin Transactions, vol. 5; Monro on Fishes.

SO'PHIA, (from σοφος, *wise*); *chirurgorum sapientia, accipitrina, cardamines, thalictrum, nasturtium sylvestre, seriphium Germanicum, erysimum, sisymbrium.* FLIXWEED, or FLUXWEED, *sisymbrium sophia* Lin. Sp. Pl. 920, is a plant with a hard woody root, full of small fibres at the bottom; the leaves are long, winged, neatly divided, resembling those of Roman wormwood, and covered with short hairs; the flowers are at the ends of the branches, of a yellow colour, succeeded by slender seed-vessels, about an inch in length; the seeds red. It grows in sandy ground, amongst rubbish, and bears flowers in June.

The seeds only are used; in Paris they are sold under the name of *talitron*. Boerhaave thinks them saponaceous and diuretic, adding that their inward use assists the healing of ill-conditioned ulcers. Their taste is somewhat astringent, but acrid like that of mustard.

SO'POR, (from ὑπαρ, *Scaliger*.) See CAROS.

SOPORA'LES, (from *sopor, sleep*). The SLEEPY VEINS, because their compression produces sleep. See JUGULARES VENÆ.

SOPORA'RIÆ ARTE'RIÆ, (from the same). See CAROTIDEÆ ARTERIÆ.

SOPORO'SI, (from the same). Diseases attended with a diminution of sense and motion.

SO'RA, (from the Arabic *sorah, a humour*). See ESSERA.

SO'RBUS SYLVE'STRIS, (from *sorbeo*, because its fruit stops fluxes); *æa, ornus, cotonaster*; the SERVICE-TREE; *sorbus aucuparia* Lin. Sp. Pl. 683, resembles the pear and the cratægus in all respects, except that the leaves are pinnated, as in the fraxinus. The fruit is astringent before it is ripe, but afterwards very agreeable. Raii Historia.

SORE, BAY. An ULCER, endemic in the bay of Honduras, which Dr. Mosely considers as a true cancer, not uncommon also on the Mosquito shore, supposed by the Indians to be produced by the eggs of a large fly deposited in the flesh. It affects every part of the body, and is fatal unless treated with propriety in the beginning. A gum plaster is sprinkled with muriate of mercury and applied to the cancer, on which it must be allowed to remain for forty-eight hours. About a scruple of muriated mercury is sufficient for a plaster as large as a crown piece. When taken off, a common poultice is applied, and repeated until the cancer comes out by the roots. The part is then cured like a common ulcer. A purge or two of calomel sometimes precedes the application. Moseley on Tropical Diseases.

SO'RGO, or SO'RGHUM. See MILIUM INDICUM.

SO'RY, (*soriach, filthy*, Arabic, because of its disagreeable smell), is a mineral blackish, hard, heavy, of a cavernous spongy texture, a disagreeable smell, a nauseous vitriolic taste; in fact an argillaceous schistus filled with decomposed pyrites, found in Egypt, and used by the Greeks as a depilatory.

SOUDE; *soude blanche*. See ANATRON.

SPADANÆ A'QUÆ. WATERS OF SPA, in the bishopric of Liege. At Spa there are a number of different springs, but those of Pohun and Geronsterre are preferred.

Both are acidulous chalybeates, but the last is the

weaker in its chalybeate impregnation, but the most brisk and acidulous. It is alleged to have more of a sulphureous smell, to be brisker at the fountain, and more apt to produce giddiness than any other of the waters of this district.

According to Bergman a gallon contains, aërated iron, 4 grains and above $\frac{3}{4}$; aërated lime, 12 grains and above $\frac{1}{3}$; aërated magnesia, 20 grains; mineral alkali crystalised, 12 grains and above $\frac{1}{3}$; of common salt, $1\frac{1}{2}\frac{0}{2}\frac{1}{4}$ gr. Dr. Higgins found, in the Winchester gallon of these waters, twelve grains of aërated lime; $17\frac{2}{10}$ grains of aërated magnesia; 16.8 of mild natron; 3.5 of acidulated iron; 7.8 of sea-salt, and about 0.1 of a mineral oleaginous matter. They contain also 132 ounce measures of an uncombined carbonic acid, and $3\frac{1}{2}$ of common air. These waters are diuretic, sometimes purgative, and, like other chalybeates, impart a black colour to the stools. They exhilarate the spirits, and invigorate the system. A glassful is repeated several times in a morning. The Spa waters are esteemed the best chalybeates in Europe; and are also applied with success as injections in the fluor albus, ulcers as well as cancers of the womb, and in the gonorrhœa. They are useful for washing venereal aphthæ and ulcers of the mouth; phagedænic ulcers; as gargles for relaxed tonsils; for fastening the teeth when loose; and in other cases of relaxation. Complaints are said to have been relieved by bathing and washing, observing at the same time their internal course.

SPANO'POGON, (from *σπανος*, and *πωγων*). A THIN BEARD.

SPA'RAGUS. See ASPARAGUS.

SPARGANO'SIS, (from *σπαργαω*, *to swell*). See ABSCESSUS PECTORIS, and MAMMÆ.

SPA'RTA PO'LIA. See AMIANTHUS.

SPA'RTIUM SCOPA'RIUM, (from *σπειρω*, because it *scatters* its seed and sows itself). See GENISTA.

SPA'RTIUM ARBORESCENS, HISPANICUM. See GENISTA JUNCEA.

SPA'RTIUM MAJUS. See GENISTA SPINOSA MAJOR.

SPA'SMUS, (from *σπαω*, *to draw*). A SPASM, CRAMP, or CONVULSION. A *spasm*, strictly speaking, means a continued contraction of a muscle, or any portion of muscular fibres; but the term is often used more extensively, and applied to every irregular action of these fibres. This latitude is allowed when it includes only convulsive disorders, or, as called by Dr. Cullen, *clonic spasm*, in opposition to the more fixed contraction, which is more truly spasmodic; but when, as in this author's nosology, increased actions are referred to the same head, as those which constitute cholera, diarrhœa, &c. it leads to confusion.

A still more erroneous language is that of some late pathologists, who speak of spasms of nerves or membranes. Haller attributed paleness to contractions of little nerves, which he supposed to exist, encircling the extreme arteries; and we often hear of spasms of the dura mater, of the medulla spinalis, &c. There is not, however, the slightest evidence of contraction but in muscular organs, if we except only that of the simple solid from cold or astringents, or, as has been said, of the fibrin by the galvanic stimulus.

The cause of spasm, as we have observed (see CONVULSIO, and NERVOSI MORBI), is either irritation or debility; most commonly the latter, though both are sometimes combined.

The particular irritations are numerous. In the London Medical Journal, vi. 36, we find spasm produced by a needle which was swallowed and returned by coughing; in the Memoirs of the Medical Society from the puncture of a needle, vol ii. Saburræ in the stomach, and worms in the intestines, have equally occasioned it; and we find an instance in Bartholine of its arising from a contusion of the eye; in Vater of its proceeding from hernia. There are numerous instances of spasm produced from a tumour on a nerve, irritation from distended vessels, or bony excrescences in the brain or cranium. Crell gives a case in which it was excited by the vitriolic acid; and to the head of irritation may be referred a very common cause, violent passions.

We need not repeat what we have said in the article CONVULSIO, q. v, respecting debility as a cause of spasm. It is common in hysteria, from inanition, from repelled small-pox, or other erruptions, from obstructions of the viscera, and other causes of weakness.

The chief remedies of spasm are those which remove the irritating cause; such as excite any sudden and violent commotion; tonics or stimulants, and medicines styled, from this effect, antispasmodics. Of the latter we have already spoken, and indeed in a great measure included the former, so that we shall now only cursorily enumerate them.

When spasm depends on irritation, the cause must be investigated; and if possible removed by the appropriate remedies, if within their reach. If the cause cannot be ascertained, we must endeavour to lessen irritability by anodynes, of which the principal are camphor, hyoscyamus, and opium. A sudden terror, the apprehension of a severe operation, on the return of a fit, and unexpected surprise, have succeeded. Dashing water in the face, touching a person unexpectedly with something cold, or throwing up a cold clyster, have, from the same principles, been effectual. Electricity also probably acts by its surprise and the terror which it excites.

The tonics employed are cold bathing, the bark, the arnica, the viscum, and the cardamine, though the two latter scarcely deserve the appellation or the credit they have enjoyed. The metallic tonics are, iron, copper, mercury, arsenic, silver, and zinc. Each is often effectual, and each has had its temporary reputation. Arsenic, copper, and silver seem the most generally useful. The steady action of stimulants appears not to have been pursued, except so far as mercurials and some of the metallic tonics may produce this effect.

SPA'SMUS CLO'NICUS, (from the same, and *κλονεω*, *to agitate*). CLONIC SPASM. In a morbid state, the contraction of the muscles, or of the muscular fibres, is involuntary. When the contractions are succeeded by a relaxation, but at the same time are repeated without the concurrence of the will, or the repetition of the natural causes, but more frequently, and often more violently than in an healthy state, such diseases are called *motorii*; and this state of morbid contraction hath been named *clonic spasm*; by Dr. Cullen *convulsio*. See Cullen's First Lines, vol. iii.

SPA'SMUS CY'NICUS, (from *κυων*, *a dog*). See SARDONICUS RISUS.

SPA'SMUS TO'NICUS, (from *τεινω*, *to stretch*). TONIC SPASM. When the contractions are violent,

and are neither succeeded by a spontaneous relaxation, nor readily yield to an extension, either from the action of antagonising muscles, or from other powers, this state of contractions is called a *tonic spasm*; strictly and simply a spasm. See Cullen's First Lines, vol. iii.

SPA'THA, (from σπατος, *corium, a skin*, from σπαζω, *to draw round*). The calyx of a flower which opens longitudinally, resembling a sheath, and enveloping a spadix, which properly means the receptacle of a palm. The term is, however, generally, applied to other plants whose flower-stalks proceed from a sheath, as in the narcissus.

SPA'TULA FŒ'TIDA. See IRIS FŒTIDA.

SPE'CIES. SPECIES. The old pharmaceutical term for powders.

Species also means individual plants, agreeing in their appearances, and varied only by culture, temperature, &c. From BOTANY the term has been transferred to NOSÓLOGY and MINERALOGY. Vide in verbis. See CLASSIS.

SPECI'FICA, (from *speciem faciens, peculiarly adapting*). SPECIFICS. By specifics are meant such medicines as infallibly and in all patients produce given salutary effects; acting by some unknown power on the disease, without being directed by indications. Such was the bark supposed to be in intermittents, and mercury in lues: such are the boasted remedies of the quacks. In general, however, as sound science has increased, these vaunted specifics have disappeared, and we now find no remedy which does not by some action on the system point out the principles by which its salutary effects are produced. Even with respect to mercury we have shown that no inconsiderable steps had been taken to explain its action.

SPECI'FICA GRAVITAS, AREOMETRIE of the French philosophers; SPECIFIC GRAVITY. This term implies the density of bodies, as well as the means of discovering it, and consists in comparing their weight with their bulk. The difference is ascertained by weighing, with great accuracy, the same bulk of different fluids, or weighing the same substance in air, and in any fluid which does not dissolve it. Another method, and that most commonly employed in practice, is immersing a graduated instrument, a ball of glass or ivory for instance, with a long neck, on which degrees are marked, and the denser the fluid the higher the instrument will float, or the greater weight be necessary to bring it to the same degree. For comparative expressions, distilled water is the usual standard; and as bodies expand with heat, or contract with cold, a mean temperature has been usually chosen, very frequently 62° of Fahrenheit. The language of these tables has a reference to the weight of distilled water, which is styled unity or 1, with as many cyphers as the accuracy of the experiments require for comparison, as 1.000 or 1.0000. Thus, when we say that the specific gravity of any body is 5.246, it means that it is five times and a half heavier than water, with the addition marked by the two last figures, viz. four hundreds and six thousands. In some minute experiments we find seven or eight decimals.

This branch of philosophy is referred, with reason, to Archimides, who was indebted for it to his observing the water rise in the bath on his going into it, and he pursued the hint by ascertaining the proportion of gold and silver in a crown; but the invention of the hydrometer has, by some late authors, been strangely referred to Hypathia, a female platonic philosopher, of the sixth century; but the hydrometer was elegantly described by Rhemnius in a philosophical poem, de Ponderibus et Mensuris, an extract from which is usually printed at the end of Priscian's Works. Rhemnius lived under Tiberius and Caligula, three centuries before Hypathia.

It is not the object of the present work to pursue this inquiry minutely, and we shall therefore only observe that, from the time of Gethaldus, the first author expressly on the subject, we find some interesting remarks, with tables, of the specific gravities of bodies in sir Isaac Newton's Optics; Martin's Philosophia Britannica; Davies, in the Philosophical Transactions, N°. 488; Muschenbroeck's Experimental Philosophy, § 1417, whose table is particularly full and exact; Brisson, on the specific gravity of bodies, whose experiments were singularly minute and accurate; Kirwan, in his Mineralogy; Bergman; and Hassenfratz, in the Annales de Chimie, tom. 27, and suivans. As we can neither engage in disquisitions on the comparative forms of instruments, or on the apparent accuracy of experiments, we shall add some tables of specific gravities; and the first which we shall select will be from Dr. Duncan's very useful Pharmacopoeia, a work to which we have often been obliged. The capitals after the figures refer to the authors from whom the specific gravity is taken, viz. LAVOISIER, BRISSON, KIRWAN, CRUICKSHANK, and DAVIE.

Table of specific gravities, at a medium temperature.

Distilled water,	1.0	
GASES.		
Oxygen,	0.0013562	L.
———	0.00133929	B.
Hydrogen,	0.0001	K.
———	0.00009911	B.
———	0.000094071	L.
Sulphuretted hydrogen,	0.00135	K.
Carburetted hydrogen,	0.000804	C.
———	0.000787	C.
Light do.	0.00063	C.
———	0.000534	C.
Nitrogen,	0.0012	K.
———	0.00119048	B.
———	0.001189	L.
Atmospheric air,	0.0012308	L.
———	0.00123609	B.
Nitrous oxide,	0.00197	D.
Nitric oxide,	0.001343	D.
———	0.00130179	B.
———	0.0014631	K.
Carbonic oxide,	0.001167	C.
——— acid,	0.00186161	B.
———	0.0018454	L.
Sulphurous acid,	0.00253929	B.
———	0.0018856	K.
Muriatic acid,	0.00213482	B.
Ammonia	0.00065357	B.
———	0.00073539	K.

Oxygenized muriatic acid gas, and fluoric acid gas, unknown.

SOLIDS.

Diamond,	3.5212
Native sulphur,	2.0332
Melted do.	1.9907
Phosphorus,	1.7140
Platinum fused,	19.5000
Gold do.	19.2581
Mercury,	13.5681
Lead,	11.3523
Silver,	10.4743
Bismuth,	9.8227
Cobalt,	7.8227
Copper,	7.7880
Nickel,	7.3806
Tin,	7.2914
Cast iron,	7.2070
Zinc,	7.1908
Manganese,	6.8500
Antimony,	6.7021
Tungsten,	6.6785
Tellurium,	6.1150
Molybdenum,	6 nearly.
Arsenic,	5.7633
Uranium, titanium, chrome, and columbium, unknown.	
Potass,	4.6215
Baryta,	4.
Magnesia,	2.3298
Lime,	2.3908
Alumina,	2.
Zirconia,	4.3
Silica,	2.66
Soda, strontia, gadolina, glucina, unknown.	
Tallow,	0.9419
Hogs lard,	0.9478
Yellow wax,	0.9648
White do.	0.9686
Spermaceti,	0.9433
Rosin,	0.0727
Sandarac,	1.0920
Mastich,	1.0742
Copal,	1.0452
Elemi,	1.0682
Labdanum,	1.1862
Resin of Guaiac,	1.2289
Resin of jalap,	1.2185
Dragons blood,	1.2045
Tacamahaca,	1.0463
Benzoin,	1.0924
Storax,	1.1098
Gum ammoniac,	1.2071
Gamboge,	1.2216
Olibanum,	1.1732
Myrrh,	1.3600
Scammony,	1.2354
Galbanum,	1.2120
Assa fœtida	2.3275
Hepatic aloes,	1.3586
Socotorine aloes,	1.3795
Opium,	1.3366
Gum arabic,	1.4523
—— tragacanth,	1.3161
Extract of liquorice,	1.7228
——— catechu,	1.4573
Camphor,	0.9887
Caoutchouc,	0.9335
Cork,	0.2400

FLUIDS.

Water,	1.0000
Sulphuric acid,	2.1250
Nitric acid,	1.5800
Muriatic acid,	1.1940
Acetous do.	1.0135
Acetic do.	1.0626
Water saturated with ammonia,	0.8970
Alcohol,	0.8293
Sulphuric ether,	0.7394
Oil of turpentine,	0.8697
—— olives,	0.9153
—— almonds,	0.9170
Linseed oil,	0.9403
Whale oil,	0.9233

We shall add, from Hassenfratz, the specific gravities of salts and earths, omitted in the foregoing table; and though some may recur that have been already mentioned, it will be of use to receive either a confirmation or a correction of the former experiments.

ACIDS.

Arsenical	2.42
Concrete tartarous	1.59
Boracic.	
Sublimed	0.81
Melted	1.80
Efflorescing	0.49
Camphoric	0.77
Benzoic	0.66
Saccholactic	0.64

ALKALIS.

Pure kali	1.70
Pure soda	1.33

EARTHS.

Lime	1.52
Alum	0.82
Magnesia	0.34
Barytes.	
Calcined	2.37
Moist crystals	1.46
Strontian.	
Calcined	1.64
Moist crystals	1.46

SALTS.

Acidulated sulphat of potash, melted	2.04
————— crystalised	1.58
Saturated sulphat of potash	2.40
Sulphat of soda	1.44
——— ammonia	1.76
——— lime	2.18
——— alum *(octoedral)*	1.71
——— *(cubic)*	2.21
——— magnesia	1.66
——— zinc *(in grains)*	1.32
——— *(crystalised)*	1.91
——— iron	1.83
——— copper	2.19
——— lead	1.87
——— manganese	1.65
——— ammoniaco-magnesian	1.69

Sulphite of potash	1.58
——— soda	2.95
——— magnesia	1.38
——— alumine	1.22
——— barytes	1.69
——— mercury	4.06
Nitrat of potash	1.93
——— soda	2.09
——— ammonia	1.57
——— lime	1.62
——— magnesia	1.73
——— alumine	1.64
——— barytes	2.91
——— strontian	3.00
——— zinc	2.09
——— copper	2.17
——— lead mercury	3.91
Oxygenated muriat of potash	1.98
Muriat of potash	1.93
——— soda	2.20
——— ammonia	1.54
——— lime	1.76
——— magnesia	1.60
——— barytes	2.82
——— strontian	1.44
——— zinc	1.57
——— copper	1.67
——— lead	1.82
——— mercury	7.17
——— *(oxygenated)*	5.13
——— tin	2.29
Tartrite of potash	4.55
——— *(acidulated)*	1.91
——— soda	1.74
Acetite of soda	2.10
——— lime	1.00
——— magnesia	1.37
——— alumine	1.24
——— barytes	1.82
——— lead	2.34
——— copper	1.77
——— iron	1.36
Phosphat of potash *(dried)*	2.85
——— soda	1.33
——— ammonia	1.80
——— ammonia and soda	1.50
——— magnesia	1.54
——— barytes	1.28
——— copper	1.41
——— mercury	4.98
Phosphure of lime	0.98
Borat of soda *(of commerce)*	1.72
——— *(saturated)*	1.35
——— lime	0.70
——— and magnesia	0.99
——— mercury	2.26
Carbonat of potash	2.01
——— soda *(in mass)*	1.35
——— *(crystalised)*	1.73
——— ammonia	0.96
——— magnesia *(in powder)*	0.29
——— alumine	1.11
Tungstat of ammonia	1.93
Prussiat of mercury	2.76
Arseniat of potash	2.15
Camphor	0.99
Common sugar	1.40

In these experiments Hassenfratz agrees with Newton, Muschenbroeck, and Kirwan, so far as their experiments were made on the same bodies, if we except the sulphat of zinc. Newton styles it the vitriol of Dantzic, and the difference probably depends on its state of crystalisation.

We shall add another table from Bergman, containing not only the specific gravities, but SPECIFIC HEATS, a subject on which we need not enlarge at present. See CALORIC.

TABLE *of Specific Gravities and Specific Heats from* BERGMAN.

	Sp. Grav.	Sp. Heats.
SOLID.		
Swedish glass	2.386	0.181
Flint glass	.	0.174
Agate	2.648	0.195
Ice	.	0.900
Sulphur	.	0.183
Gold	19.040	0.050
Silver	10.001	0.082
Mercury	13.300	0.032
Lead	11.456	0.042
Copper	8.784	0.114
Iron	7.876	0.126
Tin	7.380	0.060
Bismuth	9.861	0.043
Antimony	6.107	0.063
Brass	8.356	0.116
Calx of lead	.	0.086
——— iron	.	0.320
——— tin	.	0.096
——— lead and tin	.	0.102
Diaphoretic antimony *(washed)*	.	0.220
FLUID.		
Distilled water	1.000	1.000
Vitriolic acid *(pale)*	1.885	0.758
——— *(dark)*	1.872	0.429
Pale nitrous acid	.	0.844
Red smoking nitrous acid	1.355	0.578
Red wine vinegar	.	0.387
Purest concentrated vinegar	1.068	0.103
Oil of tartar per deliquium	1.346	0.759
Pure ammonia	0.997	0.708
Sal Glauberi pars 1. aquæ 2.9	.	0.728
Nitre, p. 8	.	0.646
Sea salt, p. 8	.	0.832
Sal ammoniacum crudum, p. 1—5	.	0.798
Tartar, pure	237.3	0.765
Magnesia vitriolata, 2	.	0.844
Alum, p. 4.45	4.45	0.649
Green vitriol, p. 2.5	2.5	0.734
Brown sugar dissolved	.	1.086
Olive oil	.	0.710
Lintseed oil	.	0.528
Spermaceti	.	0.399
Oil of turpentine	.	0.472
Spiritus vini rectificatus	0.783	1.086
Hepar sulphuris	0.818	0.994
AERIAL.		
Alkaline air	.	0.068
Vital air	0.132	87.000
Common air	0.125	18.000
Carbonic acid air	0.181	0.270

There are some other applications of the term *specific*, of which we shall only mention SPECIFIC STIMULUS, by which is meant the peculiar sensibility of some substances to a particular organ. Thus the white of an egg will, in some stomachs, prove singularly offensive, though void of every irritation, even to the eye. On this principle, the action of some medicines on a particular secretory organ has been explained; for if any body be brought to glands not disposed to be acted on by them, they prove wholly inert. More attentive observation has, however, disproved many of the facts on which this opinion rested, and shown that the effects are produced by a very different action. Thus antimonials and opium produce perspiration by a relaxing power, and cold on the skin induces the action of the kidneys in consequence of altered determination.

SPE'CILLUM, (from *specio, quo aliquod specimus*). A PROBE, said to have been invented by Æsculapius.

SPE'CULUM, (from the same); *diastomotris*. An instrument for dilating the natural passages or cavities; also a name for the aranea tunica of the eye.

SPE'CULUM ANI, is highly useful in opening fistulous ulcers of this part, for even the director is not always a certain guide. The instrument invented under this name by Dr. Mudge is not unlike the gorget, but not so taper, and without the beak. The finger is introduced into the rectum, and the larger speculum on it, the concavity filled by the finger, and the extremity not carried beyond it. When the finger is withdrawn a considerable extent of the gut is seen, and the operation performed in the usual way. The smaller speculum assists in applying the dressings, as so considerable a dilatation is not necessary.

SPE'CULUM OCULI. A RING, adapted to a handle with a groove at its upper circumference to fix the edge of the upper eyelid. It is designed to keep the eye open in the operation of the cataract; but is now seldom found necessary.

SPE'LTA, (an Italian word, or *spelt*, German). See ADOR.

SPE'LTER. See ZINCUM.

SPE'RMACE'TI, (because it was supposed to be the *seed* of the *whale*). The species from which it is procured is the *physeter macrocephalus* Linnæi, whose enormous head contains in a triangular cavity an unctuous substance, from which a pure oil can be pressed, leaving the spermaceti in the form of a white unctuous substance. It is found in a small proportion in the fat of the rest of the body, and is deposited often from the oil. The spermaceti is at last purified by washing it in an alkaline ley.

Its colour is a pure silvery white, and it is composed of plates of a crystaline appearance, almost transparent. It is softer than wax, more brittle, and tastes and smells not unlike tallow, without any flavour. Its obvious properties distinguish it from other concrete oils, and it congeals at the 112th degree of Fahrenheit. Spermaceti makes very white candles, which burn with a clear white flame without any smell.

Spermaceti in distillation yields a fluid oil, which concretes in cooling, leaving in the retort a very small proportion of coal. If the distillation is repeated the oil becomes permanently fluid. It seems scarcely decomposed in the process, as the heat required is inconsiderable; and on that account probably there is no appearance of any acid. Crell, however, found the oil, thus procured, partly white and partly brownish, yielding by repeated distillations a yellowish acid, which was never permanently fluid. The acid carefully rectified is wholly colourless, and seems to resemble *his* sebacic acid. The oil unites with ammonia into a saponaceous emulsion.

This substance is slightly and with difficulty soluble in alcohol; the whole seeming to be deposited on cooling. Warm ether and oil of turpentine dissolve it copiously, but do not retain it when cold. With pure kali it forms a soap soluble in warm water. Fluid ammonia when cold has no action on it, but when warm unites with it, and does not separate on cooling, or on adding water. With concentrated sulphuric acid it forms a brown solution, which when dropped into water yields the spermaceti unaltered, and dissolves sulphur like other fat oils. By long exposure to the air it becomes brown and rancid.

On removing the bodies from a large burying-ground, in Paris, the animal matter was found to have assumed the appearance and properties of spermaceti. A long continuance in the earth seemed sufficient to produce this change; but it appeared to be greatly assisted by a current of water. This discovery Dr. Gibbes has attempted to render useful; but the fetor cannot be wholly expelled, except at very disproportioned expence. This substance, which has been called adipocere, melts in a less heat than spermaceti, and, on cooling, becomes more brittle. The adipocere is much more soluble in alcohol, and liquid ammonia also dissolves it. The difference is, however, inconsiderable, and adipocere has almost superseded the name of spermaceti.

This concrete is much used in coughs, dysenteries, erosions of the bowels, chiefly as a relaxant and a demulcent. It readily dissolves in oils, and unites with wax, by the assistance of heat, so as to form a convenient external remedy. For internal use it may be formed into an emulsion with water, by the intervention of the mucilage of gum-arabic, the yolk of egg, or of almonds. It has been generally used in internal inflammations, as if its demulcent qualities could be conveyed through the circulating system; in inward bruises; and was for ages commonly given after delivery.

The College of London order an ointment to be made of this, called *unguentum spermatis ceti*, spermaceti ointment, formerly the linimentum album, by melting six drams of spermaceti, two drams of white wax, and three ounces of olive-oil, together over a slow fire, and constantly and quickly stirring the solution till it cools. See Lewis's Materia Medica; Newmann's Chemical Works.

SPERMA'TICÆ ARTE'RIÆ, (from *sperma, seed*). The SPERMATIC ARTERIES. Each rises from the anterior part of the aorta, between the emulgent and the inferior mesenteric arteries, passes obliquely downwards and outwards, runs upon the psoas muscle to the brim of the pelvis, and then through the aperture in the external oblique. They are behind and contiguous to the peritonæum, and do not lie in the cavity of the belly, are connected by the cellular membrane to each other, and their corresponding veins, all which run in a serpentine manner, form, with other vessels, the spermatic cord.

SPERMA'TICA CHO'RDA, the SPERMATIC CORD, *corpus varicosum, corpus pyramidale, plexus* and *corpus pampiniforme, vasa spermatica, præparantia vasa, capreolaris*, and *capreolaria*, is composed of the spermatic

artery and vein, of nerves, lymphatics, the vas deferens, the cremaster muscle, and aponeurotic membrane, derived from the opening of the external oblique, connected by cellular membrane.

SPERMA'TICÆ VE'NÆ. SPERMATIC VEINS. A little below the emulgent veins the vena cava sends out the right spermatic; but the left commonly springs from the left emulgent, for the sake, it is said, of avoiding the aorta in its passage, by which the motion of its fluid might be retarded. This is, however, improbable; for the motion of the fluids in the emulgent is not affected by the action of this artery.

SPERMATOCE'LE, (from σπερμα, *semen*, and κηλη, *a tumour*), *epididymis distensa*, is a morbid distension of the epididymis and vas deferens, from a stagnation of semen, produced by tumours, too rigid continence, stricture, or inflammation, about the caput gallinaginis, or in the course of the vas deferens; but the last is the most frequent cause.

When from an inflammatory affection, general and topical blood-letting, gentle laxatives, a low cooling diet, and rest, will commonly be found effectual; but when tumours are discovered to press upon the vas deferens, they ought either to be brought to suppuration, or their extirpation should if possible be attempted. Sometimes the tumours depend on a venereal cause; and a well-directed course of mercury hath been known to remove them.

When all other means having failed, castration has at last, it is said, been found requisite. See Bell's Surgery, vol. i. p. 495.

SPHA'CELUS, (from σφαζω, *to destroy*). See MORTIFICATIO.

SPHA'CELUS O'SSIS. See SPINA VENTOSA, and CARIES.

SPHACELI'SMUS, (from σφακαλιζω, *to destroy*). See PHRENITIS.

SPHENOIDAL SUTURE. This, with the ethmoidal suture, surrounds, and joins the irregular processes of these two bones with the contiguous ones.

SPHENOI'DES OS, (from σφην, *a wedge*, and ειδος, *likeness*), *cuneiforme os; azygos; papillare os; basilare os; polymorphus*, the SPHENOID BONE, is an irregular bone which runs into the basis of the skull, from one temple to the other. Externally it hath five processes, which are all subdivided. The first and second are the two lateral apophyses, called *laterales processus*, the upper part of each of which is called the temporal process; that part of them which projects towards the inside, lower than the temporal, and which makes up part of the orbit, is called the orbitar process; the lowest and back part of these processes is called the spinous process. The two external processes which rise nearly perpendicular to the base of the cranium, with each a fossa behind, are called the pterygoid processes. The azygous process is that sharp middle ridge which is in the base of the bone. It has four foramina on each side: the first three are filled by the optic, the superior and inferior maxillary nerves, and the fourth transmits the largest artery of the dura mater. On each side is the superior orbital fissure, yielding a passage to the third, fourth, and sixth pair of nerves, with a branch of the fifth; and at the basis of each pterygoid process is a foramen styled *pterygoideum*, through which a branch of the external carotid passes. In infants it is composed of three pieces, the lateral processes being in separate portions. See CLINOIDES and SELLA TURCICA.

SPHÆRI'STICA, (from σφαιρα, *a globe*). A game, played in the sphæristerium, or tennis-court, supposed to be different from the modern tennis, but it is not known wherein the difference consists. The Milesians were particularly averse from this exercise; though the Athenians frequently gave the freedom of their city to the sphæristæ, or masters in this art: the ball with which they played was called *corycus*; and it was also the name for balls formed for different purposes, particularly of exercise. See CORYCUS.

SPHÆROCE'PHALA ELA'TIOR, (from σφαιρα, *a globe*, and κεφαλος, *a head*). See ECHINOPUS.

SPHE'NO-MAXILLA'RIS ARTE'RIA, is the first branch of the maxillaria interna arteria: it goes to the inferior orbitary, or spheno-maxillary fissure, and to the orbit, through the foramen spheno-palatinum.

SPHE'NO-MAXILLA'RES FISSU'RÆ, (from σφηνοιδες, and *maxilla, the jaw*), *inferiores orbitares fissuræ* are formed by the edge of the maxillary notches in the os sphenoides, continued in the maxilla superior, and there called the inferior orbitary fissures.

SPHE'NO PALA'TINI, (from the same, and *palatum, palate*). These muscles rise, one on each side, from the os sphenoides, and are inserted into the sides of the glandula palati, and back part of the uvula.

A name also of a lower maxillary branch of the fifth pair of nerves, distributed to the musculus pterygoidæus internus, the back part of the nares, the sinus sphenoidalis, and the Eustachian tube.

SPHE'NO PHARYNGÆ'I, (*pharynx*). These muscles rise, one on each side, from the alary processes of the sphenoid bone, and run to the sides of the pharynx.

SPHE'NO PTERYGO-PALA'TINUS. Valsalva discovered that this muscle does not belong to the uvula, but to the tuba Eustachiana. It rises from the os sphenoides, and is inserted into the fore-part of the palate.

SPHEN'O SALPINGO-PHARYNGÆ'I are muscles fixed by one extremity partly to the sphenoidal side of the bony portion, partly to the nearest soft portion of the Eustachian tube; running towards the external wing of the apophysis pterygoideus, into which one portion of the muscle is inserted: the other portion runs to the end of the wing, and turns round its forked extremity as over a pulley, and is inserted in the septum palati near the uvula.

SPHE'NO SALPINGO-STAPHYLI'NUS. See CIRCUMFLEXUS PALATI.

SPHE'NO SPINA'LIS. See DURÆ MATRIS ARTERIÆ.

SPHI'NCTER A'NI, (from σφιγγω, *to constrict*). *Orbicularis; aspidiscos; constrictor ani; cutaneus; cuticulosus*, a circular muscle, or rather an enlargement of the circular fibres of the muscular coat of the rectum, for the purpose of closing the gut which surrounds the extremity of the anus.

SPHI'NCTER LABIO'RUM, *constrictor labiorum, orbicularis, osculatorius musculus*, surrounds the lips with orbicular fibres, and by its action corrugating them. It is an antagonist to all the other muscles of the lips.

SPHI'NCTER ŒSO'PHAGI, and GU'LÆ. The SPHINCTER of the ŒSOPHAGUS, or GULA. See ŒSOPHAGUS.

SPHI'NCTER VAGI'NÆ. This muscle placed just

within the vagina consists of two planes of circular fibres, coming partly from the perinæum, and partly from the sphincter ani; they surround the vagina, and are lost in the fibres of the crura clitoridis. The existence of this muscle is denied by some anatomists.

Sphincter vesicæ, is a series of transverse fibres running cross-wise under the straight fibres of the neck of the bladder in a circular direction. The office of all the sphincters is to contract passages and prevent involuntary discharges.

SPHONDILIUM. Probably the Brancæ ursina, q. v.

SPI'CA. A spike, (from σταχυς, *Æol.* σπαχυς, *an ear of corn*); a species of inflorescence, resembling an ear of corn. Linnæus defines it alternate sessile flowers on a simple peduncle. When the flowers have the same direction it is termed *spica secunda;* when different ones, *disticha*.

Spi'ca mas. See Lavendula latifolia.

Spi'ca fœ'mina, et Vulgaris. See Lavendula augustifolia.

Spi'ca I'ndica, et Na'rdi. See Nardus Indica.

Spi'ca Ce'ltica. See Nardus Celtica.

Spi'ca Hortula'na. See Stœchas.

Spica is also the name of a bandage, which is of three kinds, called from their resemblance to an ear of corn; viz. *spica descendens* (see Deligatio); *spica inguinalis*, used for the cure of an intestinal hernia, a dislocation of the thigh, and a fracture of the os ilei. It is either single or double headed; the single is twenty-four feet in length, and three fingers broad; the end is placed on the os ilii of the sound side; hence the head of the roller passes round the bottom of the belly and the hip, then to the back part of the thigh; comes up between the thighs, is conveyed to the groin, and thence over the back where it began. The bandage is pinned to the compress on the groin, and finished by a turn or two round the belly. When applied to one groin only, it is called *spica inguinalis simplex;* and when this bandage hath two heads, the middle part is placed at the perinæum, whence the heads ascend obliquely to the hip, passing behind and before to the other hip.

The *spica inguinalis duplex* is applied to both groins, and is twenty-four feet long, and three inches broad. Its middle is fixed on the loins, and brought round the belly, where the ends are changed; they then pass round the outside of the thighs, under the buttocks, and ascend on each groin. Having secured the dressing, they ascend from thence over the ossa ilii to their beginning, where the heads are again changed and brought round to the belly, where they are once more changed, descending on each side of the scrotum, going round the buttocks to each groin, and so to the belly. They are then again changed, and they ascend to the ossa ilii. This direction must be repeated often.

The *simple spica*, sometimes called *geranium*, is a common roller, about five ells long, and three fingers in breadth, rolled up with one head. When rolled up with two heads, it is called *spica duplex*.

SPIGE'LIA, (from its spicated top). See Anthelmia.

SPILUS. A genus of the eighth order of Dr. Willan's system including natural marks. See Nævus.

SPI'NA. See Processus.

Spi'na, (*quasi spiculina;* dim. of *spica, a thorn,* from the thorny appearance of the vertebræ of the back); *rachis;* is divided into true and false vertebræ. The true are twenty-four in number, viz. seven of the neck, twelve of the back; the first of which is called *lophadia*, or *lophia*; the second *mischalister;* and five of the loins. Each vertebra is composed of its body and processes. The body is the thick anterior part, convex before, concave behind, and nearly horizontal and plain both above and below. The surfaces of two contiguous vertebræ are covered with a cartilage; and there is a ligament, composed of concentrical curved fibres, firmly attached to the horizontal surface of the vertebræ, as well as a strong ligament, which lies between the edges of the vertebræ, whose fibres decussate each other in the form of an X. From each side of the body of each vertebra a bony ridge is produced backwards and to a side, from the posterior extremity of which one slanting process arises, and another descends; the smooth side of each of these four processes, called oblique, is covered with a cartilage, and the two inferior oblique processes of each vertebra are articulated with the contiguous ones of the vertebra below. From between the superior and inferior oblique processes of each side, the vertebra is stretched out laterally, and forms a process called transverse. From the posterior root of the two oblique and of the transverse process on each side, a broad oblique bony plate is extended behind; and where these meet, the spinal process rises, and projects backwards. These seven processes form the posterior parts of the vertebræ, and are hollow at their anterior middle part: the cavity, joined with that on the back part of the bodies, makes a great canal which answers to another in the vertebræ above and below, for the medulla spinalis. There are two semicircular notches belonging to each vertebra, which coincide with two similar notches in the adjoining vertebra; and through these foramina, placed immediately behind the body of the vertebræ, the spinal nerves pass out.

The cervical vertebræ are concave above and convex below; flat forward and behind. Their spinal processes are bifid, to allow a more convenient insertion for the muscles. The transverse processes are short and generally bifid, the root having a hole for the secure passage of the vertebral artery and vein: the oblique processes are horizontal. The rotatory motions of the head are not entirely performed by the first and second vertebræ, but with the assistance of the rest of the spine; for the rotation of any two vertebræ is inconsiderable, and if this rotation, which nearly equals a quarter of a circle, was betwixt the first and second only, the spinal marrow of that part might have been injured.

The dorsal vertebræ are of a middle size between the cervical and lumbar, and are flattened laterally by the pressure of the ribs, which are inserted into small cavities in their sides. The ribs are articulated between two vertebræ, except in the first, eleventh, and twelfth, where the cavity for their reception is entirely formed in the respective vertebræ.

The lumbar vertebræ are the largest; the cartilages thicker, the spinal and oblique processes stronger, as their motion is more extensive, and they are most exposed to injury.

The false vertebræ are divided into two bones, viz. the os sacrum and os coccygis.

On the internal side of the spine are found a number of lymphatic vessels and glands.

SPI'NA ALBA, the WHITE-THORN TREE, *acanthaleuce, oxyacantha, mespilus apii folio sylvestris spinosa, calcitrapa*, HAWTHORN, *cratægus oxycantha* Lin. Sp. Pl. 683, is common in hedges: its flowers have an agreeable fragrance, and the infusion is used as a tonic in dyspepsia.

SPI'NA ACIDA. See BERBERIS.

SPI'NA ARA'BICA. See CARDUUS SPINOSISSIMUS.

SPI'NA ÆGYPTI'ACA. See ACACIA.

SPI'NA CERVI'NA, SOLUTI'VA INFECTO'RIA, PURGA'TRIX. See RHAMNUS.

SPI'NA HI'RCI. See GUMMI TRAGACANTHÆ.

SPI'NA SCA'PULÆ. See SCAPULA.

SPI'NA SOLSTITIA'LIS. See CALCITRAPA OFFICINALIS.

SPI'NA BI'FIDA, *hydrops medullæ spinalis; hydrocele spinalis; hydrorachitis spinosa*, is a tumour of the colour of the skin, seated upon the vertebræ of the neck, back, or loins, receiving its name from the processes of the spine being wanting, where it appears. It is congenital, known by its situation, its watery contents, and the palsy of the parts below, which usually attends it. Dr. Cullen names it *hydrorachitis*, defining it a soft small tumour above the vertebræ of the loins, the vertebræ opening beneath.

This disorder is incurable; and the children on whom these tumours are found die in a few days. If the tumour is opened, death is more speedy. Dr. Mackenzie saw a case of this kind, with which the child lived four months, but at length died in convulsions. Mr. Warner records an instance of it in a young man of twenty years old. (See his Cases in Surgery. Bell's Surgery, vol. v. p. 502.) The disease, in its most fatal form, consists of a deficiency of the vertebræ in that part, and the place of the bone is filled by an accumulation of fluid. An unossified portion of the skull is sometimes filled by a similar tumour. Where the patient has lived for some years, the vertebræ cannot be wholly defective, and if the following remarks of Mr. Abernethy are applicable, it can only be in these less perfect cases. The reason, he observes, of the accumulation of fluid in those diseases beneath the dura mater is not very apparent; nor does the cause producing the secretion appear to be powerful or constant: for the water collects very slowly at first; and, in some cases, none has ever been effused, and the child has grown up without experiencing any inconvenience. When once the collection has begun, the cause of its continuance and increase is evident: the collected fluid irritates and distends the membranes which secrete it, and thus augments the disease. Besides, he has seen very healthful infants who have been very imperfectly formed with respect to the vertebræ whence this disease originates, whose health has sustained but little derangement until the tumour has burst, when they have perished from the inflammation of the medulla spinalis, which inevitably ensues. To remedy all which, he proposes that a gentle degree of pressure should be made on the tumour from birth, or at its commencement, which might produce the absorption of any deposited fluid, and thus prevent the distension of the unsupported dura mater. But should this have no effect, and should the accumulation of fluid continue to increase, as the death of the patient would be inevitable on the spontaneous rupture, he thinks it would be vindicable to discharge the fluid, by a puncture with a finely cutting instrument, and endeavour to heal the wound immediately; and, should this be accomplished, to repress a future collection, by bandage, and by those topical applications which appear best adapted to this purpose.

SPI'NA CERVINA. See RHAMNUS.

SPI'NA VENTO'SA, *osteo sarcoma; spinæ ventositas; sideratio; cancer; gangræna et sphacelus ossis; teredo; fungus articuli; arthrocace; exostosis*; and when children are the subjects PÆDARTHROCACE, q. v. Dr. Cullen makes this a variety of the phlogosis phlegmone, from its situation, and leaves it to the judgment of the more experienced to determine, whether this complaint, with some others he has there enumerated, should be considered as a species of this genus.

Spina seems to have been a term applied by the Arabians from its occasioning a pricking in the flesh, and the epithet *ventosa* is added, because it seems to be filled with wind. The *spina ventosa*, according to Mr. Sharp, is a caries of a bone, attended with an internal corruption of its whole substance, generally from putrefaction of the marrow, by which the periosteum and ligaments, as well as the bone, are wholly destroyed. See CARIES.

Mr. Pott divides this disorder into the *hydrops articuli*, and the *fungus articuli*, or thickening of the ligaments of the joint, and the enlargement of the bone. The first often comes on suddenly, is of short duration, and rapidly recedes. It often happens in a relaxed habit, from a want of lymphatic absorption, from relaxation, from an obstruction in the circulation in the joint, or from rheumatism. The second is generally known by the uniform swelling of the parts, by their hardness and inflexibility: it usually ends in amputation.

The bone affected is often converted into a soft, homogeneous, sebaceous substance, resembling a cancerous gland; at other times filled with fungous flesh, covered externally by a thin, compact plate, minutely perforated: sometimes the whole becomes gelatinous. The first kind is styled *osteo sarcoma*, though improperly, as the substance is rather glandular than fleshy, and by no means organised. The soft parts often experience some, frequently a similar, disease, attended with great pain.

The second species is more properly the *pædarthrocace*, or *spina ventosa*, consisting in a swelling of the body or head of a long bone, so that its cancelli are much enlarged. The medullary membrane of the cancelli is thickened, and granulations sprout from it, which destroy the substance of the bone, leaving an external perforated shell. To this head must be referred the enlargement of the phalanges of the extremities from scrofula.

Dr. White observes, that this disorder is generally understood to be a tumour in the internal parts of the bone, gradually enlarging its substance. It is frequently hard, and without much pain; sometimes appearing as if puffed up with air, attended at first with a dull, afterwards with shooting, pricking pains, gradually extending itself to the periosteum and integuments which cover or lie near the part affected, and, in the end, producing an ulcer of the most stubborn kind. It is not confined to the cylindrical bones; it affects also

all those of the head, face, neck, back, and chest, though the former are the most frequent seats of the complaint. It is most injurious when fixed on the heads and processes of bones.

It may be caused by a scorbutic, scrofulous, or venereal acrimony, affecting the lamellæ or medullary substance of the bone; or by injury done to the corresponding vessels between the periosteum, lamellæ, and medulla, from external violence.

When mild and in the early stage, proceeding from external injury, cold applications, with Goulard's extract in the water of acetated ammonia, have been of great service. When from acrimony in a moderate degree, an alterative course, with mercurial ointment, decoction of sarsaparilla, or of the woods, together with an acescent and milk diet, will restrain its progress. Accidents are generally confined to the external lamellæ, and seldom produce diseases of great depth in the cylindrical bones, without some predisposing cause in the habit, which it is the business of the surgeon to examine. When the superincumbent parts begin to be discoloured, and suffer pricking pain and burning heat, an ulcer is certainly forming on the outside of the bone. At this time the diseased part should be laid bare by a sufficient opening, with a caustic or the knife. Perforation, as directed in the carious ulcer, then becomes expedient; with such dressings as will tend to absorb the discharge, and restrain the flesh from growing over the denuded bone, until the diseased part is separated, or the discharge dried up. When the whole of the substance is diseased, particularly in or near a joint, amputation is the only remedy; but it is justly observed by Mons. Le Dran, that the operation should not be performed upon that part of the bone which is diseased.

Amputation is seldom necessary in the swellings of the phalanges of the fingers and toes; but bathing the parts in soap and water, or a diluted solution of potash, will be often useful. It is, on the other hand, peculiarly necessary when a large portion of bone is affected; when fever, colliquative sweats, and diarrhœa have come on. The real osteo-sarcoma, however, participates of the nature of cancer, and is apt to return after amputation, particularly if the lymphatic glands are affected Bark, hemlock, and mercury, have been recommended as internal remedies, though practitioners seem to depend little on them. Muriated lime, muriated barytes, or arsenic, will probably be more successful. The actual cautery has been used, it is said, with success; and issues, in the neighbouring parts, seem to have assisted the cure.

See Boyer on the Diseases of the Bones; Severinus de Recondita Abscessum Natura; Hamberger de Spina Ventosa; Senac Præfatio ad du Verney de Morbis Ossium; Ruysch, Epist. xiv.; Sue de Spina Ventosa.

SPINA'CIA, (from *Hispania*, its native country, supposed to be *olus Hispanicum*). COMMON SPINAGE, *spinacia oleracea* Lin. Sp. Pl. *α*. 1456, is only used at the table, and considered as containing only a small portion of nutritious matter; but if freely eaten, it is laxative, diuretic, and cooling. See Raii Historia.

SPINÆ CURVATURA, A DISTORTED SPINE, is not an uncommon complaint in early youth. It arises often from debility, in consequence of a variety of previous diseases, sometimes from blows, from indulging an inclined posture, occasionally from the weight of the superincumbent parts, when the height increases in a degree disproportioned to the strength. The first and last cause are nearly allied, and the effects are removed by tonics, by the cold bath, and frequently resting in an horizontal position. When local injury has occasioned the complaint, or when connected with a scrofulous habit, a different treatment is necessary; for which we are indebted to the judgment and sagacity of Mr. Pott: nor is this method exclusively confined to the scrofulous species; but may be often applied with success to that from debility.

The disease often begins with general languor, listlessness, and want of appetite; no particular part is apparently affected; but general debility is accused, and the common remedy is the bark. At different periods from the first appearance of languor, in the greater number of instances, the legs begin to fail. On standing the knees involuntarily bend forward, and in walking the legs cross. If the patient is then examined he complains of cramps occasionally in the thighs, of uneasy sensations, scarcely amounting to pain, in the legs, and at the pit of the stomach; the legs in sitting down are drawn up, and the power of motion and the sensation are soon lost. We say, "in the greater number of instances;" for these complaints occur only when the lumbar vertebræ are affected; but this, the most frequent and most important form of the disease, we shall first notice.

When the symptoms just described have assumed an alarming appearance, anxiety is usually alive to trace every concomitant circumstance, and some distortion is noticed in the spinal column. The curvature is most commonly, from within, outwards, but sometimes on one side. In the latter case, however, there is generally a double curvature; for if the first deviation is unnoticed, the patient, to relieve himself from an uneasy position, rests chiefly on the opposite side, and this posture produces the second curvature. Sometimes only a single vertebra starts from its place, sometimes two, but seldom a greater number.

The complaint originates from a disease of the cartilages and ligaments communicated to the bones; it appears to be the languid inflammation of scrofulous habits, and to terminate in caries. The starting of the vertebra from their proper line seems to be owing to the unequal erosion, and, of course, to the want of an uniform support.

While the state of the general health is attended to by general remedies, not only with a view to the debility, but to the scrofulous habit, the particular care of the surgeon must be directed to the curvature; and the best means of relieving it is the plan suggested by Mr. Pott, in procuring a considerable local discharge on each side, as near the curvature as possible, but beyond the spinal processes of the protruded bone. Tenderness in this case is cruelty, and the issue made either with the knife or the caustic should be large enough to contain a horse bean. If the curvature is considerable, the size of the issue should be increased. The discharge should be continued till the complaint is in a great measure relieved, and the degree of amendment may be judged of by that of the general health. During the continuance of the discharge, the complexion becomes clearer, the appetite is improved, the general strength is increased, sensation and motion are gradually restored. It has been supposed that the curva-

ture may be reduced by this measure: we dare not deny that it will not be lessened; but we have never found it so in any considerable degree. The chief effect is to relieve the inflammation of the bones and cartilages. We have indeed often seen palsy of the lower limbs recovered without any remedy, and we think that nature, by her own powers, may restore the sensibility and irritability, if not sunk by the languor and debility induced by scrofulous inflammation. The curvature may be prevented from increasing during the action of the drains, and possibly, at last, diminished by the ingenious machines of Mr. Sheldrake and Mr. Jones, which are constructed on the justest principles, and will not, like the former stays, swings, &c. add to the complaint. After the inflammation is checked, we have ordered, we think with success, the sea-bath, covering the issues with leather, secured by a margin of sticking plaster.

When the curvature is in the cervical vertebræ it is soon discovered, though it produces no very appropriate symptoms, as will be obvious when we recollect, that the cervical nerves are intimately united with the other nerves of the brain and spine in the ganglionic system. When the dorsal vertebræ are affected, besides the former symptoms, a dry cough, hectic fever and pain, dyspnœa, irregular or obstructed alvine discharges, are said to supervene. It must be recollected, however, that in this case the ribs and sternum, wanting their due support, fall down and contract the chest; nor will it escape the attentive observer, that the scrofulous habit, which induces the curvature, may also affect the conglobate glands of the lungs.

We have observed, that the utility of issues is not exclusively confined to curvatures of the lumbar vertebræ, connected with scrofulous habits. We have found them useful in cases of debility, where no such habit was discoverable, and if weakness and languor, connected with any curvature, does not soon yield to common remedies, the caustics should be employed; we have reason to think that any obstinate pain, or other complaint, which can be traced to any part of the spinal chain, may be relieved by the same means. We once attended a person who was said to labour under a lumbago; but the pain, on examination, appeared to be in the sacrum, where no curvature could, of course, be expected. It did not yield to any remedy, and the person, a robust farmer, could not at last turn in bed from debility. The caustics soon gave relief, and at last completed a cure, which might have been more readily obtained if he had sooner submitted to the plan, which was very early recommended. See Pott's Works; Earle on Distortion of the Spine.

SPI'NÆ in botany are the arms of plants to keep off cattle. They are supposed, but with little reason, to be abortive leaves. (See PLANTA.) We find them on the branches of thorns, on the leaves of the aloe and holly, on the calyx of the carduus, and on the fruit of the datura and chestnut.

SPINA'LES CO'LLI MINO'RES. See INTERSPINALES MUSCULI.

SPINA'LES LUMBORUM are some fasciculi which run up from the superior false spines of the os sacrum to the lower spinal apophyses of the loins, which may be styled *spinales lumborum majores*. The spinales minores lie between the spinal apophyses of the loins and transversales minores, between the transverse apophyses, which are sometimes of a considerable breadth.

SPINA'LES ARTE'RIÆ, arterior and posterior on each side, are produced from the vertebrales; each of which, as soon as it enters into the cranium, sends out a small branch, forming by its union the posterior spinalis. Afterwards the vertebrales advancing to the apophysis basilaris of the os occipitis, detach backwards two other small branches, which likewise meet, and, by their union, form the spinalis anterior. These spinal arteries run down on the fore and back sides of the medulla spinalis, and by small transverse ramifications communicate with those which the intercostal and lumbar arteries send to the same part.

SPINA'LIS CO'LLI rises, one on each side, from the spines of the seven uppermost vertebræ of the back, and is inserted into the spines of the five lower vertebræ of the neck. See SPINALIS MUSCULUS.

SPINA'LES DO'RSI MINO'RES are of two kinds: some go laterally from the extremity of one spinal apophysis to another, being often mixed with the short fasciculi of the spinalis major; the rest lie directly between the extremities of two neighbouring spinal apophyses, being separated from their fellows on the other side by the spinal ligament. See SPINALIS MUSCULUS.

SPINA'LIS DO'RSI MA'JOR, *semispinalis*, is a long slender muscle lying on the lateral part of the extremities of the spinal apophyses of the back.

SPINA'LIS MUSCULUS, and its fellow on the opposite side, rises tendinous from the spinal processes, and run to be inserted into the transverse processes. It is distinguished into *spinalis colli*, and *spinalis dorsi minor*; and goes in this manner as high as the spinal process of the second vertebra.

SPINO'SA. See SPINA BIFIDA.

SPINO'SUM SYRI'ACUM. See ALHAGI.

SPIRÆ'A FILIPE'NDULA, Lin. Sp. Pl. 702; DROP-WORT, grows wild in fields and marshy grounds: the root consists of a number of tubercles, fastened together by slender strings; its taste is rough and bitterish, with some pungency. It has been recommended as an astringent in dysenteries, immoderate uterine fluxes, &c.; as a diuretic, an aperient, and deobstruent, in scrofulous habits. At present it is totally disregarded in practice.

SPI'RITUS, SPIRIT; any attenuated volatile substance which exhales from bodies in a given degree of heat; and by an imaginary analogy, the nervous fluid hath been styled the *animal spirit*; a term which we may admit while it implies no peculiar qualities.

In botany it is that volatile part of the essential oil of plants to which their peculiar smell and taste are owing, and called *rector spiritus*.

In pharmacy the name is only, with propriety, given to the spirits obtained by fermentation, the general dangers of which, as indirect stimuli, have been sufficiently exposed. The same term is, however, also applied to oils, combined either with alcohol or water, in a state of vapour, by distillation. Different vegetables impregnate water and alcohol with different degrees of strength, and generally the watery spirits, as they are styled, are strongest, as the water admits of a greater heat before it rises; but, on this account, they have often a nauseous empyreumatic flavour.

The term *spiritus* is also added to many products.

Spi'ritus ætherеus, or vini ætherеus. See Æther.

Spi'ritus camphoræ tartareus, vel vini camphoratus. See Camphora.

Spi'ritus cochleariæ. See Cochlearia.

Spi'ritus cornu cervi; sal ammon, *cum calce viva;* sal ammoniacus compositus; volatilis aromaticus. See Alkali volatile.

Spi'ritus vini; *tenuis*, vel *rectificatus*. See Vinum adustum.

Spi'ritus salis marini; *coagulatus*, vel *Glauberi*. See Marinum sal.

Spi'ritus nitri; *Glauberi, dulcis, & ætheris nitrosi*. See Nitrum.

Spi'ritus volatilis fœtidus. See Asafœtida.

Spi'ritus ætherius vitriolicus compositus. See Liquor mineralis anodynus Hoffmanni.

Spi'ritus Mindereri, *aqua ammoniæ acetatæ*. See Alcali volatile.

SPISSAME'NTA. See Stymmata.

SPLA'CHNON. See Bryon.

SPLA'NCHNICA, (from *σπλαγχνον, a bowel*). Medicines appropriated to the diseases of the viscera.

SPLANCHNOLO'GIA, splanchnology, the doctrines respecting the different viscera.

SPLEN, vel LIEN. The Spleen, left liver of Hippocrates; bastard liver of Aristotle; *fomes ventriculi* of other ancient authors, implying that it warms the stomach; is situated in the left hypochondrium laterally, in the cavity between the false ribs and the spine. It is of a long oval figure, about seven fingers' breadth in length, and four or five in breadth, generally of a livid or black-red colour, and very lax, covered by the peritonæum. Its convex side is next the diaphragm; the concave broken by a longitudinal sulcus where the splenic vessels enter, dividing the spleen into an under anterior, and upper posterior part. The superior side is broader and more concave than the inferior, and is proportioned to the greater curvature of the stomach. The side below lies backward on the left kidney, and forward on the colon. The convex side of the spleen is turned towards the concave side of the diaphragm. The spleen has naturally two fissures, and these are often so deep that this viscus is said to be divided into two or three. Its bulk differs in different persons, wholly independent of disease; and the colour, which in adults is purple, is of a brighter red in infants.

The spleen consists almost wholly of blood, and it is apparently cellular, at least it appears so, when injected from the veins; but this structure is not perceived when the injection is thrown into the arteries. The variation has led to a suspicion that the seeming cellular structure is owing to extravasation; but it takes place regularly in the freshest spleens with very moderate force, and the artery may perhaps divide too minutely to admit of the passage of the injection. If this, however, be true, it will afford another instance besides the corpora cavernosa penis, where the office of absorption is performed by red veins, though their function is here also unnecessary, as no viscus is more plentifully supplied with lymphatics. In brutes they are particularly numerous and large. In oxen and sheep there are no venal ramifications, but only branching sinuses, except a small portion of venal trunk, perforated on all sides at the extremity of the spleen.

The aorta, when it has passed into the abdomen, sends off the cœliac artery, from whence the *splenic* proceeds. This artery is much larger than appears to be necessary for the nutrition of the viscus, and it wanders a little eccentrically over the pancreas, to which it gives branches, and behind the stomach, sending off branches to the latter, which, from their short course, are called *vasa brevia*. It then enters the concave surface of the spleen, dividing very minutely, most probably, as we have said, discharging its contents into cells, from whence the blood is taken up by the splenic vein, and carried to the vena portæ. The nerves of the spleen are small, and come from the plexus, formed of the posterior branches of the eighth pair and the great intercostal.

The spleen is connected with the stomach by a ligament and the vasa brevia; with the omentum and the left kidney; with the diaphragm by a portion of the peritoneum; with the beginning of the pancreas by the branches of the splenic artery; and with the colon, by a ligament. From these connections it is apparently much influenced. It rises and sinks in some degree with the diaphragm, is raised in its concave portion upwards and forwards, so that from a perpendicular it has almost a transverse direction, by the distension of the stomach, and varies also in its situation by different states of the colon. When the splenic vein is tied it is greatly enlarged, and the same distension is obviously apparent when the stomach is empty. On the contrary, when full, the spleen is small, and is found so in those who die sudden and violent deaths; while in persons sinking under lingering diseases it is unusually large. This organ has no excretory duct.

The use of the spleen has perplexed physiologists of every era, nor, after the inquiries of two thousand years, are we much nearer to the solution of the problem. Not to dwell on ancient fancies, that it was an equipoise to the liver, designed to keep the blood warm and fluid, or to assist in the generative function, we shall step on to the more modern ideas. We must premise, however, that it has been extirpated by Ruysch, Valisnieri, and others, without producing any inconvenience; that it has been found hardened, schirrous, ulcerated, &c. with few morbid symptoms, except dyspeptic ones. Even in the case recorded by Dr. Drake, in Dr. Duncan's Medical Journal, the cause of death was the compression of the spleen on the colon.

Mr. Hewson, who supposed the red particles to be flattened, and to consist of a solid nucleus and a vesicular part, supposed that the thymus gland furnished the central part, and the spleen the vesicular. In support of this opinion, he asserted that the blood in the splenic vein had a smaller proportion of coagulable lymph than other venous blood, and that the red particles of the splenic artery contained no central nucleus. The whole system, as well as its supports, are visionary, and contradicted by the observation of others. It would indeed appear that as we had no elaboratory for the red particles, they might probably be formed in a viscus, where their proportion is so considerable; but it would seem very singular, that they should be elaborated merely to be sent to the liver, and we find no duct by which they can be conveyed.

Another, and a generally prevailing, opinion has been that it assists the liver in the secretion of bile. This is indeed highly probable; but it is no exclusive assistant;

for all the vessels of the abdomen may be supposed to have a similar office, since, like the spleen, they send their fluids to the vena portæ. When these authors add, that the blood from the spleen is more alkalescent or putrescent, they assert boldly, instead of cautiously inquiring. Neither is true. The blood, from its colour, is more carbonated than the common arterial blood, and this may probably arise from its stagnation, in consequence of its slower circulation through the cells; but how the excess of carbon fits it for the better secretion of bile, those must explain to whom the mystery of this function has been revealed. We believe the principle to be true, though we doubt the elucidation, particularly as Dr. Babington, we are informed, has found that the bile formed, after the spleen has been removed, differs in no respect from that fluid in its usual state, notwithstanding the assertion of Morgagni and others to the contrary.

Others have asserted that the pressure of the full stomach on the spleen accelerates the circulation through it, supplying the liver with fluids when most wanted; and this opinion is supported by the fact formerly mentioned, that in those who do not die of a lingering disease the spleen is small. On examination, however, by experiment, every kind of compression was found to retard the motion of the fluids in the spleen, and this has suggested the more modern opinion, which we shall briefly explain.

We have before mentioned that the splenic artery, before it enters the spleen, sends off arteries to the pancreas, and to the stomach; the latter called, from their short course, *vasa brevia*. If then the motion of the blood be retarded in the spleen, a larger proportion will be conveyed through these vessels, and the stomach rather than the liver supplied with an additional quantity of blood. This opinion is, at the first view, attractive; but, on reflection, it must appear a very circuitous mode of supplying the stomach with blood, when the cœliac and the aorta are so near. The construction also of a complicated organ to give blood to different branches, merely in consequence of its compression, is by no means suitable to the usual simplicity of nature. If, too, the spleen is raised by filling the stomach, the course of the blood to it would be more direct, and the circulation through the vasa brevia less ready; to which we may add, that, in considering the process of digestion, we found no necessity for a considerable supply of fluids in the stomach itself. The food only undergoes in that organ a preparatory process, and the chyle is formed in what we have considered as a supplementary stomach, the duodenum. While the means of the supply are, therefore, objectionable, the supply itself appears to be without an object.

Dr. Rush's late opinion is apparently more visionary; but it gains force on reflection. He thinks that the spleen is a receptacle for an over-proportion of blood, to preserve more important organs from too great distension or rupture. He supports his opinion by various arguments: 1. *The size and strength of the artery*, which is much larger than the hepatic, though the liver is four times larger than the spleen, and stronger than the aorta, in the proportion of 1212 to 1000. It has only a single artery, and not, like the liver and other organs, one for its nutrition, and another for its secretion. The organ is also highly distensile, and Dr. Baillie found it to weigh eleven pounds thirteen ounces, without any deviation from its usual texture, figure, or colour. 2. *The situation of the spleen* near the heart, and in a part of the abdomen, where it may be, for a time, greatly enlarged without doing any injury to the neighbouring organs. We have added, "*for a time*," since, in the case quoted from Dr. Drake, death seemed to ensue from its pressure on the colon. 3. *The phenomena that take place in running, laughing*, from the shocks of a hard-trotting horse, &c. seem, in Dr. Rush's opinion, to support the same idea. The pain is commonly called the *spleen*, and if, in these circumstances, it is most commonly on the left side, it will be a strong confirmation of this doctrine. 4. *The quality of the blood*, which Dr. Rush contends is less coagulable than the rest of the circulating fluid, which is, he thinks, owing to the feeble action of the veins; but the premises have been denied, and the conclusion is evidently fallacious. 5. *The nature of the diseases* which produce obstructions of the spleen. These are intermittents and remittents of every kind, particularly, according to Morgagni, chronic fevers; to Proust, maniacal persons; and, as we have already remarked, all who die of lingering diseases. But these facts give only a feeble assistance to his opinions; for we have observed, that the pressure of the stomach diminishes the size of this viscus, and in all these cases the stomach is seldom distended, except with flatus. 6. *The diseases which most commonly follow* an inlarged or an obstructed spleen, viz. hæmorrhages. From Hippocrates to Lieutaud this connection has been observed, and it merits particular notice. 7. *The diseases which follow* the loss of the spleen, viz. flatulency, indigestion, headach, and an increased secretion of saliva, urine, and semen. These facts are, however, by no means well supported; nor, if admitted, would the consequence follow that these diseases are exclusively owing to fulness. Comparative anatomy does not afford Dr. Rush much assistance; for in animals the spleen is smaller, and of a more simple structure; yet their motions are more rapid. On the whole, however, this system seems more probable than any other, and may hold its place till superseded by that of a more enterprising theorist. We have not noticed one other office assigned to this organ by the same author, that of absorbing and suffocating undue impressions on the nervous system, as it has not the slightest support from argument or analogy.

Numerous diseases of the spleen have been discovered by dissection; but few, if any, have been connected with the previous symptoms. Of inflammation and enlargement of the speen we shall soon speak, as well as of its hernia (SPLENALGIA and SPLENOCELE). It has been found peculiarly small, suppurated, gangrened, cartilaginous (Columbus), ossified (Borelli), adhering to the liver or bladder, deeply indented, divided into two, sometimes three, distinct organs; in many instances wholly wanting (Hollerius and Kerkringius), occasionally filled with flatus, or quite empty. Had the previous circumstances of these cases been better known, the use of this organ might have been more completely ascertained.

SPLENA'LGIA, vel SPLENITIS, (from σπλην, *spleen*, and αλγος, *pain*). PAIN in the SPLEEN. We have included both diseases in one article, as the splenalgia, in its usual acceptation, is only a more languid inflammation of this organ, or the effects of it.

Splenitis is characterised by pain, tension, heat, and

tumour in the region of the spleen, with pyrexia; the pain increased by pressure; and it is said by the authors of the Stahlian school, who have been most attentive to the disease, to be ushered in with peculiarly violent shivering, succeeded by a most intense heat and intolerable thirst; the paroxysms generally assuming a quartan form. In general, however, inflammation of the spleen is attended with little distress, and is terminated often by hæmorrhage, frequently, it is said, from the left nostril.

The cure of the disease, if peculiar, has not been generally described. It must be treated, say authors, like hepatitis; but we are left uncertain how far laxatives, or how far mercury, may be employed. Blisters are indicated by the pain and tension; but as the spleen has no excretory duct, we can produce no discharge from it, and any discharge of bile will relieve the inflamed spleen only in proportion to the share which it has in filling the vena portæ.

The SPLENALGIA is the more languid chronic inflammation of this organ, often degenerating into a hard schirrous tumour, frequently of an enormous size, sometimes into a vast purulent or watery sac. It is called an *aguecake*, from its following intermittents, and is common in South America and India, from the bilious remittents of these climates. The general symptoms are, an uneasy, dull, tensive sensation on the left side, without fever. It is discoverable by a hard tumour occupying the seat of the spleen, and resembling its figure, attended with a sense of weight. The tumour is sometimes very large, often succeeds a quartan intermittent, and frequently terminates in ascites. The complexion is of a lead colour; the bulk, with atrophy, dyspnœa, a sense of weight, drawing downwards towards the left side, and oppression at the stomach after eating, sufficiently distinguish it. At last their feet become anasarcous, and ulcers of the legs frequently supervene.

A variety of remedies have been proposed for this disease, which we can scarcely suppose to have ever been essential. Nature has relieved it by a discharge of what was styled black bile; but more probably by the spleen concreting with the colon, and discharging its contents into that intestine. Pregnancy, and a purulent discharge from the uterus, it is said, have also relieved it.

The other remedies are purgatives, chiefly saline ones, hemlock, arnica, steel, mercury, which we can, however, find recommended by one author only; leeches applied to the anus, and a plaster composed of bryony. In one of the late volumes of the Asiatic Researches there is a curious account of the remedies employed by the native practitioners of that country. If we mistake not, the actual cautery was the remedy employed, which is mentioned by Hippocrates, and was successfully employed by Zacutus Lusitanus.

SPLENA'LGIA SUPPURATO'RIA. Inflammation of the spleen, tending to, or ending in, a suppuration.

SPLE'NIA, (from *splen, the spleen*). COMPRESSES, resembling the spleen in shape, made of lint, tow, and folded rags. Their principal uses are to guard against cold, to secure dressings under them, to convey and to continue the action of embrocations; to fill up inequalities and depressions; and to prevent the skin from being irritated by the stricture of the bandages.

SPLE'NICA. See SPLENALGIA.

SPLE'NICA ARTE'RIA. The SPLENIC ARTERY passes downwards, and to the left side, behind the upper edge of the pancreas, to which it gives branches: afterwards it divides into several branches, which enter the fissure on the inside of the spleen. Before they enter the spleen they give off the vasa brevia, the epiploica, sent to the omentum, and the gastrica sinistra, which is the largest of the vasa brevia.

SPLE'NICA VE'NA. The SPLENIC VEIN is one of the divisions of the vena portæ ventralis, running transversely from the right to the left, first under the duodenum, and then along the lower side of the pancreas near the posterior edge; in its course giving off several branches. It terminates after a winding course, and sending off several branches in the fissure of the spleen, where it divides nearly in the same manner as the splenic artery.

SPLE'NICA VE'NA BRA'CHII. See BASILICA VENA.

SPLENI'TIS, (from σπλήν, *the spleen*). See INFLAMMATIO SPLENIS, vel LIENIS. (See SPLENALGIA.) The name also of the vein in the left hand, called *salvatella*, while its fellow in the right hand is called *jecoraria*.

SPLE'NIUM, (from its efficacy in the disorders of the *spleen*). See ASPLENIUM.

SPLE'NIUS, (from its resemblance to the shape of the spleen), *triangularis*, and *mastoidæus superior*, rises from the ligamentum colli, a little below the first transverse line of the os occipitis, from the lower vertebræ of the neck, and five upper dorsal vertebræ, and is inserted into the posterior part and whole length of the mastoid process, and into the transverse process of the atlas and dentata, serving to bend the neck backwards. Albinus divides this into two muscles, viz. the splenius capitis, and the splenius colli; but this division is apparently unnecessary. See MASTOIDÆUS MUSCULUS.

SPLENOCE'LE, (from *splen*, and κήλη, *rupture*). A HERNIA of the SPLEEN, in which it passes through the relaxed divided parietes of the abdomen on the left side, or through the inguinal ring of the same side. It is discovered on the left side of the abdomen under the navel, the protuberance appearing to extend itself to the inguinal ring, and the spleen is perceived to extend itself from the region of the left hypochondrium into this tumour. It is distinguished by the parenchymatic firmness of the protuberance, and from the want of the signs which accompany an enterocele, epiplocele, and more particularly a hysterocele. These different situations constitute the two species of *splenocele*. See Nosologia Methodica Sauvagesii, vol. i. p. 209.*

SPLENT. A scale of flexible wood, or pasteboard, used by surgeons to support a fractured bone. The best are made of long narrow pieces of wood, glued on leather, which gives flexibility without injuring its firmness. The whalebone, sometimes used, is less convenient, as it is softened by the perspiration or the discharges.

SPO'DION. See SACCHARUM.

SPO'DIUM A'RABUM, (from σποδός, *ashes*), BURNT IVORY, *cinerulum, ebur*. Ivory is the substance of the tusks of elephants, which often grow to seven feet in length, and are of a proportionate thickness; one of them will sometimes weigh one hundred and sixty pounds. The African ivory turns yellow with keeping; the Ceylon ivory preserves its whiteness longer. The shavings are boiled in water, to form a jelly, which

resembles the jelly of hartshorn: the African ivory abounds most with oil and salt, the qualities of which are not different from those obtained from hartshorn. When ivory is burnt to blackness, it is called ivory black and velvet black.

Spodium abasir is a term also applied to burnt ashes, metalline calces, and a composition of white-lead and oil, called *putty*.

SPO'DIUM GRÆCO'RUM. See ALBUM CANIS.

SPOLIA'RIUM. See APODYTERIUM.

SPONDY'LIUM, (σπονδυλος, *vertebra*, from the shape of its root). See PASTINACA.

SPO'NGIA, (σπογγια). SPONGE, *besacher*, is a very bibulous, soft substance, full of perforations, and elastic, brought from Smyrna and Aleppo. Those pieces which are full of fine perforations are called *males*, and of these the hardest are styled *tragi*, the others *females*. See BESONNA.

The spongy mass is occasionally turbinated or tubular, lobated or branched, and the foramina are of an irregular figure. Its substance consists of horny or coriaceous, flexible fibres, crossing each other in a network, agglutinated together, covered in its natural state with a gelatinous matter, which appears sensible or irritable, and which soon disappears. It was the general opinion, from the time of Aristotle, that this was a vegetable substance, though previous to his era its animal nature was suspected. When corals were supposed to be animal, the analogy transferred the sponges to the animal kingdom also; an opinion confirmed by the odour exhaled in burning them. They are at present supposed to be the habitation of an animal, styled *polypus polymorphus*.

The perforations of a sponge are unequal in length and depth, and these, which are covered in their natural state with a gelatinous matter, are apparently the mouths of the animal, in which Mr. Ellis, so early as the year 1763, saw evident contractions and dilatations.

They are chiefly found in the Mediterranean, at considerable depths, fixed to the rocks, and are separated by divers. A man in those islands, the Archipelago, is not permitted, as Tournefort informs us, to marry till he has shown his skill in diving; but this occupation does not preserve them from the most abject poverty. When taken up, they are carefully washed in fresh water, and this is their only preparation.

The reproduction of sponges is very rapid, since rocks which have been exhausted are replenished again in two years. The finest sponges are the youngest, though some spots are supposed to furnish them of a superior quality. Abut fifty species are enumerated; but the characters of many are very uncertain. The common sponge is described by Mr. Ellis in the Philosophical Transactions, vol. lv.

The river sponge, found in the stagnant lakes of Europe, is brittle, without any of the qualities of the former. It is supposed to be formed also by a polypus.

Sponges are preferred to flannel, in applying fomentations, as they retain the heat longer; for tents to dilate wounds, for which purpose they are dipped in hot bees'-wax, pressed until cold, and then cut into proper sizes; for pledgets to be applied over the lint which is laid on the stump after amputating a limb. It adheres strongly to the mouths of wounded vessels, and when retained by proper compression, has been more efficacious in preventing hæmorrhages than agaric or puff-ball. It is useful also in scrofulous complaints, when reduced by lightly burning it to a black powder, which is given in doses from gr. x. to ℈i. two or three times a day; and its virtues seem to depend on a volatile alkaline salt, with which it abounds, joined with the oil of the sponge; but as the advantages have appeared wholly owing to the natron, this salt is generally preferred in the present practice. It has been particularly celebrated for removing that large swelling of the neck termed BRONCHOCELE, q. v.

If this remedy is preferred, to obtain it in the most active state the sponge is cut in small pieces, freed from the stony matters lodged in it, burnt in a close earthen vessel until it is black and friable, powdered in a stone or a glass mortar, and kept in a close phial for use. During the incineration it should be constantly agitated.

Except the bags of the silk-worm, more volatile alkaline salt is obtained from sponge than from any other matter. By boiling the sponge in water, it gives out a portion of sea-salt; by burning it to ashes, it yields a large quantity of natron. See Lewis's Materia Medica; Neumann's Chemistry.

SPO'NGIA SO'LIS. See BONONIENSIS LAPIS.

SPONGIO'SUM OS, (from its resembling sponge); the *os ethmoides*. The ossa spongiosa inferiora are two oblong bones lying loose between the anterior and posterior nostrils, glued to the upper maxillary bones, and convex towards the septum nasi, and concave on that which faces the sinus maxillaris. Each has two processes on their upper edge; the posterior covers part of the maxillary sinus; the inferior joining with the os unguis composes part of the ductus lachrymalis.

OSSA SPONGIOSA SUPERIORA. See ETHMOIDES OS.

SPO'NSA SO'LIS. See ROS SOLIS, and CALENDULA.

SPORA'DICI, (from σπειρω, *to scatter*). SPORADIC DISEASES are opposed to epidemics as accidental scattered complaints, neither general nor contagious.

SPRUCE BEER. An antiscorbutic drink, highly esteemed by the northern sailors, particularly the Newfoundland men, and esteemed useful in many cutaneous complaints of this climate, chronic rheumatism, &c. It derives its whole virtue from the turpentine. (See TEREBINTHINA and ABIES.) An extract of the black or white spruce is imported, two or three tablespoonfuls of which added to sixteen gallons of water, in which as many pounds of molasses have been previously dissolved, is fermented with a due proportion of yeast. When the fermentation is a little abated it is bottled for use, and, as this process still goes on, it soon becomes a very brisk, and not an unpleasant, drink. In America, Newfoundland, Sweden, Denmark, and Lapland, the branches of the spruce fir are boiled in the water previous to the fermentation.

SPU'MA ARGE'NTI, (from σπυω, *to spit up*). See CATHIMIA.

SPU'TUM, (from the same), whatever comes from the mouth by coughing. The sputum is sometimes tinged only with blood, sometimes wholly bloody, with at least an almost imperceptible mixture of mucus.

In chronic diseases of the lungs this sputum is highly dangerous, as it shows an impending hectic, or, in the

last stages of that complaint, a fatal debility. In PERIPNEUMONY, q. v., we have found it by no means dangerous, except perhaps in very old people; and the various changes of the sputum in that disease we have already mentioned. A salt sputum shows considerable debility, as the serum probably exudes unchanged. A bitter sputum seldom occurs but in jaundice; for this must be distinguished from a bitter taste in the mouth, which often arises from bile in the stomach. A sweet sputum is uncommon, if distinguished from the sweet taste in the mouth, already mentioned (see SALIVA); the purulent and fetid both arise from purulent matter (see PHTHISIS). Portal has observed the sputum sometimes black, which he attributes to a stain from the bronchial glands, or from their substance. It is sometimes calculous; occasionally worms have been discharged with it; polypous or membranous substances have been also evacuated in this way.

See Weber de Signis ex Sputo; Rinck de Sputo ut Signo; Oribasius; Hebenstreit de Sputo Critico.

SQUA'LOR. See AUCHMOS.

SQUA'MÆ, (from σκαπτω, *to excavate*). SCALES. Laminæ of morbid cuticle, hard, thickened, whitish, and opaque. They have at first the figure and extent of the cuticular lozenges; but afterwards often increase into irregular layers, denominated crusts. Both scales and crusts repeatedly fall off, and are reproduced in a short time.

In botany it means a narrow pointed leaf, at the base of the calyx of some flowers, resembling a scale.

SQUI'LLA CRA'NGON. See CRANGON.

SQUINA'NTHUM, (from its use in *quinsy*). See JUNCUS ODORATUS.

STA'CHYS, (σταχυς, *a spike*; from its spicated stalk and seed). See MARRUBIUM VERTICILLATUM.

STA'CHYS FŒTIDA. See GALEOPSIS.

STA'CHYS PALUSTRIS. See PANAX COLONI.

STA'CTE, (from σταζω, *to distil*). See MYRRHA.

STA'CTICON. See ENSTACTON.

STA'GMA, (from σταζω, *to distil*). A liquor exposed to distillation; as well as a name for the *acidum vitriolicum*.

STAHLIAN SYSTEM. If any medical author possessed, in a very superior degree, an acuteness of perception, extensive knowledge of his own science, an imagination and fancy peculiarly active, discovering the most distant and unsuspected relations, it was George Ernestus Stahl. His name is now confounded with the visionary philosophers, by those to whom his fancies alone are known, or to whom his metaphysical writings only are familiar; for he was an acute but an eccentric metaphysician, and his language is peculiarly intricate, often unintelligible. This, however, arises from the minute accuracy of his distinctions, and from the strict logical form of his reasoning. He first pointed out the phenomena of a living organised machine, distinct from a series of tubes propelling fluids mechanically; or, in other words, the peculiar laws of animal life. He first showed how health or diseases depended on a due balance of the several movements of the living machine, or a disturbance of the equilibrium: in fact, he laid the foundation of the nervous pathology of Cullen, who, however, we suspect, received it at second hand from Hoffmann.

When the university at Halle was founded, in 1694, he was chosen professor there at the age of thirty-four, and was a colleague with the laborious Hoffmann. The brilliancy of his genius soon enlightened every branch of science which he undertook to teach; and though rivalled in industry by Hoffmann, and confuted in the field of metaphysics by a philosopher, to whom it was no discredit to yield, Leibnitz, he continued his brilliant career to the seventy-fifth year of his life. His chemical labours we have already appreciated, and of his metaphysics it is not our province in this place to speak. But a pleasant outline of his whole system may be found in a highly humorous little work, entitled "The Vision," appended to the chapter on "the Mundane Soul," in the "Light of Nature pursued," by Mr. Abraham Tucker, under the assumed name of Edward Search. His medical works are a Collection of Theses, in six volumes, quarto, which, as we have often had occasion to remark, are in the foreign universities, the work of the masters. In these he displays his system in distinct disquisitions; but the chief foundation is contained in those entitled De Motu Tonico, et Æstus Maris Microcosmici. It was our intention to have given an abstract of these two theses; but the labour and space would, we found, have been misapplied. We *have* indulged in subjects of curiosity; but these, we fear, would not have been considered as such. The outline of the whole is published in a work well known, his "Theoria Medica Vera," which appeared in 1734; and in his "Negotium Otiosum," published at Halle in 1720.

It does not appear that there was any great cordiality between the rival professors, Hoffmann and Stahl; but a studied civility seems to have prevailed, and Hoffmann, in more than one instance, copies from Stahl. Indeed, whatever relates to the living principle in the works of the former is evidently borrowed from his colleague. The spasmus periphæricus is only another term for the motus tonicus.

The leading principle of the "Theoria Medica Vera" is the superintending power of the immaterial principle, which he carried so far that he almost leaves it in doubt whether the fœtus does not form itself by its own volition. At least he contends that the mind actuates the body not only by willing the *end*, but the means, so that not only every distinct muscle is moved by the particular volition referred to that muscle, but that digestion, the peristaltic motion, and the several secretions, are influenced by the same will, especially directed to the respective organs. He certainly was goaded on by his controversy with Leibnitz, whom he never condescends to name, to this absurd extent; but that the superintending power of nature is directed to remedy any deviation from a state of health, or to restore any injured part, is generally acknowledged. The difference, however, is, that modern authors consider these efforts, which they style the *vires medicatrices naturæ*, as the effect of organisation, or of pre-established associations, while Stahl contends that they arise from the immediate influence of mind conscious of the error or defect, and willing the motions necessary for the correction or supply. We certainly have no evidence of such mental exertion, and in the simplest cases of volition we see this principle directed only to the end, apparently without any view to the means.

While nature was thus constituted the presiding

power, art must be apparently useless. It were presumptuous to attempt assisting a principle so sagacious and powerful; and indeed the practice of the Stahlians, directed to allure or appease this "divinity that stirs within us," was peculiarly inert, and often absurd. The state of the abdominal viscera they particularly attended to, and to prevent infarctions they were anxious to promote the discharge of the hæmorrhoids. From this fancy of Stahl the practice extended to Germany, and was too popular to be overlooked by the celebrated eclectic Boerhaave.

The opinions of Stahl have been long neglected in this country, and the few facts which we have here collected may now appear to wear the garb of novelty. The language, however, of this system has unfortunately become fashionable. Its era commenced with Mr. J. Hunter, to whom anatomy and physiology are greatly indebted, but who has considerably injured both by the most unscientific expressions. To take on diseased action, as we have already remarked, can mean no more than to be diseased, unless we adopt the principles of Stahl; and many such expressions are common in his works. His followers have assumed a more extensive liberty, and it is not very uncommon to hear of the exertions of the constitution "alarmed" by some impressions, *taking on* actions in consequence of such alarm; and even the blood coagulating from some supposed sense of the necessity of the change. A late work of merit, Adams on Morbid Poisons, contains much of this exceptionable language.

The followers of Stahl have been peculiarly happy in their arrangements, and Juncker and Nenter have given tabular views of diseases and remedies, according to the views of their master, which may still be consulted with advantage. The last English work, according to this system, if we except those of Mr. Hunter and Mr. Adams, was Dr. Nichol's Anima Medica, though several traces of the same doctrines may be discovered in the Edinburgh Medical Essays.

STA'MINA, in botany, (*sto, to stand*, from their upright posture), *chives*, are those upright filaments which, on opening a flower, we find within the corolla surrounding the *pistillum*, said by Linnæus to be the male organs of generation, whose office it is to prepare the pollen. Each stamen consists of the filament and anthera.

In medicine *stamina* mean the degree of strength and vigour in the constitution; a term often confined to the primordial fibrous structure.

STA'NNUM, (from its resembling *στίμμι, antimony*). TIN, *plumbum candidum, diabolus metallorum*, because when incorporated with other metals they are not reduced but with the greatest difficulty; *Jupiter, acalcum, acazdir, allence, alnec; caldar; cydar; dikalegi;* is the lightest of all the metals, less fixed in the fire, soft, flexible, and malleable, though it increases the elasticity and sound of other bodies. Its specific gravity, when hammered, does not exceed 7.299, and its hardness 6. It has a strong disagreeable taste, and emits a strong odour when rubbed.

Tin is very malleable, and capable of being hammered into leaves of which two thousand would only be an inch in thickness; but it is not required of such tenuity in the principal manufacture in which it is employed, silvering looking-glasses, and the foil seldom exceeds $\frac{1}{1000}$ part of an inch. It is extremely ductile and tenacious; for a wire $\frac{2}{25}$ of an inch in diameter will support thirty-one pounds. It melts long before ignition, at a heat of about 416° of Fahrenheit, and in melting it crackles.

Tin, exposed to heat in an open vessel, is soon covered with a grey oxide: in a more continued heat it becomes white, and is then styled *putty*. The metal ignites in a very high temperature, if exposed to the air, and becomes a fine white powder, which may be obtained in crystals. The metal itself, carefully cooled, crystalises in the form of a rhomboidal prism. M. Proust, in the Annales de Chimie, xxviii. 213, has shown, that tin can combine with two different proportions of oxygen, forming the yellow and white oxides. The yellow, formed by a precipitation from its solution in dilute nitric acid, by pure kali, contains twenty parts of oxygen in one hundred. The white is procured by heating tin in concentrated nitric acid, and contains twenty-eight parts of oxygen. It is the same also apparently with the white oxide procured by heat. Tin combines with sulphur and phosphorus; but not with carbon, hydrogen, or azot. The sulphuret of tin is the aurum musivum, sometimes applied to the rubber as an assistant in exciting electricity. Neither the sulphuret nor phosphorat of tin is used in medicine.

The combinations of tin with other metals produce some unexpected consequences. It increases the hardness, tenacity, and fusibility of copper, while it diminishes its ductility. The specific gravity of the alloy is greater than the mean density of the two metals, and the specific gravity increases with the proportion of tin. Cannon and bell metal, bronze, and the mirrors of telescopes, are made with different proportions of these metals, as well as the cutting instruments of the ancients, which rendered tin so particularly valuable to them. This metal is also used to defend the copper vessels from the action of corrosive fluids; but it is so thin, that it soon wears off, and its state should be from time to time examined. A vessel nine inches in diameter, and three inches three lines in depth, was found by Bayen to retain only twenty-one grains of tin. Pins, tenter-hooks, and various iron and brass instruments, are whitened by tin. The English tin is yet unrivalled; that of Malacca comes next to it.

Sulphuric acid, when heated, does not dissolve tin; but forms a peculiar substance styled an oxy-sulphat, from which the oxide is soon precipitated. If not heated, or if tin with a minimum of oxygen be used, a sulphat of tin is formed, which crystalises in needle-like crystals. With the sulphurous acid it is partly precipitated, in the form of a sulphuret partly dissolved.

Nitrous acid oxidates tin; but forms with it a very slight union. When the solution is concentrated the oxide separates. The nitric acid will not dissolve it.

The muriatic acid dissolves tin freely; and Proust has shown that the water of the acid is decomposed in the solution, the oxygen combining with the metal, and the hydrogen flying off in a fetid vapour, which he thinks owing to the arsenic. The rest of the arsenic is deposited in the form of a black powder. This acid combines with both oxides of tin. Muriat of tin is a yellowish fluid, yielding, on evaporation, small needle-like crystals, soluble in water, slightly deliquescent, and of a specific gravity of 2.29. This salt attracts oxygen from almost every body.

The oxymuriat of tin has been long known by the name of the *smoking liquor of Libavius*. When an amalgam of tin, consisting of two parts of this metal and one of mercury, is triturated with equal parts of an oxymuriat of mercury, and distilled with a moderate heat, some water first comes over, and then a white vapour rushes at once into the receiver, condensing into a transparent liquid, which smokes only when the bottle which contains it is opened. The smoke is occasioned by this volatile salt combining with the air. When it stands over water it crystalises on the side of the jar. When thrown into water, it produces heat and dissolves, if the quantity of fluid is sufficient: seven parts of water, mixed with twenty-two of fuming muriat, condenses into a solid mass. Oxymuriat of tin dissolves an additional quantity of the metal, and thus becomes common muriat as the additional oxygen is seized by the metal. It is the oxymuriat of tin which is used in dying scarlet, or tin dissolved in the nitromuriatic acid.

The other acids have no particular action on tin, or the compounds have not been sufficiently examined. At least, with the exception of the acetous, they form no part of our present object. The acetous acid acts slowly on tin, oxidating and dissolving, even when assisted by heat, only a small portion of it. When this acid is in the state of vinegar, it was supposed that it might dissolve a portion of the lead usually contained in tin, and some experiments were made by Vauquelin directed to this purpose. (Annales de Chimie, xxxii. 243). He found that the acid, only where with the metal it was in contact with the air, dissolved a small portion of the tin; but if the latter exceeded the lead in the proportion of one-sixth, none of the lead was dissolved. The acetous acid, boiled with tin, dissolves it (Morveau), and forms crystals, though the experiment has not succeeded with other chemists.

Tin seems to have very little action on the human body, though there is reason to suspect that, like other metals, it possesses a tonic power. It has been given in chorea and epilepsies; but later authors have limited its effects to those cases which apparently depend on worms. The justice of this decision we cannot appreciate. In diseases of the lungs and uterus it has been also recommended, chiefly, we believe, from the high commendations of the *antihectic of Poterius*, which contains a calx of tin, with a very inert oxide of antimony. This boasted remedy is said by Vogel, Hoffmann, and others, to be highly serviceable as a diaphoretic, and antiscorbutic; to be useful in malignant fevers, hysteria, and chincough. It is certainly a medicine of little active power, and has been long neglected. The *magisterium jovis* is a calx of tin, precipitated by an acid. It has been given in a dose of four grains in hysteria; and applied externally in cancer, foul ulcers, and fistula.

The *bezoardicum joviale* is a most complicated, but inert, formula, and seems in the result to be only a calx of tin, as, during the deflagration, the mercury will be dissipated, and the antimony rendered wholly inert. It is, however, highly commended in disorders of the lungs and of the womb: but, like every other preparation of tin, strongly reprobated by Stahl, Boerhaave, and others. (Trilleri Dispensatorium Universale, vol. ii. p. 11 and 110).

The *crocus jovis* is an amalgam with mercury, from which the latter metal is expelled by heat, leaving apparently the tin partly oxidated. It is used externally in cancers and foul ulcers; internally it is recommended in lues, the plague, as a diaphoretic in gout, &c.; but, like the former preparation, suspected, and often reprobated.

The *sal stanni* or *jovis* is an acetite of tin, to which nitre is sometimes added, and it is recommended in diseases of the uterus. The *pillulæ dominarum*, used for the same purposes, contain also this salt. The *sudorificum magnum Fabri* is only a calx of tin.

We have pursued this subject more minutely than its importance merits, and have followed the praises and censures of this remedy in the original authors to some extent. We will not employ the time of our readers to so little purpose as we have done our own. The result is, that tin, as a remedy, is commended or reprobated rather from prejudice than experience, and that its admirers and enemies have, in few instances, spoken from observation of its real effects. It appears to us a tonic of no considerable powers, and we find little real support of its uterine or diaphoretic virtues. Its sensible effects are inconsiderable.

In later periods filings of tin have been recommended by Dr. Alston for destroying worms, particularly the tænia, in doses of from two drams to an ounce, in treacle. It was suspected that these act by the arsenic often contained in tin; but the purest metal is equally effectual, and it is now supposed that their power is wholly mechanical.

Tin when heated becomes so brittle, that by agitation, when just ready to melt, it may be shaken into a fine powder. The pulvis stanni is made by first melting the tin, then pouring it into a box, and agitating it violently till cold; part of the tin becomes a fine gray powder, and by a repetition of the process the whole of the metal is thus changed; but the tin is more easily powdered by triturating three parts with one of coralline. Doses of this, from ten to thirty grains, may be given twice a day, and, after repeating it for six or seven days, a brisk purge may be administered with great advantage in worm cases. If this remedy be again tried, the pulvis stanni, or the acetis stanni, appear to be the most promising preparations, and we have great reason to suspect that either would be a valuable medicine in those states of irritability which constitute what are styled nervous diseases. See Lewis's Materia Medica; Neumann's Chemistry; Albrect de Medicamentorum Saturninorum et Jovialium Natura et Usu.

STA'PEDIS MU'SCULUS, (from *stapes*), lies in a little cavity of the os petrosum, and is inserted into the head of the stapes.

STA'PES, (*in quo pes stat*, because it resembles a *stirrup*), stands with its basis upwards and inwards upon the fenestra ovalis, and at its narrower part is articulated with the inside of the long process of the incus. See AURIS.

STAPHISA'GRIA (σ̀ταφις αγρια, from its leaves resembling the *wild vine*); *alberas, pedicularis, pedicularia, phtheiroctonon, delphinium plantani folio, aconitum urens ricini fere foliis flore cæruleo magno*, STAVESACRE, LOUSEWORT, PALMATED LARK-SPUR, *delphinium staphisagria* Lin. Sp. Pl. 750, is a plant with large

leaves, and blue flowers, followed by pods containing large, rough, triangular, dark-coloured seeds; a native of the southern parts of Europe, from whence the seeds are brought to us.

The seeds have a disagreeable smell, a nauseous, bitter, burning taste; and if taken in doses from ten grains to a scruple, they purge and vomit roughly, inflaming often the throat and stomach; but they are chiefly used to destroy lice. Their acrimony is partially extracted by water, totally by rectified spirit, though not raised by either in distillation. Neumann obtained from 480 parts 45 of alcoholic extract, with 90 parts of fixed oil, and 44 of an insipid watery extract. Inversely he obtained 95 watery and only one part of spirituous extract, with 71 of oil. Decoctions of the seeds have been used for curing the itch; but for destroying lice, &c. the fine powder is strewed on the part, and secured with a proper bandage. If the decoction is more convenient, an ounce may be boiled in a pint of water for a few minutes. The powder may be mixed with oatmeal to kill mice and rats. See Neumann's Chemistry. Lewis's Materia Medica.

STAPHYLI'NI, (from σταφυλη, *the uvula*), *azygos Morgagni*, divided by Winslow into *staphylini* and *epistaphylini*, as in some subjects they are distinguished by a very fine white line, but in general they form only one muscle, which is fixed by one extremity in the common point of the posterior edges of the ossa palati, and from thence run downwards and backwards along the middle of the septum, and also along the middle of almost the whole uvula, adhering to the tendons of the circumflexus. It is inserted into the tip of the uvula, which it contracts or raises upward and forward.

STAPHYLI'NUS EXTE'RNUS. See CIRCUMFLEXUS PALATI.

STAPHYLI'NUS GRÆCORUM, and SYLVESTRIS. See DAUCUS VULGARIS.

STAPHYLO'MA, (from σταφυλη, *a grape*), comprehends two disorders of the eye; one in which the cornea is gradually rendered protuberant; the other, when the iris bursts through the tunica, deforming it with a tumour, like a grape, and destroying the sight. These tumours, from their different forms and sizes, are styled *margarita, myocephalon, clavus, mylon, pomum, uva*, or *acinus*. The cornea is rendered protuberant by a thickening of its coats, or by a collection of water behind it, and in the former case the staphyloma is either total or partial, and in the latter it is transparent. The protuberance is sometimes owing to little fleshy tubercles about the size of a pin's head, and occasionally this species is combined with ulcers, ectropium, &c. There is sometimes a dark blue tumour on the sclerotic, which arises from a prolapsus of the choroid, which penetrates through the laminæ of the sclerotic when the constitution is greatly debilitated. The sclerotica is also sometimes swelled, with great pain and violent inflammation, which frequently ends in a suppuration, or a cancer. Mons. St. Yves proposes to extirpate the tumour, and then dress with lint dipped in brandy and water; after which the artificial eye may be fixed. If the case is slight, compresses of alum-water may be laid on, and the patient should lie continually on his back. More active stimuli have been applied to excite absorption, or to destroy the tumour. Janin mentions the butter of antimony, soothing the pains by alternate bathing with milk in which saffron had been previously dissolved; another author has advised a ligature previously impregnated with arsenic. Archigenes, as we are informed by Galen, recommended the juice of cantharides; Richter the lapis infernalis; Rowley the spiritus nitri fumans. A thread has been passed through it by Fabricius; and issues have been recommended in the neighbourhood. Celsus observes that the species of staphyloma called *clavus* is a callous tubercle on the white of the eye, and takes its denomination from its figure. He advises it to be perforated to the bottom of the root with a needle, to be cut out, and then dressed with lenients. Compression is generally injurious. The cure is not in general undertaken to recover the sight, but only to remove the deformity and the bad symptoms. See OPHTHALMIA; Bell's Surgery, vol. iii. page 313, &c.; White's Surgery, p. 232.

STAPHYLO'SIS. A protuberance or protrusion of the choroides of the eye. See STAPHYLOMA.

STATICE, (from στατιζω, *to stop*, from its astringent properties). *Statice limonium* Lin. Sp. Pl. 394. See BEHEN RUBRUM.

STATIONA'RIA FE'BRIS. Sydenham applies this epithet to fevers which owe their origin neither to heat, cold, dryness, nor moisture, but rather depend, as he supposes, on a certain secret and inexplicable alteration in the bowels of the earth, impregnating the air with deleterious effluvia, but which after a certain period of years declines and yields to another. Each of these general constitutions is attended with its own proper and peculiar kind of fever, which never appears in any other. A late author, Dr. Webster, with more industry than judgment has endeavoured to show that all extensive epidemics are owing to such effluvia in consequence of earthquakes, volcanos, &c.

STA'XIS, (from σταζω, *to distil*). See APOSTAXIS.

STEATI'TES, (from στεαρ, *fat*). See POLYSARCIA; and CIMOLIA ALBA. In modern systems of mineralogy it is a magnesian earth, though it contains 0.80 of flint, and only 0.17 of magnesia, with two of argillaceous earth, and one of iron.

STEATOCE'LE, (from στεαρ, *suet*, and κηλη, *a hernia*). See HERNIA SCROTALIS.

STEATO'MA, (from στεαρ, *suet*). A WEN. (See NÆVUS.) Its contents resemble suet: it does not yield to escharotics; but if inconvenient must be removed with a knife.

Steatoms are found in almost every part of the body. Fabricius describes one of twenty-six pounds on the scapula, and Rhodius one of sixty pounds between the scapulæ. In the Medical Commentaries, i. 219, and in the Philosophical Transactions, No. 61, are instances of similar tumours adhering to the stomach and liver: Dr. Parsons, in the Philosophical Transactions, also describes one of a considerable size attached to the head. A case is recorded where such a tumour grew so large as to obscure the sight, and considerably distort the features. It is unnecessary to pursue the enumeration farther, nor can we take one step in the pathology. The matter is the sebum, and the tumour apparently originates in the sebaceous glands. Yet we can scarcely believe it possible for them to admit of such considerable distension; nor can we trace any remote causes by means of which the accumulation of such a quantity of this secreted fluid can be collected. The only one which has been noticed is a blow, which, we know,

may produce languid inflammation, and increase secretion in general. (See TUMOR.) Extirpation is the only effectual remedy, though a curious case is recorded by Kaltschmid of one having been diminished by a deficiency of food. Mercury is recommended by Bartholine.

The sebaceous humour of the steatom, according to Mr. Hill (Cases in Surgery, p. 56), generally undergoes no alteration for a great number of years, except a gradual increase in size. In general, all encysted tumours, when small and properly situated, may be turned out entire, without opening the cyst, by a cross cut through the teguments, and by raising up the four corners. In another case he made a circular incision to the cyst, round the body of the tumour, and gradually raised it up, while he dissected it out of the teguments below. Notwithstanding this precaution, the skin and flesh retired further than he intended; so that when the dressings were taken off, he put two or three stitches into the teguments, which hastened the cure, although the lips were not brought fully into contact. Hence we may learn, he adds, "that it is not sufficient to make the incision some way up on the body of the wen; but it should be pressed down, and the teguments pulled back as far as possible, before the incision be made, as is practised in amputations; otherwise they will not cover the wound. I have had the satisfaction to digest out some wens, when so situated as not to be extirpated, by running a seton cord through the length of them, and continuing it many months. But care must be taken to pierce the cyst at the bottom, otherwise the seton may cut through the top of the wen, and leave the under part untouched." See Bell's Surgery, vol. v. p. 457, &c.

Richter endeavours to show that complaints of this sort may sometimes be occasioned by the deposition of morbific matter from within, and that their extirpation in such cases is often productive of bad consequences, occasioning a translation of the morbific matter to other parts. "A patient had her hand taken off on account of a very large steatomatous tumour which had rendered the bones carious; when the wound was almost healed, one of the axillary glands, from the arm from whence the hand was amputated, swelled, and became very painful. About three weeks after, though the wound was healed, the tumour burst, and the patient was affected with violent rheumatic pains, particularly in the thighs. An issue was made in the same arm, and the internal use of aconitum and antimony recommended. The patient, however, grew worse; an uninflamed indolent tumour appeared about the clavicle, and another on the upper part of the arm. The patient became hectic, with incipient blindness and frequent cold sweats, and died very soon after, emaciated and exhausted."

STE'LLA. A STAR. The name of a bandage used in arteriotomy, so called from its numerous crossings on the temples: it should be twenty or twenty-four feet in length, two fingers broad, and double headed. When this bandage is used, the wound must be covered with proper compresses, the middle of the roller placed on the sound temple, one end brought round the occiput, and the other round the forehead, until they meet at the part affected. They there in crossing form a kind of knot; one end is then carried over the vertex, the other under the chin; and crossing again, over the sound temple, they are carried round the forehead and occiput, to the compresses on the wound, &c. until all the bandage is taken up.

STE'LLA MARI'NA. See ASTER THELASSIUS.

STE'LLA TE'RRÆ. See CORONOPUS.

STELLA'RIA, (from the *star-like* disposition of its leaves). See ALCHIMILLA.

STELOCHITES. See OSTEOCOLLA.

STEPHYLA; the husks of grapes, which remain after pressing out the wine; and the olive cakes when the oil is separated by expression.

STERI'LITAS, (*sterilis, barren*), is that state of the female constitution which prevents conception, or soon destroys the connection between the mother and embryo; for in man it is styled IMPOTENTIA, q. v. The second effect is, we think, the most common, though it has seldom been considered as a part of the subject: it is certainly that which is chiefly within the reach of medical assistance.

It is unnecessary to observe, that, for the continuation of the species, the female organs, particularly the ovarium and uterus, must be perfect, that no obstruction either take place from the labia to the uterus, or from the latter through the Fallopian tube. The vessels of the uterus must also admit of their menstrual dilatation, and be capable of yielding readily to the impulse. It must be obvious that a defect in either portion of this series of organs will prevent conception; but such is the anxiety of nature for the continuation of the species, that any organical imperfection is comparatively rare. In other respects conception is apparently prevented by the want of that excitement which is necessary to raise the fimbriæ of the Fallopian tube in order that they may grasp the ovarium, and convey the embryo to the uterus. This perhaps is a more common cause than is suspected. It certainly is the reason why common women, whose passions are rarely excited, do not usually conceive; and it is the reason why forced violations are seldom fruitful, sometimes perhaps why the offspring of forced marriages are seldom numerous. When from a peculiar conformation, the sexual connection is attended with violent pain, conception, as may be expected, seldom follows.

The causes, however, which soon destroy the connection between the mother and the embryo most commonly occasion sterility, and they are referred to this head, because it is not ascertained that conception has taken place. A profuse leucorrhœal dischage is one of the most frequent causes of this kind; and we mention it in the first place because it sometimes occasions the deficient excitement just described. It does not, however, always produce this effect; for women subject to considerable and constant leucorrhœal discharges have had, within our own observation, numerous families. A more frequent cause is mænorrhagia, where the discharge, recurring in great violence after a short period, destroys any connection that may have been formed. Women in general reckon about the midway between the last evacuation and the period of the expected return; and if the return is slight, short, and without pain, they consider impregnation as having taken place about six or eight days only before the period of this short appearance, which they style a *show*. In this climate the menstrual discharge is by no means inconsistent with impregnation; but it is only the short imperfect evacuation, which apparently comes only from some portion

of the uterus: every considerable discharge destroys the newly animated embryo by separating it.

Painful menstruation is another cause. The pain we have found to be occasioned by a spasm on the vessels of the uterus, which is often communicated to the uterus itself. It will be obvious that the commotion excited by these spasms must separate the weak attachment so newly formed.

A nervous irritable woman, subject to agitation from common accidents, is seldom known to conceive; for the embryo is soon separated in the first periods of its existence. But when we consider all the causes just mentioned, we sometimes find sterility where neither is known to exist, and we believe it more often depends on impotence than female diseases or defects. The mode of treatment in these various circumstances has been explained under the proper heads. See MENSES, LEUCORRHŒA, and HYSTERIA.

There is no subject on which authors of every age have been more fertile; and having given this general abstract of the subject, we shall shortly notice some of their opinions, perhaps their fancies.

Besides the causes we have enumerated, we find sterility attributed to hard and to chalybeate waters; to the topical uses of aluminous embrocations; to diseases of the spleen and omentum; to poisons; premature venery; to the use of paint, and the immoderate drinking of coffee. These may be admitted as remote causes when they injure the state of the general health. The remedies particularly mentioned are truly ridiculous, and we can select only, as general ones, change of air, mineral waters, and perhaps occasionally bleeding.

For the organical effects, see Morgagni de Sedibus et Causis Morborum, Ep. xxvi. 13, xlvi. 4, &c. lxvii. 9, 11, &c. xlvi. 14, 15, 16, 17, 19, 20, 23, 24, 25, 26; Walter de Morbus, perit. 9, 11; Fabricius Hildanus, cent. i. obs. 65; Mauriceau, ii. 345, 366, 484; Bosc de Scrophulis Uteri; Peyer Mericologia, p. 48; Buckner Miscellanea, 1727.

Mercatus de Morbis Mulierum; Eyselius de Sterilitate Sequioris sexus; Stahl de Sterilitate Mulierum; Ætius, Tetrabib. iv. Serm. iv. c. 16, 26, 56.

STE'RNO-CLEI'DO HYOIDÆ'US. This and the following terms of muscles are derived from sternum, and the places of their insertion. See STERNO-HYOIDES.

STE'RNO-COSTA'LES. See TRIANGULARES STERNI.

STERNO-CLEIDO-HYOIDÆUS; because it arises also from the clavicle.

STE'RNO HYOI'DEUS, is a long, flat, thin muscle placed obliquely between the sternum and os hyoides, behind the lower part of the mastoidæus, and covering the sterno-thyroidæus and hyo-thyroidæus. It rises from the inside of the sternum and clavicle, and by short tendinous fibres, from the cartilaginous part of the first rib; ascends along the fore-part and side of the neck, where it unites with its fellow in a white line. Each then runs over the thyroid cartilage, is inserted into the base of the os hyoides to pull it down.

STE'RNO MASTOIDÆ'US, MASTOI'DES. See MASTOIDÆUS, and STERNO-HYOIDES.

STERNO THYROIDÆ'I, rise between the cartilages of the first and second rib; run before and close to the thyroid gland and the trachæa; and are inserted into the knobs of the thyroid cartilage, pulling the whole larynx down.

STE'RNUM, (στερνον, Greek); *pectoris os*, is the broad, flat bone, at the anterior part of the thorax. In adults of a middle age it is composed of three bones, but frequently the two lower bones are ultimately united; and sometimes all the bones are united, showing by lines the former separation. The first bone is the thickest, to which the clavicles and the first ribs are articulated, and half the cavity for the reception of the second. It is heart-shaped, but does not end in a point. The second bone is longer, narrower, and thinner than the first; and in the sides of it are complete cavities for the third, fourth, fifth, and six ribs, and half of the cavity for the second and the seventh. The third bone is the least, having only half of the cavity for the seventh rib. The lower part of the sternum is called *ensiformis cartilago*. It is of different shapes, sometimes bifurcated, and almost always in part so, and in young subjects always cartilaginous.

Near the middle in the prepared bone a perforation is discovered, filled in the recent one by cartilage and ligament; and in this part is a transverse line, which has led authors to divide the bone into two imaginary portions; but in young subjects some motion between these parts is observable. When we look at the different parts in their united state, we find this bone broadest and thickest above, concave within, but flatter in front, from the sides being pressed outwards by the ribs. The cartilages, which terminate the ribs, often shoot into the sternum, and are joined by a suture. The cavities which receive the ribs approach as they descend.

The substance of this bone is cellular, with a very thin external plate, especially on its concave side, where it is covered with a thin cartilage. The cells are, however, small, and the bone is strengthened by strong cartilages.

The sternum is occasionally subject to inflammation, to suppuration, caries, pain, fractures, and tumours. When carious, a part of it has been taken out with a trepan, and Linquet has recommended this operation in abscesses of the mediastinum; but these are too obscurely marked by their symptoms to admit of a hazardous operation. Pain of the sternum has been described by Mr. Cheston as arising from polypus of the heart; and it has been found, by Bellonius and others, connected with different diseases of the thorax. In the angina pectoris, which we have styled syncope angeus, it is the most striking symptom. The other diseases of the sternum, which we have mentioned, do not require any appropriate management.

STERNUTA'TIO, (from *sternuto, to sneeze*). SNEEZING. A convulsive motion of the respiratory muscles by which the air is forced violently through the nose, as the lower jaw is closed at the same moment. It is occasioned by a stimulus on the membrane of the nose, and its final cause is to discharge acrid extraneous bodies from that organ.

The benediction commonly bestowed on those who sneeze is said to have been occasioned by its dangerous violence. Forestus, Horstius, and the Ephemerides Naturæ Curiosorum, record numerous cases of its great violence, and in the latter collection a case is mentioned in which it was periodical. Hildanus, Lancisi, Bo-

netus, and Morgagni, mention it occasionally proving fatal; the last author, on dissection, found the vessels of the brain remarkably turgid. De Sedibus, &c. xiv. 27.

The most common causes seem to be irritations on the lungs, or on the stomach and bowels communicated to the lungs. It has been produced by carbonic acid air, by fermenting beer, by a leaden ball remaining in the region of the diaphragm (Richter's Bibliotheca, vi. 730), by eating crabs, and by worms. Sometimes by more distant irritations, as injuries in the head, pregnancy, repelled itch, &c.

The remedies are few and uncertain. It has been relieved by a bleeding of the nose, by bags, *it is said*, filled with aromatics fixed to the vertex, and by rubbing the gums. The only effectual remedies are, however, opium and camphor in large doses. These will probably be particularly useful when sneezing is a symptom of putrid fever, a circumstance recorded in the Acta Naturæ Curiosorum.

STERNUTATO'RIA, (from the same). See ERRHINA and PTARMICA.

STERNUTATO'RIUS PU'LVIS, (from the same). See ASARUM.

STE'RTOR, (from *sterto, to snore*). See RHENCHOS.

STHENIA, (from *σθενος, strength*). A term introduced by Dr. Brown, and now generally adopted by pathologists. It consists, strictly speaking, in increased tone, and is what Dr. Cullen styled inflammatory diathesis, opposed to *asthenia* or debility. Brown, however, or rather his followers, have not strictly confined themselves to this meaning, but rather imply what we have styled accumulated excitability. The effects are perhaps in part the same; but much confusion has arisen from confounding an original constitutional sthenia with the temporary effects which arise from excitability retained and accumulated. Want of accurate distinction is indeed the error of the Brunonians; for Brown himself was satisfied if he was in opposition to Cullen.

STI'BII ESSE'NTIA. See ANTIMONIALE VINUM.

STI'BIUM, (from *στιζω, to shine*), see ANTIMONIUM. A term sometimes exclusively applied to the *vitrum antimonii*.

STICADO'RE. See STŒCHAS.

STICHOS. The ancient name of a pectoral confection containing horehound.

STI'GMA, (from *στιζω*). SCARLET-COLOURED SPOTS similar to those occasioned by a blow. (See SUGILLATIO). It sometimes means particular marks in the face, or any part of the body, commonly called moles (see NÆVUS); at other times *vibices*, or a small red speck in the skin, occasioning no elevation in the cuticle. Stigmata are generally distinct, and when they are, sometimes assume a livid colour, and are termed *petechiæ*.

In botany it is the top of the pistil, which is pubescent and moist, to detain the pollen.

STILLICI'DIUM, (from *stillo, to drop*, and *cado, to fall*). In pathology it is synonymous with *stranguria*; in the practice of medicine, with an instillation of fluid upon some part of the body, called by the French *la douche*; by us pumping.

Pumping is in general more effectual than immersion from the momentum, and in other respects does not differ from it. The momentum increases equally the effect of both hot and cold water. Pouteau mentions a singular stillicidium of warm sand and gravel.

Le Dran, in his 93d and 94th Obs. gives some account of this operation in the anchylosis, and attempts to account for the action of the pumping, in a way rather specious than satisfactory.

STILLI'CIDIUM URI'NÆ. See DYSURIA.

STI'MMI. See ANTIMONIUM.

STIMULA'NTIA, (from *stimulo, to irritate*). STIMULANTS. While we are ignorant of the manner by which impressions on the extremities of the nerves are conveyed to the brain, or how the different motions subjected to volition are influenced by this principle, we cannot expect to know how this power is augmented, or by what immediate change the motions are increased in energy or rapidity. If it be admitted that impressions are conveyed by the vibrations of an elastic fluid, these vibrations may be more rapid or more violent, the former depending on the mobility, the other on the momentum; and a fanciful theorist may pursue this view in explaining the increased mobility of the nervous temperament, and the increased vigour of the inflammatory diathesis. We must return to the more sober path of observation, and, by following its tract, endeavour to establish some useful practical distinctions.

The simplest idea of a stimulant is that of a rubefacient. Mustard, for instance, rubbed on the hand will induce heat, pain, and redness, with no change in any other part or any function. In this case a power acts on the nerves of the part, and, through their influence, on the circulating system; but when withdrawn, every increased action ceases. If we proceed farther, and continue the friction, or extend its application, the heart and arteries act more vigorously, the heat is more general; and, though the cause be withdrawn, the effect will continue for some time. If the action be still farther continued, the heat, and what may now be styled the fever, will be more considerable, and of a still longer duration. In the whole of this progress we see an effect, at first purely local, become general, perhaps only from the pain it excites, and durable in proportion to the extent or degree of the change. If the external stimulus is applied more generally, the constitutional effects are produced more quickly, and continue longer. If the stimulating power be applied to an organ more acutely sensible, as to the eye or nose, the effect will be still more rapid: if to an organ whose connection with the system is more immediate, as the stomach, the consequences will be sooner obvious. In all these cases, however, we see only a simple action, viz. an increased activity of the nervous influence. Whether any of the powers, already alluded to, will change its nature, is a question which we shall soon consider.

There is, however, another medium by which the action of the heart and arteries, perhaps the energy of the brain, may be excited, viz. through the medium of the excretory ducts. Cantharides will produce strangury and fever, by acting on the urinary organs, without showing any primary effect on the stomach and the action of the heart. Mercury will have no apparent influence till it has affected the salivary glands. Whether there be still another way, viz. by stimulants entering the blood-vessels and acting on the heart, we know not.

Many experiments have been made with this view; but they are by no means conclusive; and, in general, we find no peculiar effect from any medicine but from its action on the stomach, or the glands, chiefly their excretory ducts.

In each of these ways the topical action of stimuli becomes general, apparently by increasing the activity of the nervous energy; but it remains to examine whether its nature may not be sometimes changed. In this inquiry, we allude to the effects of heat, breathing oxygenous gas, of electricity, and galvanism. These are more general stimuli which produce appropriate changes in neither of the ways mentioned, and which may, therefore, be supposed to change in some degree the nature of the nervous fluid. To this action of the two first some objection may probably be made, and it may be alleged that they are strictly stimulant. The two latter may, however, be so conducted as not to give the slightest topical irritation; and the suspicion is corroborated by finding that their influence pursues the course of the nerve, and by reflecting on the affinity of their power to the nervous energy. Vide in verbis.

There is yet another class of stimulants, which the Brunonians call *indirect*. Without engaging in their distinctions, we may observe that we have separated these from the other stimulants, and included them in our list of the materia medica in a separate order. They are so arranged, that the shades are almost imperceptible between what are called the most diffusible stimuli and the most deleterious narcotics. From hence we began to perceive the nature of those most commonly called stimulants, viz. wine, alcohol, &c. and for this reason we have explained their action in a different way, and considered the apparent stimulus as owing to unequal excitement. The nature of all these substances is sedative. In Dr. Cullen's system, the term *indirect* stimulants has a different meaning, and implies those medicines which influence the sensorium commune through other organs.

It has been doubted whether there were any peculiar stimulants which affect only the muscular fibres, while powers of a different kind influence, exclusively, the nerves. Such undoubtedly is the case with those organs where the stimulating power is communicated to the nervous fibrils, deprived of their coats, in consequence of a peculiar organisation, as in the eye and ear, for neither light, simply as such, nor sounds are stimulants on any other part. On the other hand, the rubefacients seem to act on the arterial system as muscular organs, and the pain to be chiefly felt from increased tension. The latter opinion receives additional support from a practical fact, we believe, well established, that the energy of the brain is not excited by sinapisms to the feet. The only effect, so far as we have been able to observe, is an irritation from an uneasy feeling; but neither increased nervous energy, nor, except from the restlessness, increased action of the heart and arteries. It is not easy to pursue this subject farther. We see indeed that some stimulants are quick and transitory in their effects, others permanent; that some warm the stomach without greatly increasing the action of the heart, while others stimulate the latter organ almost exclusively. The quick transitory stimulants are styled *analeptics;* and those which stimulate almost exclusively the stomach are the *aromatics*. We found, however, the limits too uncertain to enable us to arrange medicines of this kind into such orders with advantage: the clue soon disappeared; yet perhaps in the analeptics we see the purely nervous stimuli; in the aromatics the muscular.

If we pursue these views, we shall find some support for them from practice. The spirit of lavender or ether is not given to restore lost tone in the stomach, nor the serpentary, contrayerva, and cascarilla, to relieve a fainting fit. The arum will be found beneficial in paralytic complaints; but be of little service in the cure of hysteria. In short, the whole of this class requires some revisal, with more correct and systematic views than it has yet received, and we have thrown out these few hints to direct the attention of therapeutical writers. But where shall we look for them? They are unknown in our language, if we except the general remarks in Dr. Cullen's Materia Medica; and we trust the disquisitions of this kind are not among the least useful parts of the present volumes.

See Cullen's Materia Medica; Douglass de Stimulis; Haertel de Stimulantium et Excitantium Effectu Sedativo.

STIZOLO'BIUM, *phaseolus, cadjuct*, COWHAGE, or COWITCH; *dolichos pruriens* Lin. Sp. Pl. grows in great abundance in warm climates, and on account of the spiculæ, which cover its pods, hath been long used in South America, and lately much employed in Britain to kill worms. (See PHASEOLUS ZURATENSIS.) The worms are said to appear with the second or third dose, and the stools procured by cathartics to have consisted entirely of worms: in cases of lumbrici, it is considered as a safe and effectual cure, without the slightest inconvenience. The spiculæ of one pod, mixed with syrup or melasses, and taken in the morning fasting, is a sufficient dose for an adult. Mr. Chamberlayn, however, used to administer it in the form of an electuary, mixed with honey, melasses, or syrup, without observing any exact proportion of the quantity of setæ. Of this electuary a tea-spoonful was a dose for young children; and to adults, one or even two table-spoonfuls, in a morning fasting, which were repeated two or three mornings, followed by a gentle purgative. We have used this remedy, we think, with advantage, and the setæ or spiculæ seem to act mechanically on the animals, without in the slightest degree affecting the intestines. See Chamberlayne's Treatise on this subject; Medical Commentaries, Edinburgh, vol. ii. part i. N° 4, p. 82.

STŒ'CHAS, (from Στοιχαδες, *the islands*). FRENCH LAVENDER, CASSIDONY, *spica hortulana, stucadore, lavendula stœchas* Lin. Sp. Pl. 800, is a low shrubby plant with small, oblong, narrow leaves, bearing on the tops of the branches short thick spikes, or scaly heads, from which several small purple labiated flowers, followed each by four seeds inclosed in the cup, issue: it is a native of the southern parts of Europe; but with a little shelter bears our severest weather, and flowers in May and June. The flowers brought from France and Italy are not superior to those of our own growth. The heads should be gathered when firm and hard, usually about the end of July.

Distilled with water the flowers yield a considerable quantity of a pale-coloured fragrant essential oil, though little with rectified spirit. Its virtues agree with those

of, but are inferior to, our lavender. Neumann's Chemistry; Lewis's Materia Medica. See LAVENDULA.

STOLO'NES, (from the Hebrew *stila*), the SUCKERS OF PLANTS; shoots from the roots of vegetables, by which they may be propagated.

STOMACA'CE, (from στομα, *the mouth*, and κακος, *evil*); an erosion of and spontaneous hæmorrhage from the gums, with usually a fœtor of the mouth, is a common symptom of scurvy, and is sometimes the appellation of this disease. See SCORBUTUS.

STOMA'CHICA, (from στομαχος, *the stomach*). Medicines which excite and strengthen the action of the stomach. They include stimulants and tonics; but the association is undoubtedly too general, and should be rejected. See Cullen's Materia Medica.

STOMA'CHICA PA'SSIO. This term is now obsolete, and the disease is usually comprehended under the term DYSPEPSIA, q. v. The industry of our predecessors should not, however, go without its reward, and we shall add their description, as well as their pathology and treatment of the disease, in their own words.

"In this disorder there is an aversion to food; even the thought of it begets a nausea, anxiety, cardialgia, an effusion of saliva, and often a vomiting; fasting is more tolerable than eating; if the patient is obliged to eat, he must endure a pain that is worse to him than hunger itself; he is troubled to chew, but more so to swallow his food; there is an aversion to common food, and a desire to what is unusual: often a pain is complained of between the shoulders, and it is increased after eating; restlessness, dimness of sight, a noise in the ears, a beaviness in the head, numbness in the limbs, a palpitation in the hypochondria, and a spitting of cold watery phlegm: the patient imagines that the spine of his back moves towards his legs, and, whether standing or lying, he seems to be moved like a reed shaken by the wind; though not thirsty, he desires to drink after eating; though drowsy, he keeps waking; is lean, pale, feeble, faint, timid, silent, but soon angry; he is much disturbed with black bile, and falls into fits of melancholy; the symptoms during a fit are, fainting, a cold numbness of the joints, an unusual heat which runs through the members, and most perceived in the palms of the hands, with a dewy sweat, restlessness, jactitation, anxiety, despondency, a change of colour, a small, swift, weak pulse, a wasting of the body,—or, on the contrary, an immoderate appetite, with indigestion, and an acrid, acid, or nidorous quality in the contents of the stomach; sometimes the patient is speechless, grinds and clenches his teeth; there is always a cold in the head, with a ringing in the ears; sometimes, though rarely, there is great thirst; a pain in the præcordia, which extends between the scapulæ; and when the inflammation is considerable, there is a difficulty of swallowing, and a strangulation, which some have called a *stomachic quinsy*; a hardness of the stomach without pain, with other symptoms, as windiness, inflation, borborygmi, &c.

"The causes are a discharge of pus from the belly upon the stomach, intense thinking, a neglect of proper nourishment and rest, sorrow, taking cold, continual indigestion, vomiting, &c.

"In order to the cure the patient's inclinations must be complied with; the juice of quinces is recommended; warm stimulants, such as pepper and ginger, with aloes and other such like bitters, are found to be useful. See Aretæus de Causis Signis, lib. ii. cap vi.; Cœlius Aurelianus de Morbis Chronicis, lib. iii. cap. ii.; Aretæus de Curatione Chronicorum Morborum, lib. ii. cap. iv."

STOMA'CHICA TINCTU'RA. See CARDAMOMUM.

STOMA'CHICI NE'RVI. See PAR VAGUM.

STOMA'CHUS, (from στομα, *a mouth*, and χεω, *to pour*, because the food is poured into it as into a mouth), *ventriculus, anocœlia, gaster, nedys*, is situated under the left side of the diaphragm, just below the lesser lobe of the liver, from which it passes down a little way, and then crosses the spine towards the right side, in shape resembling the pouch of a bagpipe. It lies, therefore, in an oblique direction from left to right, and hath a substance called *mesogastrion* in its concave part, between the orifices, attaching it to the subjacent parts. Its superior orifice is called the *cardia*, and is on the left side, the inferior toward the right side is called *pylorus*.

The stomach is not equal in its bulk; but the larger part is on the left, contiguous to the upper orifice the cardia, which is immediately under the diaphragm. The smaller extremity on the right is lower, and more inclined than the former. For this reason Dr Monro contends, with great propriety, that they should be called the superior and inferior orifices. The superior orifice is turned backward, where the œsophagus enters. The small extremity and the inferior orifice bend obliquely backward towards the upper, so that the two orifices are not distant, and when the stomach is full they are less so.

When the stomach is distended it does not press downward; but its greatest curvature is raised against the parietes of the abdomen, though it sinks somewhat lower, and the smaller curvature is against the spine. The contraction of the long fibres also brings the orifices nearer together, and these changes contribute to detain the food longer in the stomach for the purposes of digestion. It is necessary also to remark, that the two orifices are not in the same plane. If a plane passes through both curvatures the superior orifice is in the portion behind, and the inferior in that before; for the cardia, so far from lying in the plane of the œsophagus, is turned backward. (See Plate.) This appears to be contrived for the purpose of preventing the contents of the stomach from being too easily discharged, and, in the act of vomiting, an obstruction is felt, in consequence of this structure of the cardia.

The stomach is composed of four coats,* the outer peritonæal, the muscular, the nervous, and the villous. The muscular coat is composed of two planes of fibres, external and internal: the former is longitudinal, following the curvatures and convexities; and it is this plane which contracts the stomach, drawing its orifices nearer to each other: the latter is transversely circular. Their united or opposed action presses on the food, assisting its union with the different fluids, and shifting it by a kind of peristaltic motion from one side to the other.

More minute anatomists, by coagulating the fluids, have rendered the muscular fibres more conspicuous, and they find the fibres of the external plane not wholly longitudinal, but occasionally oblique. The fibres of the internal plane are, as may be expected, stronger,

since these chiefly propel the food. They are not, as in every hollow muscle, entire circles, but segments of circles, the joint action of which is obviously more considerable than the action of a larger portion of, or an entire, circle, and these segments are connected by ligamentous fibres, which give a fixed point for their separate action. We say separate action; for we shall find that different portions of this viscus often act independent of the rest. When these segments reach the great curvature, they diminish gradually, leaving a point, which they seem to surround.

Round the cardia there are two distinct planes of muscular fibres crossing each other obliquely, intersecting others, where they meet on the sides. These form a kind of sphincter, which gives an additional obstruction to the discharge of food upwards. There is no such guard to the pylorus, but a ligamentary band runs along the middle of each side of the small curvature, ending in the pylorus. The cellular substance connecting the peritonæal with the muscular coat, is, in some places, very loose, and this has occasioned anatomists to describe a tunica cellulosa. It is, however, only common cellular membrane.

The *nervous coat* is composed of vessels and nerves, connected by cellular substance, and supported by ligamentary filaments, intersecting each other obliquely. It is of a loose spongy texture, swelling in water, and resembling fine cotton. The last is the *villous coat*; because its internal surface, when seen in water, resembles the pile of velvet. The ancients called it *tunica fungosa*. These two coats are of a much greater extent than the containing ones, so that they are raised in rugæ, or plaits, chiefly transverse and waving; but at the pylorus becoming longitudinal. At the cardia, they appear radiated, and seem to be continued from the œsophagus; but they are thicker, and surround the cardia like a crown. The design of this structure is to enlarge the surface, and increase the exhalation from the arteries, and the mucus from the glands. The interstices of the rugæ are usually filled with mucus, which is the matter styled the *gastric fluid*.

The stomach is supplied with arteries from the two coronaries and the vasa brevia, already mentioned, in the article SPLEN. Its veins contribute to form the vena portæ. The nerves arise chiefly from the eighth pair, the middle sympathetics, which run down in cords upon the œsophagus, under the denomination of *nervi stomachici*, and are expanded on a plexus termed *coronarius stomachicus*, to which the intercostal nerve contributes by filaments from the plexus splenicus, and the semilunar ganglions of the plexus hepaticus. (See DIGESTIO.) We thus perceive that the action of the stomach is not wholly involuntary. Many persons can excite vomiting, for instance, at will. See NERVI.

The bulk of the stomach varies considerably from the portion of food usually swallowed. From inanition it has been contracted almost to the size of a small intestine (Ruysch, Obs. 68), and, in the famous stone-eater, it almost filled the abdomen. An instance also of its extending to an enormous size occurs in Morgagni de Sedibus, &c. xxxix. 15. The situation is often altered, and it is displaced by a variety of causes. Garengeot (Memoires de l'Academie de Chirurgerie, vol. i.) describes a hernia of the stomach from violent exertion in dancing, and in this, as in other cases, he remarks, that it protrudes by the side of the ensiform cartilage, through a triangular space formed between the sheath of the rectus. It is generally, however, protruded through the muscular fibres of the diaphragm, either by steatomata or enlarged viscera, particularly the liver. In many instances this has occurred in consequence of a wound in the diaphragm. (Morgagni de Sedibus, &c. xxxix. 15, 16, lxv. 15; Parey's Works, ix. 30). It has been occasionally forced through the parieties of the abdomen, covered with the peritonæum, and sometimes pressed wholly into the left side.

Of the principal function of the stomach, DIGESTION, we have already spoken, and, from its structure, we see that the whole viscus admits of contraction in different directions. When living animals have been opened, it appears to have a peristaltic motion, similar to that of the intestines. When vomiting comes on, this motion is inverted; but some resistance is felt at the cardia, from the angle which it makes. We must consider this operation on another occasion (see VOMITUS); but must now observe, that, from the tendinous lines interspersed, the whole stomach does not always act together. The motion of the upper part is often inverted, without any affection of the other portions, and one half of it frequently, when the greater curvature is wholly uninfluenced. Thus eructations bring up often only the oily matter which swims on the surface; spontaneous vomiting the fluid portions exclusively, while active emetics discharge the heavy mucus; and calomel, which, from its weight, descends, often escapes the common exertions of vomiting. Bile also, which is heavy, is not discharged without violent straining. These circumstances, in all their bearings, are not considered in practice so much as they deserve, and we have, therefore, more fully enlarged on them.

The function of the stomach is digestion; but from whence does it arise that the cauldron itself is not affected by the fire which acts on its contents? The reason is simple; but it has not been sufficiently considered in its consequences; that nothing, which possesses life, is subject to this process. The conclusion is, we think, obvious, that it is not wholly a chemical operation; and, when we pursue this view, when we perceive that whatever weakens the vital power impedes or prevents digestion, we shall see that it is rather connected with the nervous system than the nature of any secreted fluid. This argument, at the first view, will not appear to militate against the digestion of the stomach itself by the solvent power of its fluids *after* death. If, however, digestion depends on the activity of the vital power, we should scarcely expect it to go on, when that power is extinct; but admitting the activity of the solvent, and the capacity of the solvend, were the fact true, it must have been long since placed beyond doubt. Few, however, are the instances where it has occurred; and, though limited to cases of violent death, how numerous are the victims of the laws subjected to the knife of the anatomist? Even the eager panegyrist of Mr. Hunter, Dr. Adams (Essay on Morbid Poisons, Ed. 2d.), admits that the stomach is not often found in this imperfectly digested state. Were the power equal to the effect, it would be incumbent on the advocates of this opinion to show, why the solution does not always take place. The original question will, however, recur, and we think every sa-

gacious physiologist will agree that digestion is not a purely chemical process: it cannot be imitated out of the body; it will not proceed while the vital power is injured.

Erosions of the stomach are not uncommon; and, in the agitation of a violent death, the process of digestion may be disturbed and an acid produced. This we know is effected in a moment, during life, by distress, by terror, by apprehension. We find, however, no instance in the records of medicine of this effect by acids, though it has been produced by arsenic, by corrosive sublimate, and even, *quod miremur*, by the nux vomica. Murray Bibliotheca Practica, ii. 429.

Other causes of wounds and perforations in the stomach have been shocks from falls, abscess of the neighbouring organs, increased force of the absorbents (Cruickshank), worms, repletion, sharp stones of fruit, black bile, &c. Several instances are mentioned where a portion of the liver and omentum had accreted to and filled the aperture. Sandifort found the stomach ruptured in a new-born child, and in Haller's Collection of Chirurgical Dissertations is the history of a young woman with a perforation in the stomach, through which she was nourished for twenty-seven years. Instances of fistulous ulcers occur also in the Medical Facts and Observations, v. 17; and in the Irish Transactions, iv. 12.

Wounds in the stomach, supposed by some authors to be always fatal, have in many instances been cured. (Morgagni de Sedibus, xxxvi. 31, liv. 8, 12, &c.; Histoire de l'Academie des Sciences, Année 1723, 39, and De l'Academie de Chirurgia, i. 541.) Even when the stomach was full of food art has equally succeeded; and in such cases Morand has told us to evacuate the contents by an emetic. While wounds, however, are easily healed, blows, and often slight ones, are soon fatal (Lancisi de Subitanea Morte), though we are informed by a German author, that a gun-shot wound in the stomach has been cured. The effects of blows are on this organ singular and unaccountable.

Abscesses and cancers of the stomach are not uncommon. Of the latter we have different instances in our own language. (Medical Communications, i. 28, 29, ii. 31; Philosophical Transactions, xlii. 2.) The symptoms of these disorders are commonly, however, vague and uncertain. A general pain, not always confined to the organ, but apparently wandering to different sides of the thorax, without any marked shivering or nocturnal exacerbation, point out general disease, without fixing any particular seat of the complaint. When suppuration has arisen from common inflammation, the disease has been confounded often with inflammation of the lungs; but the quantity and nature of the discharge are different. Pus from the stomach is copious, its discharge free, and its appearance, not curdly, but truly laudable. It might be a mark of distinction, whether it is brought up by coughing or vomiting; but that either sometimes produces the other, and common people either cannot or will not distinguish. As they are always apprehensive of pulmonary complaints, they will always contend that matter comes from the lungs.

The very extensive sympathy of the stomach renders all distinction of its diseases a task of peculiar difficulty. It is the centre of almost the whole nervous system, and aptly chosen by Van Helmont as the residence of his archæus, the *anima medica* of Stahl and Nichols. Its chief connection is with the head, with the uterus; probably from a striking fact recorded by Van Helmont, and the common symptoms of gout, with the joints, and apparently with the testicles; for a slight bruise on these will produce both sickness and syncope. Bartholine mentions a sympathetic connection between the stomach and face; Percival (London Medical Journal, iv. 10) with the lungs.

The chief disease of the stomach is debility, occasioning indigestion, cardialgia, flatus, eructations, &c. Of these we have spoken under the articles Apepsia and Dyspepsia, q. v.; but these symptoms sometimes arise from defective or injured organisation, particularly schirrous hardnesses or callosities in the stomach itself, the pylorus or cardia: the last, however, is seldom affected, though a case of this kind is described by Triller. This disease is often attributed to the abuse of spirituous liquors; but Haller (Pathology, Obs. 26) found it to arise from the abuse of acids; and Plater, from healing an ulcer. We think we have observed it from the use of cosmetics. Bruner mentions dyspepsia as arising from obstructions of the glands of the duodenum; Bonetus from a relaxation of, or a mucous crust on, the internal surface of the stomach, sometimes from a disease of the omentum. Among the remedies we omitted to mention one that has become fashionable since the translation of Daubenton's tract, viz. small doses of ipecacuanha. We perceive also the magistery of bismuth, recommended by Carminati, in his Opuscula Therapeutica.

Substances of very different kinds have been found in the stomach, and even grain rejected in a germinating state. Numerous instances, too numerous to detain us, have been recorded of substances retained in the stomach for a long period with little inconvenience. Derham, if we recollect rightly, mentions some grapestones retained ten years; and Hildanus speaks of the discharge of a piece of bacon which had been eaten two years before. The Medical Transactions, the Medical Commentaries, the Journal de Medecine, and the Journal des Savans, record a variety of similar instances.

Calculi have been sometimes found in the human stomach, which, in a paper in the Philosophical Transactions, have been attributed to the excessive use of absorbents. Schirrous glands, infarcted vessels, hydatids, and steatoma, are not uncommon appearances on dissection: unfortunately they have not been connected with the symptoms. The stomach is sometimes divided into cells, in one instance from the pressure of a diseased pancreas.

A singular instrument for clearing the stomach, styled a *brush*, has been mentioned by different authors, and it seems to have varied in its construction. It is styled by Wedel *excutia ventriculi*, and is mentioned by Scribonius Largus, by Bartholine, by Teichmeyer, and even by Tacitus, Annal. xii. 13. It is now wholly disused.

STO'RAX, (στοραξ). See Styrax.

Sto'rax rubra. See Thuris cortex.

STRABI'SMUS, (στραβιζω, *to squint*). Squinting, *distortio* and *illosis*. Dr. Cullen places this disease among the class *locales*, and *dyscinesiæ*, defining it the optic axes of the eyes not converging. The species are, 1. *habitualis*, from a custom of using only one eye; 2. *commodus*, when, from greater weakness or mobility, one

eye cannot accommodate itself to the other; 3. *necessarius*, from a change in the situation or figure of the eye or a part of it.

This enumeration of species affords, however, but a partial view of the subject. Squinting depends certainly on the optic axes not being directed to one object, and it will be necessary to examine the sources of this deviation from their uniform direction. If both eyes, as Dr. Cullen has remarked, are not of equal powers, the person accustoms himself to see with one only, and the other frequently wanders in different directions. This is, however, by no means a frequent cause, for in that case every very near-sighted person would squint; but those who read or work with one eye only, when looking at a distant object, direct both to it. In the few instances which we have observed of squinting, combined with near sight, we have rather suspected that the disease was independent of it.

When any affection of the brain occasions double vision (Boneti Sepulchretum, lib. i. Sect. xviii. Obs. 28), squinting often follows; for to remedy the defect the person distorts one eye; and before the cause is removed the disease becomes incurable. Sometimes a disorder of the muscles of one eye prevents its easy action in different directions, and Morgagni (de Sedibus, &c. xiii. 20) found it to arise from inflammation of the muscles of the bulb; Pellier, in another case, from the muscles ruptured; and an author in the Journal de Medecine, whose name has escaped us, discovered them in a state of great relaxation. Diseases of the cornea and lens have also occasioned strabismus. If there is any obfuscation of the latter, the eye will be differently directed to see with greater clearness, and Du Hamel found the lens drawn into an oblique position, as he supposed, by the ciliary processes. An oblique position of the cornea is mentioned as a cause of squinting; but it is not easy to separate this appearance from too great convexity, the cause also of myopia, which we have already mentioned. Tumours within the eye, pressing it on one side, are causes of double vision, and a preternatural adhesion of the eyelids, which admits only of sight in one direction, must obviously produce strabismus.

A more general cause is, however, a great irritability in the muscles of the eye, occasioning irregular contraction. This often arises from nervous diseases, in one instance it originated from terror, sometimes from epileptic paroxysms, and in a single case, it is said, from fever. A paralysis of one of these muscles may also occasion the disease, or a general relaxation, producing spasm in the manner before explained, may have the same effect.

When the causes can be traced, they will often suggest the remedy; but, in general, the mechanical contrivances only succeed. (See Darwin, Philosophical Transactions, 1778; Pressavin Nouveau Traité des Vapeurs.) An object fixed to the temple on that side of the eye turned from its natural direction inward, and to the nose, when directed outward, will sometimes attract the attention gradually, and restore it to the natural direction. Goggles have been also recommended which admit only of vision in the same line; but these often fail, as the child, in whom any remedy will only succeed, contents himself with seeing with one eye. In a child who began to squint visibly we directed a servant appointed to watch him with the strictest care, to put her hand immediately before his eyes, and at the same time to direct his attention to distant objects. This plan succeeded in a great degree; for, though his squinting is visible to its parent, no one, though apprised of it, can perceive the different direction of the axes.

See Camper de Regimine Infantum; Memoires de l'Academie des Sciences, 1742, p. 93; 1743, p. 321; Pellier Recueil des Memoirs, &c.

STRA'MEN CAMELO'RUM. CAMEL'S HAY. See JUNCUS ODORATUS.

STRAMO'NIUM, (from *stramen*, from its fibrous roots). THORN-APPLE, *dutray*, *barryococcalon*, *stramonium spinosum* of Gerard; *solanum maniacum* of Dioscorides; *datura stramonium* Lin. Sp. Pl. 255.

The root is long, large, and fibrous; the stalk of a pale green colour, strong, and near three feet high; the leaves large, of a lively green, placed on strong peduncles, broad, pointed at the extremity, beautifully indented, and placed without any regular arrangement. At night the leaves, particularly the upper ones, rise up and inclose the flowers. The flower is monopetalous, funnel-shaped, tubular, and folded at the border in five parts, growing at the bifurcation of the branches, large, of a milk-white colour, though sometimes with a tinge of purple or violet. The seed-vessel is oval, large, and covered with short, sharp, and strong thorns; the seeds brown: a native of America, flowering in August.

The seeds and leaves produce a vertigo, and afterwards delirium. Some boys who had eaten the seeds of thorn-apples were seized with giddiness, horrible imaginations, terrors, and delirium; and those who did not soon vomit died. (Boerhaave.) A man, sixty years old, by mistake drank a decoction of the capsules of the stramonium in milk, which was followed by vertigo, dryness of the fauces, anxiety, loss of voice and sense: the pulse became small and quick, the extremities cold, the limbs paralytic, the features distorted, accompanied with violent delirium, continual watchfulness, and a total suppression of all evacuations: in a few hours these symptoms disappeared.

This plant hath a disagreeable nauseous smell, when rubbed between the fingers; the leaves are said to be cooling, and the seeds narcotic, producing a kind of delirium, which continues twenty-four hours. See Edinburgh Medical Commentaries.

For the treatment of those affected by the stramonium, see AMANITA and VENENUM.

Dr. Storck found the expressed juice to be singularly efficacious inspissated to an extract, in doses from gr. ss. to ℈i. in twenty-four hours, in epileptic disorders, convulsions, and madness. With other practitioners it has not been equally successful. Though the extract has been usually given, the powdered leaves seem to be a preparation more certain and convenient. The leaves of the stramonium have been used externally in inflammatory tumours and burns. Storck on the Stramonium; Withering's Botanical Arrangements; Medical Museum, vol. i. p. 448, &c.; Wilmer's Observations on Poisonous Vegetables; Cullen's Materia Medica.

STRANGA'LIDES, (from στραγγευω, *to torment*). Hard tumours in the breasts from milk.

STRANGULA'TIO. See SUSPENSIO.

STRANGU'RIA, (from στραγξ, *a drop*, and ουρον, *urine*). A STRANGURY, a discharge of urine by drops, attended with pain. See DYSURIA.

STRATIO'TES, (στρατος, *an army*, from its virtues in healing fresh wounds). See MICRO LEUCO NYMPHÆA, MILLEFOLIUM, ALOIDES.

STREATHAM WATERS, rise about six miles south of London-Bridge, in the county of Surry: a gallon of this water yielded forty grains of calcareous earth; sixty of a salt compounded of vitriolated magnesia, and sea-salt according to Dr. Rutty. It is a weak purging water, taken from one to two pints in a morning, but now neglected. See AQUÆ MINERALES.

STRE'MMA, (from στρεφω, *to turn*). A STRAIN, by the ignorant and illiterate SPRAIN, or the stretching of a membranous or tendinous part beyond its proper limits of motion. This accident happens chiefly about the joints, occasioning weakness and pain, with swelling, and often a total inability to move. A strain approaches very nearly to the nature of a contusion, for the very violent tension of the fibres weakens their tone. Inflammation and swelling soon follow, not without some suspicion of a rupture of the absorbents, or of the exhalent arteries. The swelling is certainly at first elastic, and the inelastic tumour which follows is the effect of weakness only. As in contusions, warm spirituous applications in the earliest periods are effectual; but less so after the inflammation has come on. Immediately after the accident also, pumping on the part is highly beneficial. If these applications are delayed, topical inflammation follows, and in that state leeches, with the application of warm vinegar, three or four times a day, will be proper; or the *cataplasma aceti*, made of vinegar, oatmeal, and crumbs of bread, may be applied cold. When the inflammation has abated, camphorated spirit of wine may be added to the vinegar, or the volatile liniment applied, and a bandage used to support the weakened part, often wetted with a solution of vitriolated zinc, until the natural degree of strength returns. Dr. Lobb advises the use of vinegar, and rectified spirit of wine alternately, at the distance of two or three hours. Saturnine water is useful; and in the early period the effusion of water as hot as it can be borne has been recommended. The leeches, when the inflammation has come on, must be repeated in proportion to the degree and the frequency of the returning pains. Bell's Surgery, vol. v. p. 446.

STREPSI'CEROS, (from στρεφω, and κερας, from his twisted horns). See ANTILOPUS.

STRI'CTURÆ, (from *stringo, to bind*). Constrictions in nervous passages, arising either from organical disease, from spasms, or obstructing bodies. The first is our chief object in this place. Strictures from organical disease, which are the objects of our practice, occur in the urethra, the œsophagus, and rectum. Those of the urethra are particularly troublesome; and, though they seem occasionally to arise from spasm, and this preternatural contracted state often impedes the best concerted measures, yet spasm is seldom, if ever, a permanent cause of stricture. It has been doubted whether the urethra is muscular: muscular fibres cannot certainly be traced in it; but we have long since learnt not to deny their existence, because they cannot be demonstrated; and every one accustomed to introduce the catheter must have experienced the very great inconveniences which the occasional contraction of this canal produces. See CATHERISMUS.

It may indeed be doubted whether this contraction arises from the urethra itself, or from the muscle which embraces it at the part where the contraction usually takes place; but this would lead us into a disquisition of no little intricacy, and wholly inapplicable: it is sufficient to observe that there is the greatest probability that the urethra itself is muscular, since it is subject to spasm very nearly through its whole course. At the same time, as already hinted, it is highly improbable that permanent strictures are owing to this preternatural state of contraction.

A common cause of strictures is inflammation, or previous ulcerations, which occasion a thickening of the canal, from exudations in its substance, or cicatrix. From this circumstance it is often the consequence of gonorrhœa; but, independent of inflammation, strictures more commonly arise from plaits or duplicatures of this membrane, which take place on either side, or, in some cases, through the whole circumference. When from inflammation, it is styled the *cord* stricture; if surrounding the canal, and if extended in width, the *ribband* stricture. When it arises from duplicatures of this membrane, which may be easily conceived if its various states of distension and relaxation are considered, as well as the difficulty which must attend its accommodating itself to their rapid successions, these may arise on either side, or, like the former, surround the whole canal. Strictures of this kind are rarely single, except when found below the bulb, and from hence it has been concluded that all others are of secondary formation. In this part of the urethra there is indeed a natural contraction, probably intended as an obstacle to the discharge of the semen, for the purpose of exciting the action of the acceleratores, and here, from the causes of duplicatures just mentioned, we may naturally expect to find their effects.

In this view of the causes of stricture we have omitted that insisted on by Mr. Hunter, debility; but it probably acts as the cause of duplicatures, while inflammation as constantly produces strictures from exudation. Constant irritation may produce both; for a membrane, when weakened by repeated stimuli, does not readily adapt itself to the different states of relaxation. The contractile power is diminished by repeated exercise. From these different causes, however, strictures are common complaints; but we by no means find them more frequent since injections have been more freely employed; nor have we any reason, from experience, to accuse this remedy as a cause.

The effects of strictures are various and extensive. We have already mentioned a regular feverish paroxysm as the consequence of introducing the catheter; and, on the contrary, an obstinate intermittent has arisen from a disease of the urethra. Pruritus and leucorrhœa in the softer sex, nocturnal emissions and blennorhagia in men, have equally proceeded from this apparently unsuspected cause; and to the same effect may probably be attributed the advantages, *if any*, of the savine candles in tabes dorsalis.

The only effectual remedy is the bougie, an instrument which is usually conical at its extremity, and acts mechanically in dilating the strictured portion of the ca-

nal. It is made of rolled plaster, of elastic resin, of metal, and in considerable strictures a piece of catgut is sometimes employed with success. The stricture is, however, frequently too considerable to yield to such measures; sometimes the canal is almost wholly closed. The improvers of surgery have, therefore, substituted the caustic. The plan was suggested, and, we believe, employed, by Wiseman, and afterwards described by Petit (Memoires de l'Academie de Chirurgie, i. 439); but neglected till again revived by Mr. J. Hunter. Each adopted measures neither safe nor convenient; for the portecrayon of the latter is scarcely superior to the ruder method of the former. The armed bougie is a more convenient instrument, viz. a bougie to the end of which a caustic is fixed, covered, in the more improved forms, with a coating of wax, to prevent its action till it reaches the strictured part, near which it is retained for a short time, till by the warmth the wax dissolves, and the caustic acts with scarcely diminished powers. Both the argentum nitratum and kali purum have been employed; but the former seems to deserve the preference. The caustic has, however, been sometimes, we fear, employed unnecessarily, and the introduction of this instrument, as well as the common bougie, is in unskilful hands often dangerous: in the most skilful it is frequently difficult. The management can scarcely be detailed: it must be learnt from practice.

Strictures in the œsophagus have been combated with bougies, like those in the urethra, but seldom with advantage. Dr. Andrews, in a late work, has recommended the armed bougie for this purpose, and given some instances of its success. The only other stricture is that in the rectum; but for this we believe no measure similar to the bougie has been adopted, though, as it is within the reach of the finger, we suspect that the savine candle may prove advantageous.

Wiseman's Surgery; J. Hunter's Works; Jesse Foot's Critical Inquiry into the ancient and modern Manner of treating Diseases of the Urethra; Home's Practical Observations on Strictures; Whately on Strictures; Andrews on the Application of Lunar Caustic to Strictures; Wolf de Morbis Urethræ apud Eyerell Dissertationes Medicas; Stoll iv. i.

STRI'DOR, (from *strideo, to gnash* or *grind*). GRINDING of the TEETH. In acute diseases this symptom is usually fatal if the patient has not been accustomed to it in his childhood. (Hippocrates.) It is usually accounted a symptom of worms in children; but is owing to irritation on the bowels from any cause.

STRI'GILIS, (*quòd eo equi, et in balneis homines, stringuntur*). A HORSE-COMB or SCRAPER. An instrument to scrape off the sweat during the gymnastic exercises of the ancients; and in their baths, made of metal, horn, ivory, or linen. They were sometimes curved.

STRIGME'NTUM, (*à strigendo, from scraping*). The SORDES, scraped from the skin in baths, and places of exercise; consisting of the oil employed in anointing the bodies of the athletæ and the sweat mixed with the dust raised in the place of exercise, or purposely strewed on the bodies of those engaged. Strigments sometimes consisted of oils and dust scraped from statues, combined with verdigrise, from the oil dissolving the copper.

STROBILUS. A CONE, a species of pericarpium, formed from an amentum, as in the fir-trees.

STRO'NGYLUS, (from στρογγυλος, *cylindrical*). See VERMES.

STRO'NTIA. An EARTH. (See CHEMIA.) Though we have introduced this earth in our list of the materia medica, its medical virtues are doubtful and suspicious. In moderate quantities it is not injurious to animal life.

STRO'PHULUS, a papular eruption peculiar to infants, of a variety of forms, which Dr. Willan has divided into five species.

1. STRO'PHULUS INTERTINCTUS, (from *intertingo*), usually called the *red-gum*, in Scotland the *redgown*, in France *efflorescence benigne*. The papulæ rise sensibly above the level of the cuticle, are of a vivid red colour, commonly distinct from each other, though sometimes in large patches, appearing most commonly on the cheeks, fore-arm, and back of the hand, occasionally diffused over the whole body. This complaint rarely becomes pustular, and, when it does so, the fluid is usually absorbed, leaving in almost every instance a scurf. The duration is various, and sometimes there are successive crops. It is seldom preceded or accompanied by any constitutional disease, though supposed by some authors to be connected and to alternate with aphthæ. This connection is, however, scarcely supported by observation. It has been ascribed to acid acrimony in the stomach; but is more probably owing to an irritable state of the skin; though, if repelled, diarrhœa and other complaints of the bowels, sometimes even with convulsions, follow.

2. STRO'PHULUS ALBIDUS, a variety only of the former, having a number of minute whitish specks a little elevated, sometimes, though not constantly, surrounded by a slight redness, not discharging any fluid, on separating their tops. They appear chiefly on the face, neck, and breast, and are more permanent than the red gum. Either seldom requires any thing but keeping the skin clear from sordes, and promoting an equable perspiration, by washing the surface of the body daily with tepid water. But should these eruptions be attended with a morbid state of the stomach and bowels, the aliment must be proportioned to the strength of the digestive powers; and such exercise employed as can be conveniently borne to invigorate their system. If from exposure to cold, or from any other cause, a repulsion takes place, producing some internal disorder, a warm bath is the most effectual remedy.

3. STRO'PHULUS CONFERTUS, (from *confercio, to crowd together*). TOOTH RASH. About the fourth or fifth month after birth, nearly at the period of dentition, an eruption of numerous papulæ, irregular in size, appears on different parts of the body in infants, which chiefly affects the cheeks and sides of the nose, extending sometimes to the forehead and arms, but rarely to the trunk. On the face they are more crowded, smaller, though not of so vivid a colour as in the red-gum; but on the back and loins they are much larger, and somewhat more distant from each other than on the face. They are often surrounded by an extensive circle of inflammation, and some few of the papulæ contain a

semi-pellucid watery fluid, which is absorbed on the inflammation subsiding. About the seventh or eighth month one or two large irregular patches arise on the arms, shoulders, and neck; the papulæ are hard, large, and crowded together; and the whole surface is of a high red colour. In about a fortnight these papulæ become flat at the top, the cuticle exfoliates, and the skin below remains rough, irregular, and discoloured for a fortnight. A painful and obstinate modification of this complaint occasionally takes place from the calves of the legs to the navel; for the papulæ are numerous and crowded, producing a continued redness. During the course of three or four months the eruptions recede, and again return; nor do they finally yield till the child is one or two years old. The skin shrivels and cracks; but the fresh papulæ rise from under it; but, though troublesome, the general health is generally good while the eruption continues on the surface. This complaint is considered as symptomatic, arising from the inflamed and painful state of the gums during dentition, as it always occurs at that period, and disappears soon after the first teeth have cut through. It has been attributed to acid, to indigestion, or some feverish complaint of the mother or nurse, but is more probably the irritation from the teeth communicated to the skin. Its appearance is, however, favourable; for convulsions scarcely ever occur while it continues on the surface. The remedies are those described in dentition. See DENTITIO.

4. STRO'PHULUS VOLATICUS, denominated from its transitory appearance, arises in different parts of the body in small circular patches, or clusters of papulæ, the number in each cluster being from six to twelve: both the papulæ and the interstices are of a high red colour, and continue red, with a little heat and itching, for about four days, when they turn brown and begin to exfoliate. They arise in succession, at a small distance from each other, gradually creeping over the face, body and limbs, and terminating in three or four weeks. Though in many cases the eruption takes place without any symptoms of internal disorder, sometimes the patient has a quick pulse, a white tongue, and seems uneasy and fretful. This is the *ignis volaticus infantum* of authors, though Astruc and Lorry have given this term to one of the forms of crusta lactea, in which successive eruptions of pustules are observed, chiefly about the mouth. The *maculæ infantum volaticæ* of the German authors are erysipelatous efflorescences on the genitals of infants, which often prove fatal by supervening mortification. The present usually appear between the third and sixth months; but no external application seems necessary. As there appears some disorder of the stomach and bowels connected with it, an emetic, succeeded by some laxative medicines, and afterwards a decoction of Peruvian bark, will be advantageous.

5. STRO'PHULUS CANDIDUS, (from the smooth shining surface of this eruption, without inflammation round the base, so that the spots appear of a lighter colour than the adjoining cuticle). The spots are larger than any of the foregoing species, diffused at a considerable distance from each other, over the loins, shoulders, or upper part of the arms; and seldom seen in any other situation. This species affects infants of about a year old, and most commonly succeeds some of the acute diseases to which they are subject. These papulæ continue hard and elevated for about a week, and then gradually disappear. See Willan on Cutaneous Disorders. Order 1st. ed. 4to. London.

STRU'MA, (from στρυω, *to heap up*). See SCROFULA. The term is sometimes confined to the induration of the thyroid gland; endemic of Switzerland.

STRU'THIUM, (στρυθος, *a sparrow*, from the resemblance of its flowers to an unfledged sparrow). See SAPONARIA LUTEA, IMPERATORIA, and LUTEA.

STRYCHNOMA'NIA, (from στρυχνος, *night-shade*, and μανια, *madness*). See SOLANUM LETHALE.

STRY'CHNOS, (στρυχνος, vel τρυχνος, from τρυχω, *to torment*). The deadly night-shade of Theophrastus. In Linnæus's system it is a genus of plants comprehending three species, the *s. nux vomica, colubrina*, and *volubilis*. See COLUBRINUM, NUX VOMICA, FABA INDICA.

STUM. See MUSTUM.

STU'POR, (from *stupeo, to astonish*). LOSS OF FEELING. (See ANASTHÆSIA.) Sometimes the transitory numbness, occasioned by accidental pressure, on a nerve.

STU'POR DE'NTIUM. An affection of the teeth, in which a painful numbness is felt in the membrane which surrounds them, produced by taking acid and austere substances into the mouth.

STU'PA, (from στυφω, *to bind*). A STUPE, a piece of cloth, usually of flannel, dipped in a fluid, and applied to an affected part.

STYE, or STIAN. A small tumour on the edge of the eyelids. See CHALAZA; CRITHE, and HORDEOLUM.

STY'GIA A'QUA. See AQ. REGIA, under NITRUM.

STYLIFO'RMIS PROCE'SSUS, (from *stylus, a bodkin*, and *forma, likeness*). See STYLOIDES PROCESSUS.

STY'LO-CERA'TO-HYOIDE'US. (Stylo, from the *styloid process*, and κερατα, *horns of the hyoides*). STYLO-HYOID PROCESS. See STYLO-HYOIDES.

STY'LO-CHO'NDRO-HYOIDÆ'US. The name assigned by Douglas to one of the muscles called stylo-hyoidæus, because it is inserted into the cartilaginous appendix of the os hyoides.

STY'LO GLO'SSI, (from *stylus*, and γλῶσσα, *a tongue*), muscles which rise from the inner part of the styloid process, and go the whole length of the tongue, serving to expand it.

STY'LO HYO'IDES, vel CERATO-HYOIDÆ'US, rises by a long thin tendon from the basis and posterior edge of the processus styloides, and runs to the cornu and basis of the os hyoides. Generally its fibres pass on each side of the tendon of the digastric muscle. Sometimes another smaller muscle has the same origin and insertion.

STYLOI'DES PROCE'SSUS, (from στυλος, *a pencil*, and ειδος, *form*); *belemnoides, stiliformis processus*. The STYLOID PROCESS stands out obliquely forward from under the craggy part of the temporal bone, resembling in shape the ancient *stylus scriptorius*. Several muscles, rising from this process, borrow one half of their name from it; STYLO-GLOSSUS; STYLO-

HYOIDEUS; STYLO-PHARYNGÆUS, q. v. This process, even in adults, is sometimes ligamentous at its root, and occasionally composed of two or three distinct pieces. See TEMPORUM OSSA.

STYLOI'DES RADIA'LIS LIGAME'NTUM, is fixed round the neighbouring tuberosity of the os scaphoides.

STYLOI'DES U'LNÆ LIGAME'NTUM, is fixed in the os cuneiforme, and then in the os unciforme, from whence it is a little stretched over the fourth bone of the metacarpus.

STY'LO-MASTOIDE'UM FORA'MEN, *mastoidæum foramen*, is the orifice of the passage for the portio dura of the auditory nerve, which runs behind the tympanum.

STY'LO PHARYNGÆ'I, rise from the base of the styloid processes, and are inserted into the side of the pharynx, and the back part of the thyroid cartilage. They raise the pharynx and thyroid cartilage. See PHARYNX.

STY'LUS, (from στυλος, *a column*). The style or shaft of a plant, or, in botanical language, that part of the pointal which supports the summit.

STYMATO'SIS, (from στυω, *to have a priapism*). A bloody discharge from the penis, with violent erection.

STY'MMATA, (from στυφω, *to thicken*); *spissamenta*. Fluids or other substances added to oils, either on account of their odour, or for their preservation; and from thence the name was applied to the thicker, more solid odorous ointments. The hedysmata, similar in other respects, were liquids. Linden informs us, that the stymmata gave consistence or body to ointments; but that hedysmata were the juices from whence those were made. Schroder describes stymmata to be the spissamentum or sediment of flowers, &c. remaining, after maceration in oils and subsequent expression.

STY'PSIS, (στυψις, *astrictio*, from στυφω, *astringo*). This general term might have included strictures, and every coarctation of natural passages; but as the German authors confine it to constipation, and other strictures might not have been readily sought for under this term, we preferred the more limited signification. We have indeed mentioned the disease under CONSTIPATIO and OBSTIPATIO, q. v.; but were not then aware that our limits would admit of a more extensive range. We, therefore, omitted the organical causes; an omission which, with some others, we shall now endeavour to supply. We have already observed, that constipation is relative, and it is inconceivable with how little injury to the general health a long-continued obstruction can be borne. There are well-recorded instances of its having continued many weeks, and scybala, as well as other substances, have been retained many years. Thinner fluids have, however, in this interval, been discharged. In the schirro-contracted rectum, and some other cases of unconquerable, *though not perfect*, obstruction, a diarrhœa is apparently the real disease. (Callisen Acta Hafniensia, ii. 94). Cleghorn mentions constipation as endemic in Minorca; and it is not uncommon in warm climates, from excessive perspiration; nor in melancholic temperaments, from defective irritability.

The intemperate and continued use of astringents has been accused as a cause of stypsis, particularly the acacia; and when oak-bark has been employed in putrid fevers, instead of the cinconа, we have found costiveness peculiarly obstinate. In drinkers of spirits it has occurred with almost unconquerable violence.

The organical causes have been hæmorrhoids, a luxation of the coccyx, herniæ of different kinds, and, more internally, hardened scybala, and various foreign bodies, as beans, the stones of fruit, the seeds of grapes, convoluted worms, &c. Sometimes the intestines themselves have been organically diseased by cartilaginous hardnesses, polypi, sarcomata, or schirri. The lists of authorities for each cause would fill a page. Tumours, foreign bodies, displacements of the adjoining organs, a retroverted uterus, a steatoma of the bladder, a calculus pressing on the rectum, an enlarged prostate, the gravid uterus, a tumour between the vesica and rectum, a large placenta, a pessary, a schirrus, or an abscess between the vagina and rectum, and a schirrous uterus, have been all found to have occasioned obstinate, often fatal, constipation. Different parts of the intestinal canal have also coalesced, and occasioned, as may be supposed, unconquerable obstructions.

In many of these cases we cannot expect to be able to afford relief, and the common medicines have, in the articles referred to, and in many others, been mentioned with particular remarks. We may now add, that we perceive the authorities in favour of cold, particularly cold applications to the breast and extremities, numerous and highly respectable. Crude mercury and balls of lead have had their advocates, and fomentations of sena leaves to the bowels are recommended by Petit. (Memoires de l'Academie de Chirurgerie, i. 239.) The most curious remedy is broth made of a whole fowl, not plucked. Acta Naturæ Curiosorum, vii. 27, ix. 111.

STY'PTICA, (from στυφω, *to astringe*), *constrictiva*, STYPTICS, or medicines which stop hæmorrhages. Few of these are to be depended on, and they can be only trusted in very slight cases: the best is the lycoperdon, the agaric, or lint impregnated with the powder of vitriolated copper. Turpentine, alum, and vitriolated iron, are also employed.

The *pulvis stypticus Helvetii, pulvis febrifugus Germanorum*, consists of six parts of roch alum, and one of the dragon's blood. This form indeed differs from that prescribed by Helvetius; but it is more convenient, and more effectual. A somewhat larger proportion of gum kino is now substituted for the dragon's blood, which is known to be useless. The present form is, however, objectionable, as Tromsdorff has remarked that the kino decomposes the alum. Perhaps the catechu might be more conveniently substituted.

Solutio sulphatis cupri, in the Edinburgh new dispensatory, consists of sulphat of copper and sulphat of alumine, of each three ounces, dissolved in a quart of water and strained, to which an ounce and half of diluted sulphuric acid is added.

The *action of styptics* resembles that of ASTRINGENTS, q. v. In stopping bleedings they not only constringe the open mouths of the arteries, but they seem also to coagulate the blood.

STYRACIFLUA, (from *styrax* and *fluo, to flow*). See LIQUIDAMBRA.

STY'RAX, STORAX, (from στυραξ, *a reed*; be-

cause it was exported in reeds or canes), *styrax calamita*, an epithet chiefly confined to the dry storax: *styrax folio mali cotonei* of C. Bauhine; *styrax officinale* Lin. Sp. Pl. 635.

The fine sort, called the *red storax* very rarely met with, is the pure native juice which flows from incisions made into the trunk of the tree in masses, sometimes composed of whitish, and pale reddish brown, lumps, sometimes of an uniform reddish yellow, or brownish colour, unctuous and soft like wax, and free from visible impurities. The common storax is supposed to be the thinner juice thickened with saw-dust, for it is more fragrant than the pure sort, both while mixed with the saw-dust, and when separated by means of alcohol: its flavour is of the same kind. It is now brought in large pieces, of a reddish brown colour, softish, unctuous to the touch, but brittle and friable, and is the kind ordered by the London college. Storax in the lump or in the tear is in masses of uniform texture, and of a yellowish red or brownish colour, sometimes interspersed with whitish grains.

It is the produce of Syria, Cilicia, and Pamphylia, according to some authors of Italy and the Levant, and indigenous in several of the southern parts of Europe; yet the resinous drug is only to be obtained in perfection from the trees growing in Asiatic Turkey. The American kind is greatly inferior.

An ounce of common storax, according to Neumann, yielded to rectified spirit of wine six drams of resinous matter, to water half a dram of gum, and the remainder was saw-dust. On heating another ounce first with water, he obtained two drams of gummy, then with spirit half an ounce of resin. Pure spirit raises but little from the storax by distillation, but water takes up much of its flavour; and when nearly drawn off, a fine subtile essential oil rises, in the proportion of about ℈ii. from ℥xvi. The residuum, urged with a due degree of heat, afforded ʒix. of an empyreumatic liquor, followed by ʒii. ℈i. of thick butyraceous oil; and afterwards ℥ii. ʒi. of an empyreumatic oil, which had nothing of the smell of the storax, with ʒv. of an acid spirit. On washing the butyraceous oil with warm water, and setting the water to cool, a small portion of saline matter separates, resembling the flowers of Benjamin, and supposed to be of a similar nature. The same matter is obtained from the pure resin, by boiling in water. Though spirit carries but little from the storax in distillation, yet if twice its weight of the salt of tartar be added, a spirit is obtained strongly impregnated with both the taste and smell of this resin. The strongest and the most fragrant principle, separable from storax, is the subtile, slightly empyreumatic oil which arises first in distilling it.

It is chiefly used as a perfume, sometimes as a medicine, both externally and internally. It has been styled a resolvent and corroborant, and given in catarrhal complaints, coughs, asthmas, menstrual obstructions, as well as in ulcerations of the lungs, and other pulmonary diseases, from its affinity to the balsams, formerly so much esteemed. In nervous debilities, from its sensible qualities, it might be apparently of service, but it is now almost totally rejected from practice. The pil. è styrace was an opiate formerly much valued, but now expunged from the pharmocopœa of all British colleges, though those of London and Dublin retain the purified storax, and the medicine is still directed as one of the ingredients in the tinctura benzoes composita. See Lewis's Materia Medica. Neumann's Chemistry.

STY'RAX LI'QUIDA, *liquidambar*, is a resinous juice obtained from a tree in Virginia and Mexico, which Ray calls *storax aceris folio*, *liquidambar styraciflua* Lin. Sp. Pl. 1408. The juice is said to exude from the leaves of this tree spontaneously, but more freely from incisions made in its trunk; and sometimes obtained by boiling the bark and the small branches in water. It is at first of the consistence of thin turpentine, but by long keeping grows hard and brittle; of a yellow colour, inclining to red, a hot aromatic taste, and a fragrant smell, not unlike that of storax, heightened with a little ambergrise. Formerly it was used as a perfume, but is now scarcely known in the shops. That most commonly met with is of a weak smell, a gray colour, and supposed to be artificial, for four drams of common liquid storax yielded, with rectified spirit of wine, three drams and one scruple of resinous extract; of the remainder, water dissolved only a few grains; and on distillation with water, its essential oil resembled oil of turpentine: in a stronger fire, the empyreumatic oil which came over was mere pitch. The London college orders it to be purified by straining after solution in spirit of wine, and then distilling it until reduced to a proper consistence. Dr. Cullen says, that mixed in the proportion of one part of styrax to two of unguentum basilicon nigrum, it has been of remarkable service in paralytic cases, and particularly in debility of the limbs following rickets; but this he obtained from an empirical practice. See Neumann's Chemistry; Philosophical Transactions, N°. 313; Lewis's and Cullen's Materia Medica.

STY'RAX A'LBA. The WHITE PERUVIAN BALSAM.

SUBALA'RIS VE'NA, (from *sub*, and *ala, the armpit*). The AXILLARY VEIN.

SUBCLA'VIÆ ARTE'RIÆ, (from *sub*, and *clavicula, the clavicle*). The SUBCLAVIAN ARTERIES arise from the arch of the aorta, on each side of the left carotid, which commonly lies in the middle between them. The origin of the left subclavian artery usually terminates the aorta ascendens; and the right subclavian arises from the arteria inominata. These arteries on each side terminate at the upper edge of the first rib between the lower insertions of the first scalenus muscle, and as they go out of the thorax they are styled *arteriæ axillares*: in their course they give out the internal mammary, the cervical, the vertebral, and the superior intercostal arteries.

SUBCLA'VIUS MU'SCULUS, (from the same), rises by a small tendon from the anterior part of the cartilage of the first rib, close to the strong ligament which connects this rib to the clavicle, and runs along the whole under side of the clavicle into the coracoid process, where it is articulated to the clavicle. Its use is to bring the clavicle downwards and forwards.

SUBCOSTA'LES, (from *sub, under*, and *costa, a rib*), are situated more or less obliquely on the insides of the ribs near their bony angles, and run in the same direction with the external intercostals. They are fixed by both extremities in the ribs; the inferior being always

at a greater distance from the vertebræ than the superior, and several ribs lying between the two insertions.

SUBCUTA'NEUS, (from *sub* and *cutis*). See PLATYSMA MYOIDES.

SUBER. The external bark of the *quercus suber* Lin. Sp. Pl. 1413. CORK. When burnt it is used as an application to internal piles, and it makes a part of a remedy, formerly kept secret, for bronchocele, as it is said to contain an oil and salt, not very dissimilar to those procured from animal substances. In its unprepared state it is used for pessaries, and is an useful assistant in many mechanical contrivances of the surgeon; as, when properly chosen, it is soft and elastic.

Cork, from swelling in the stomach, is said to be poisonous; but its expansion is not sufficiently great to be dangerous.

SUBHUMERA'LIS VE'NA, (from *sub*, and *humerus, the shoulder*). See ARTICULARIS VENA.

SUBLIMAME'NTUM, (from *sublimo, to lift up*). See ENÆOREMA.

SUBLIMA'TIO, (from the same). SUBLIMATION, *elevatio*, the condensing and collecting in a solid form, by means of vessels aptly constructed, the fumes of bodies raised by the application of a proper heat. Fluids are said to distil, and solids to sublime.

The design of sublimation is to separate the more volatile, and often the purer, portions of a mixed body from the remainder, often to combine bodies while in a state of vapour, which will not admit of union in a solid or even in a fluid form. When the body sublimed is compact it is styled a *sublimate*; when loose and light, *flowers*. When the substance is not peculiarly valuable the sublimate or flowers are received in an inverted crucible, sometimes in a paper cone. The necessary heat is various; but seldom much below a red heat.

SUBLIMA'TIO URI'NÆ, (from the same). See ENÆOREMA.

SUBLIMA'TUM, (from the same). See MERCURIUS COROSIVUS ALBUS.

SUBLINGUA'LES GLANDULÆ, (*sub, under*, and *lingua, the tongue*), vel *Bartholinianæ*, vel *Rivinianæ*. See SALIVARES GLANDULÆ.

SUBLINGUA'LIS ARTE'RIA, *ranina*, is the second branch from the external carotid, rising a little above the superior guttural artery, running forwards, upwards, and over the cornu of the os hyoides, and sinking into the tongue to supply all the adjacent muscles.

SUBLUXA'TIO, (from *sub*, dim. and *luxo, to dislocate*), *subluxation*. Some authors extend the use of this term to violent strains, (see STREMMA), where the head of a bone is not quite out of its socket, but rests upon the brim.

SUBME'RSIO, (from *sub, under*, and *mergo, to plunge*); DROWNING, a variety of the *apoplexia suffocata* of Cullen, *asphyxia immersorum* of Sauvages. Drowning, since the institution of the Humane Society, has engaged the attention of numerous practitioners; attention, however, which has not been rewarded by proportional improvement; for we believe the practice of the French guards on the Seine, described by Pia, is fully as judicious, and we think more successful, than that suggested by the refinements of Dr. Cullen, J. Hunter, and their minor satellites. We are indebted to Van Helmont for the first hints respecting recovery; as, in the cure of hydrophobia, he immersed his patients in water so long as was sufficient to repeat the psalm, "Miserere." He owns that they were often taken up apparently dead; adding, that there was not much real danger in these appearances. The subject recurred to various authors who followed him; but has only within these thirty years claimed general attention. Persons immersed in water for five minutes are often recoverable, unless in their falling some blow has concurred in producing the event, or some sudden attack has occasioned their immersion. Even these considerations will not, however, always account for the want of success, and we are compelled to admit that irritability is not in every person again recalled with equal ease. Beyond this time, the hopes of recovery are less, in proportion to the time a person has been immersed, and after remaining twenty minutes in the water there are slender hopes. Instances are indeed recorded where recovery has followed after the immersion for sixteen, eighteen hours, three days; and, when the water has been frozen, even after fifteen days. Medical records are full of surprising stories, which require more than common faith to admit. It may be alleged, that the foramen ovale may continue open; and it has been said that negroes plunge their newly born infants in water, that they may become good divers, without knowing that such a foramen exists. Anatomy has indeed observed this passage pervious in the adult; but the event is too rare to explain the facts, and recovery, after twenty minutes immersion, is no common event.

The signs of drowning are those of death in general (see MEDICINA FORENSIS), with a darker livor on the countenance, and an absence of the marks of compression on the neck. Suffocation from deleterious gases is marked by a pale complexion. The reader who wishes, however, to acquire more minute information on this subject, may find it in Roderer's Opuscula de Submersis, et Colle Cosmitor Medicinæ Triplex.

The immediate cause of death from drowning has occasioned much controversy. The most obvious idea was, that the lungs were filled with water, which suffocated by preventing the access of air. De Haen supported this opinion by drowning cats in coloured fluids, when he found the lungs tinged by them. Many other authors, with Faissolle and Champeaux, enlisted on the same side; but Dr. Cullen soon suggested doubts against the conclusion, though he allowed the fact; and it is now, we believe, admitted, that when water is discovered in the lungs, it passes in after death, since animals, taken immediately from the water, are seldom found to have received any. The slightest irritation of any fluid, it is said, produces a stricture in the trachea, and prevents the access of the fluid; and though Morgagni (de Sedibus, &c. xix. 44), and others, found the epiglottis raised, this may have readily happened in the relaxation that occurs after death.

The other appearances, on dissection, are a collapsed state of the lungs, the heart on the right side turgid with blood, the left side and the venal system empty; water sometimes in the stomach (Morgagni de Sedibus, &c. xix. 41, 43); but the vessels of the brain are certainly not in every instance distended.

The immediate cause of death from drowning has

not been completely ascertained. From the time of Walter it has been supposed to be apoplexy (De Apoplexia, p. 56), and more lately from an accumulation of carbone in the lungs, which the air usually carries off. Both causes concur; and the spasm, probably induced on the glottis by the access of the fluid preventing respiration, accumulates the blood in the right side of the heart, and consequently prevents the return from the veins. If the stoppage of respiration soon produces death, and we have said that the time is various from the different irritability of different persons, no considerable accumulation will probably take place in the vessels of the head; but, if life continues for any period, such may occur. We have remarked that after about a quarter of an hour's immersion recovery is improbable, and after twenty minutes all exertions are usually unavailing. We mean not, however, to preclude attempts while recovery is possible; and within the periods mentioned, we are often obliged to continue our exertions with great perseverance for several hours before life returns. If the signs of death do not increase; if, on the contrary, a slight glow comes on; if the features recover their fulness, though in the most slight degree, it will be sufficient to urge the continuance of our efforts. Mr. Kite has recommended electricity as a means of ascertaining whether any irritability, in other words whether life, remains. But we had reason to believe, when in that article we noticed the subject, that though electricity excited, it also exhausted irritability.

Numerous useless refinements have been introduced into the science of resuscitation, as it has been quaintly called. The body, when taken up, should be wiped dry, covered, and carried, in at least a semi-erect posture, to a room where there is a large fire, and the necessary attendants only admitted. Warmth is most quickly administered, and warm flannel should be immediately applied, warm bricks to the feet, and warm sand to the pit of the stomach. Yet these applications should be conducted with some reserve: the colder the body, the slower should be the approaches of heat. We suspect that this caution has not been sufficiently kept in view; and, on this account, the warm bath so highly commended by some has not succeeded in the experience of others.

The chief change produced by drowning, we have seen, consists in the stoppage of respiration, and the consequent distension of the right side of the heart. Mr. Hunter considers that all our efforts should be directed to restore the action of the lungs, which will alone relieve the over-distended ventricle. There may be some doubts from the arguments already used, whether taking a little blood would not assist by unloading the heart; but, when the circulation is wholly stopped, blood will not flow, or the only effect will be to empty the veins around. Perhaps, therefore, Mr. Hunter has decided properly in forbidding *venesection* in the first instance, as not likely to be useful in lessening the load, and very certainly injurious in depressing the vis vitæ. *Inflating the lungs* is of the utmost importance, and this is effected by bellows, communicating with a pipe introduced into the larynx, or sometimes through an aperture between the rings of the trachea. The breath of a healthy person is occasionally substituted, closing the nostrils; but what would appear the most effectual is, the introduction of *warm* atmospheric air of a somewhat higher quality by a mixture of oxygenous gas. We should object to the air being *heated*, as well as to the introduction of pure gas, for the reasons which led us to object to a higher temperature. While air or gas is introduced, the thorax should be pressed, and the abdominal viscera raised against it, to change, in some measure, its capacity; for we have already observed, that, when a train of associated motions has begun, they are often continued, from whatever point the series has commenced. Bronchotomy, we think, has been too rarely employed; for in almost every other way the thorax is imperfectly dilated. Mr. Hunter supposes that the stimulus of the volatile alkali may be advantageously combined with that of warm air. In each case the accumulated froth often offers a powerful obstacle; and the bellows recommended by Gren (Physical Journal i.) and Hunter (Philosophical Transactions) is the best method of overcoming it.

While the lungs are thus stimulated, the stomach, with which the whole system so evidently sympathises, should not be neglected. By means of a flexible canula any stimulating fluid may be injected, and spirits, as well as volatile alkali, have been this way thrown in. The practice has not, however, been so common as from its obvious advantages may have been expected. The stomach brush, *ventriculi excutia* (see STOMACHUS ad finem), is, we observe, recommended in the Berlin Transactions.

A more ready access to the intestines is through the rectum; and the ease of the operation has apparently compensated for the less degree of sensibility of this extremity. Clysters have been very commonly employed, and they have been various in their nature and objects. Acrid purgatives thrown into the rectum was a measure of obvious utility; and other stimuli, as ammonia, mustard, rum, and brandy, have been added to water for this purpose. (Cullen, Currie, &c.) We find also, what appears more singular, that air alone injected as a clyster has been useful (Leipsic Commentaries, iv. 56); and Michaelis mentions the salutary effects of a clyster of vinegar and water. We have already spoken (see RESUSCITATIO) of the disadvantages of clysters of tobacco smoke, and, on examining the most approved authors, we find them generally reprobated in these cases.

Other obvious stimuli are ammonia, applied to the nose, and sometimes injected into the nares; external frictions with salt, with mustard, &c.; a strong light directed to the eye, or harsh sounds to the ear; and an electrical shock applied to the spine or the pit of the stomach. The first only appears to be useful, as the stimulus is conveyed to the lungs, and excites a convulsive action in them. (See STERNUTATIO.) The others are of a more doubtful nature, or evidently injurious. A singular irritation is mentioned by Chardenon, in the Dijon Memoirs, viz. irritating the lungs themselves, through an incision made into the thorax. In the Gazette de Santè we are directed to lay bare the lungs; but we need not add a remark on either plan.

When life begins to return we are directed to persevere in, or even increase, our efforts; but slight irritability, thus restored, would be soon exhausted by excess of stimulus. In this state there will be no objection to a slight bleeding; and it is often useful to pre-

vent determinations of the newly-restored circulation to different parts before the equilibrium is properly established. Light, warm, nourishing food, perfect tranquillity, with some easy motions, procured by laxatives or clysters, very slightly stimulating, will be necessary. Patients in this state must be carefully watched; for the latent "scintillula" will often quickly disappear. What, however, will appear of more importance is, that after life is fully returned, the accumulated irritability often brings on the most active inflammations, which we can venture only to relieve by topical bleedings, diluting liquors, opiates, gentle laxatives, and rest. They are sometimes so violent as to demand general, and even active, venesection.

Notwithstanding, however, the minute and scientific investigations of the ablest authors, the success of resuscitation is scarcely advanced. If a person is recoverable, common and obvious methods will succeed. If irrecoverable, all the efforts of the most refined science will fail. We have scarcely advanced farther than in destroying the popular prejudices of agitation, rolling on barrels, &c. The records of the Humane Society tell, however, a different story; nor should we doubt the results if the same plans in the same circumstances had not so often failed under our own eyes. The cause of humanity, however, prevents us from adding a word which would repress or chill any charitable exertion. Let every attempt be made; and should every thing fail, let the practitioner at least deserve success.

In the first volume of Dr. Fothergill's Works, we find the following popular detail of the method of treatment approved of by the Humane Society, which we shall for general information add.

I. The body should not be rolled on the ground, or over a barrel, nor lifted up by the heels, or be any other way roughly handled, or violently shook; but be removed to a convenient place, lying as on a bed, with the head a little raised, in as natural a position as possible.

II. The body, well wiped with a cloth, should be placed in a warm bed or blanket; but not too near a large fire. Bottles of hot water should be laid to the bottoms of the feet, joints of the knees, and under the arm-pits. A warming-pan moderately heated, or hot bricks wrapped in cloths, should be rubbed over the body, particularly along the back. The natural warmth of a healthy person, especially a child, lying close to the body, hath been found very efficacious. The room should be kept open and airy, with few persons in it. The shirt of an attendant, or skin of a sheep fresh killed and warm, may be used to advantage. Should the accident happen in the neighbourhood of a warm bath, brew-house, bake-house, glass-house, saltern, soap manufactory, or any fabric where warm lees, ashes, embers, grains, sand, water, &c. can be easily procured, it will be very proper to place the body in any of these, moderated to a degree of heat very little exceeding that of a healthy person.

III. The body being placed in one or other of the above advantageous situations, various stimulating means should be immediately employed. The most efficacious are, blowing with force into the lungs, by applying the mouth to that of the patient, closing at the same time his nostrils; throwing the smoke of tobacco up the fundament into the bowels, by means of a clyster-pipe or fumigator; a pair of bellows may be employed until the others can be procured; rubbing the belly, chest, back, and arms, with a coarse cloth, or dry salt, so as not to rub off the skin, or with a flannel dipped in brandy, rum, or gin; applying spirit of hartshorn, volatile salts, or the like, to the nostrils, and rubbing them on the temples frequently; tickling the throat with a feather, to excite a propensity to vomit, and the nostrils also with a feather or snuff to provoke sneezing. The body should at intervals be shaken, and varied in its position.

IV. If there be any signs of returning life, such as sighing, gasping, twitching, beating of the heart, return of natural warmth or colour, a spoonful of water may be administered, to try if the power of swallowing be returned; if it be, a spoonful or two of warm wine, or of brandy and water, may be given to advantage, but not before.

Early bleeding has been found pernicious, and even fatal; it is not always applicable, though it may sometimes be employed by a person of skill, to remove or prevent symptoms of inflammation.

The above methods of restoring life are applicable to various other cases of apparent sudden death, whether from hanging, apoplectic and convulsive fits, cold, suffocation by damps or noxious vapours, proceeding from coal mines, confined air of wells, caves, cisterns, or from the must of fermenting liquors.

See Tissot's Advice to the People; Medical Museum, vol. iii. p. 376, &c.; Dr. Cullen's Letter to Lord Cathcart on this subject; Roderer de Suffocatis; Goodwyn's Experimental Inquiry, apud the Connection of Life with Respiration; Kite's and Coleman's Essays; De Haen Ratio Medendi, xv. 161; ibid. Continuat. iii. 129; Gehler cur rarum sit Submersos, &c. Vitæ reddi; Vogel de Causis cur tot Submersi in Vitam non revocantur Pia Detail des Succès de l'Establissement a Paris, 1774; Hunter in the Philosophical Transactions, vol. lxvi.

SUBOCCIPITA'LES NE'RVI, (from *sub*, and *occiput*), the tenth pair of nerves (see NERVI). They are small, pass out at the foramen magnum, between the basis of the skull and the transverse process of the atlas, where they form a ganglion, and give branches to the adjacent muscles. After forming a sort of arch with an ascending twig of the first cervical pair, a branch is sent off, called the occipital nerve.

SUBORBITA'RIUS, (from *sub*, and *orbita*, *the ball of the eye*). A twig of the upper maxillary branch of the fifth pair of nerves, running on the lower part of the orbit of the eye, &c.

SUBPOPLITÆ'US, (from *sub*, and *poples*). See POPLITEUS.

SUBSCAPULA'RIS MU'SCULUS, (from *sub*, and *scapula*). See INFRA SCAPULARIS.

SUBSIDE'NTIA, (from *subsideo*, *to subside*). See EPISTASIS.

SUBSU'LTUS TENDINUM, (*sub*, *under*, and *salio*, *to leap*); a spasmodic or clonic convulsion, chiefly perceptible in the tendons of the wrist, but applied to any involuntary twitching, or spasmodic contraction of muscular parts. It is a common symptom of long pro-

tracted fevers, generally an unfavourable one, as it shows considerable debility, and is a frequent prelude to more general convulsions.

SUCCA'GO, (from *succus, juice*). See SAPO.

SUCCEDA'NEA, (from *succedo, to supply*). See ANTEMBALOMENOS.

SUCCENTURIA'TI MU'SCULI, (from *succenturio, to supply*) See PYRAMIDALES MUSCULI.

SU'CCHAR, and SU'CHAR. See SACCHARUM.

SU'CCI SCORBU'TICI. See COCHLEARIA BRITANNICA.

SUCCI'NGENS MEMBRA'NA, (from *succingo*). See DIAPHRAGMA.

SU'CCINUM, (from *succus*, because it was supposed to exude from a tree). AMBER; *Bernstein* of the Germans; *electrium, carabe, ambar*, and *ampar*, of the Arabians; *harpax*, of the Greeks; *harpago* of the Scythians; *glaura* of Paracelsus; *berenice, carabe, ambra, electrum, edets, aurum, elimpium*; is found in the Prussian dominions near the shores of the Baltic, and accidentally in other places, in considerable quantities.

The source of the amber was anciently little known. It was supposed to be a production of the black poplar, of which the name was *haurus*, corrupted to *hambrus* and *ambram*; but the resemblance between the gum of the poplar and amber produced the fable. When Leo Africanus tells us that the name of the whale, in the language of Morocco, is *hambara*, from whence he deduces amber, he evidently refers to ambergris.

Ancient mythology referred the origin of amber to the tears of the sisters of Phaeton, on the banks of the Po; and, as usual, fable had its foundation in history. Reinhold Forster has contended that Pytheas of Marseilles had sailed to the Baltic, because amber was known to the ancients; but, in fact, the Baltic was only known to the ancients by the name of *Germanicum mare*. "Et ab adverso, in Germanicum mare sparsæ glessariæ, quas electrides Græci recentiores apellavere, quod ibi electrum nasceretur." (Plinii, lib. iv. cap. 16.) These glessariæ, from the German, *glass*, amber, are called in another place austrania and actania, the Oeland and Gothland of modern geographers, which still furnish this curious mineral.

Amber also was never dispersed by naval conveyance. Affertur (says Pliny, lib. xxvi. cap. 7) a Germanis in Pannoniam, maxime proximam: inde *Veneti* primum, quos Græci Henetos vocent, rei famam fecere, proxime Pannoniæ id accipientes, circa mare Adriaticum. It is expressly said to have been brought down the river Rhadhun, in which we clearly perceive the etymon of Eridanus, the Po, and the source of the Grecian fable.

The colour of amber is yellowish, with often a shade of reddish brown, sometimes green, or of a yellowish white, usually semitransparent, but when green or whitish, opaque. It is brittle, its fracture conchoidal, and its specific gravity 1.078. It is found in nodules, sometimes, though rarely, of a considerable size; in alluvial districts, mixed with pyrytes, and the remains of trees and other vegetables. Amber does not melt in fire, and inflames: it is thus distinguished from copal and honey-stone.

When amber is powdered, the smell is slight and not unpleasant, but increased on heating. When it begins to melt, a part of its acid separates: if exposed to the air, it takes fire, and burns with a yellowish flame, exhaling a dense, pungent, aromatic odour. Its coal is black, light, and shining, with difficulty reduced to ashes. From half a pound of amber the greatest quantity of ashes was twelve grains.

Water at any temperature does not affect amber. Alcohol, by long digestion, or repeated distillation, dissolves a portion of it, and the colour of the tincture is a reddish brown. Proof spirit has no action on it. Levigated amber, slowly digested with a pure alkaline ley, forms a thick saponaceous mass, soluble both in water and alcohol, depositing needle-form crystals of a bitterish taste. This is the *tinctura succini tartarizata* of former pharmaceutical authors. When amber has been roasted or melted it is soluble both in expressed and volatile oils, forming *varnishes* of different kinds; and Hoffmann found it soluble in oil of almonds, forming a gelatinous mass, when mixed with water. In Papin's digester ether acts on amber imperfectly.

Amber is not affected by diluted acids. With concentrated vitriolic acid it forms a dark-coloured resinous mass, exhaling a large quantity of volatile, sulphureous acid. Nitrous acid converts it into a friable resin, producing large quantities of nitrous gas. The resin is soluble in the diluted nitric acid. Amber detonates with melted nitre, leaving a soft slimy substance mixed with prismatic crystals, probably the succinated kali.

Alone in close vessels, exposed to heat, it discharges a large quantity of carbonic acid, and carbonated hydrogen, with a clear fluid, whose odour is peculiar, and not disagreeable, containing a little acetous acid. This is styled the *spiritus succini*. It is followed by a thin, clear, yellowish oil, smelling like petroleum, containing, either in a state of mixture or solution a crystaline salt, the SUCCINIC ACID, q. v. The oil becomes thicker and darker, and the remainder is a thick black shining coal.

Oil of amber is separated from the acid by repeated washing, and purified by distillation with carbonated soda or kali.

From these facts there is great reason to suspect that amber is a vegetable oil, mineralised by the vitriolic acid; for, contrary to the opinion of Lewis, it is acted on by alcohol, and the tincture becomes milky by the affusion of water. It has, however, been the subject of some surprise how this vegetable juice is found in climates so distant, and of such varied temperature; for amber is found, it is said, from the gulph of Bothnia to Numidia; nor is the size of the masses, sometimes found, less inconsistent with its being a vegetable exudation. Patrin cuts the knot, and supposes in its natural history that it may be *honey*, mineralised by the vitriolic acid; for he adds, where bees are found amber may be discovered. The electric quality of amber is sufficiently known, and insects are found in it in their natural state, as if in a moment killed or unwilling to escape. This has furnished Patrin with a strong argument in favour of his hypothesis; for insects are not found, he observes, except in substances on which they feed.

In Holland, a vegetable resin, called GUMMI DE LOOK, q. v. is sold under the name of American am-

ber; but it is less electric than amber, wants its peculiar smell when burning, dissolves readily in spirit of wine; and, when distilled, it does not afford the principles which distinguish amber.

To procure the salt, amber is powdered and mixed with three times its weight of white sand: the retort is half filled, and the fire gradually increased to near the boiling point. The heat is then farther increased, and the receiver, left unluted, may be occasionally removed, to sweep out the salt and prevent its melting with the oil that rises: the distillation is continued until no salt is seen to arise, and that which is obtained must be dried by pressing it gently between some sheets of spongy paper. It is purified by boiling in common water, and crystalising repeatedly until sufficiently freed from the oil. When pure, it is of a white colour, of a pungent, penetrating, grateful, acid taste; dissolves in rectified spirit of wine with difficulty, though assisted by heat, but readily in water.

The salt of amber is often adulterated with sal ammoniac; but this is discovered by an urinous smell arising on rubbing it with the salt of tartar; and with nitre, which is discovered by the nitrous taste. When mixed with cream of tartar, on adding water, the salt of amber is readily dissolved.

Amber itself was formerly commended in hysteria and menstrual obstructions, but from its chemical qualities it seems incapable of producing any change in our constitutions; nor when combined with pure kali (Hoffman Observationes Physico Chemiæ, ii. 202), or with sweet spirit of vitriol (Essentia Succini Pharmacopœiæ Witteburg), with alcohol (Essentia Ordinaria, ibid), or with salt of tartar previously digested and distilled, does it seem to have been more effectual.

The fumes of burning amber have been employed to correct bad smells, and when received on cloths been supposed to assist the effects of friction in rheumatic and paralytic cases; but in this form the remedy has been long disused.

The salt given in doses from gr. iii. to ℈i. is extolled by Boerhaave as an antihysteric, and styled a diuretic and sudorific. Alston thought that when divested of the oil it was not superior to common salt; and Dr. Cullen, that when genuine and purified, it was little better than a vegetable acid. At present it is used to render the operation of aloëtic and resinous purges more mild, as well as more certain, and as antihysteric and sometimes as a diuretic. Dose, five to fifteen or twenty grains.

The *rectified oil* hath a strong bituminous smell, and a pungent acrid taste; it increases the heat, and promotes the fluid secretions. It is chiefly used as an antihysteric; an assistant to emmenagogues; in epilepsy; hooping-coughs; and other convulsive complaints, in doses, from five to twenty drops. Externally it is applied to weak, rheumatic, and paralytic limbs, and as a warm stimulant to the spine, mixed with a moderate portion of sweet oil. Obstinate intermittents are said to have been cured by it. The Swedish College directs one ounce of amber to be digested in four ounces of vitriolic ether, and given from twenty to sixty drops in the complaints for which the oleum succini is prescribed. But this formula we have said is useless. The London College order the salt and oil to be obtained from two pounds of amber placed in a sand-bath, and gradually increasing the heat, whence an acid liquor, oil, and salt mixed with the oil, will come over. To purify the salt, half a pound of it is boiled in a pint of distilled water, and set to crystalise. The oil is purified by three distillations. Its dose is from five to thirty drops; and it has been found extremely useful in epilepsy, hysteria, and other spasmodic affections; tetanus (Rush in the Memoirs of the Medical Society, London, vol. i.) hooping cough, particularly when rubbed on the spine.

Several preparations have been made from amber, but they are rarely used. See Neumann's Chemistry; Tournefort's, Lewis's, and Cullen's Materia Medica.

SU'CCINUM CINE'REUM GRISE'UM. See AMBRAGRISEA.

SU'CCINIC ACID; ACID or SALT of AMBER, (from *succinum*), rises, we have seen (see SUCCINUM), in the distillation of amber in the form of a crystaline salt, of a dark, yellowish brown colour, from some admixture of oil. It is purified in the manner already described, or more readily by the process described by Lowitz of passing a saturated solution of the salt through a filter of charcoal (Crell's Chemical Annals, 1793). The German chemists obtain about one-thirtieth of the amber in this form; the French about half the quantity. It is very acid to the taste, though not soluble in very cold water, requiring at the temperature of 50° nearly thirty times its weight, though of boiling water only four times. Its crystals are truncated three-sided prisms; but when prepared in Lowitz' method, thin four-sided tables. It is volatile in a gentle heat, but neither efflorescent nor deliquescent. It burns when exposed to the blow-pipe, and detonates with nitre, leaving, when heated in close vessels, carbonated potash, mixed with charcoal; thus affording a strong presumption of its vegetable origin.

Alcohol in a boiling heat dissolves this acid in nearly the proportion of one-fourth; but almost the whole is deposited on cooling. If the acid, combined with its oil, is dissolved in alcohol, and six times the quantity of water added, the whole becomes milky, and the water will then carry the acid through a filter in a pure state. Nitric acid dissolves the succinic, without converting it into the oxalic as Westrumb supposed.

SU'CCINATS. Salts formed by the succinic acid, with alkalis and earths. They are little known, and not employed either in medicine or the arts. The affinities of the succinic acid are greatly disturbed by any admixture of the oil of amber. The carbonic, boracic, the benzoic, and acetic acids certainly rank below it.

SUCCI'SA, (from its being indented, or *cut* into small notches); *morsus diaboli; scabiosa folio integro.* COMMON DEVIL'S BIT, *scabiosa succisa* Lin. Sp. Pl. 141, grows in meadows and pasture-grounds, and flowers at the end of summer. The roots are said to be alexipharmic; the leaves, which are nearly similar in their virtues, are often sold for those of common scabious: they are bitter, and, as it is said, resolvent. See SCABIOSA.

SU'CCUBUS, (from *succubo, to lie under*). See INCUBO.

SU'CCUS I'NDICUS PU'RGANS. See GAMBOGIA.

SU'CTIO, (*a sugendo*). In sucking, children surround the nipple with their lips, and applying the tongue to its point, form a vacuum by drawing it back. The milk consequently flows into the mouth. Too great confinement of the tongue, by too short a frænum, will, of course, prevent this operation. A similar effect will follow when the tongue from its size does not move readily over the palate; but we have introduced this article to remark, that we perceive numerous instances where sucking was difficult, or impossible, from a defect of the uvula. Acta Eruditorum, 1710, p. 408; Salmuth Observationes, cent. iii. obs. 6. See also Memoires de l'Academie de Chirurgerie, iii. 9.

SUDA'MINA, (from *sudor*). HEAT PIMPLES, or an eruption of pustules, which succeed violent sweats. Also a kind of symptomatic miliary fever. See BOA, DESUDATIO, and PHLYCTIS.

SUDATO'RIUM, (from *sudo, to sweat*). See ACHICOLUM.

SU'DOR, (from ὕδωρ, *moisture*). SWEAT, is that fluid which transudes through the skin after much exercise, or any cause of increased heat. The discharge is almost wholly serous, with a small proportion of animal matter, and sometimes an increased one of gluten and the usual saline contents of the serum.

This evacuation is sometimes wanting, and persons enjoy good health whose linen is scarcely soiled after wearing many days: in many no art can excite it; in others it is free, particularly when the heat is most slightly increased, or after very inconsiderable exercise. In many diseases it is excessive, and, as it is styled, colliquative, since it melts down the bulk and the strength. In some cases it has been described as sweet; and we have found, in the course of this work, instances of almost all the serous evacuations becoming sweet. (See DIABETES and SALIVA.) We ought perhaps to add, that Rhodius, one of the authors who mention this change, attributes it to eating honey. When cold, it arises from relaxation of the exhalents, and it is a symptom of extreme danger. Partial sweats also in acute diseases are dangerous symptoms; but are sometimes constitutional; and, if no disease concurs, of little real importance.

The sweat is sometimes highly fetid, and this is no uncommon circumstance in the feet, though it is sometimes exhaled from every part of the body; and an instance of this, recorded by De Montaux, is said to have arisen from a suppression of the milk. It has sometimes been described as resembling in smell garlick, musk, and sulphur: if received in linen, which is afterwards confined, the smell of musk is very obvious. In suppressions of urine it occasionally partakes of its smell; and in ileus it has been found stercoraceous. The colour is also various. It is described by Borelli and Paulini as green; in bilious cases it is said by Bianchi to be yellow; in persons of a dark complexion we have seen it brown, and it has been spoken of as black. In collections of no great credit there are cases of its being red; but we greatly doubt if, without a miracle, or in the fictions of the poet, it has ever been found bloody.

It is occasionally milky, sometimes gelatinous or oily; in calculous cases it is said to be sandy, in arthritic ones it is more certainly so, or rather tophaceous, and we have suspected that the scurf in cases of syphilis is not merely a cutaneous change.

SU'DOR A'NGLICUS, *hydronosos, hydropyretos, gargeatio*, the SWEATING SICKNESS, included by Dr. Cullen under typhus. (See HELODES.) When Henry VII. first landed with his army at Milford Haven, in the year 1483, it appeared amongst them. In 1485, it occurred in London, but soon disappeared, though it returned five or six times: the last return was in 1551. It was said that Englishmen, whether they resided at home or fled into other countries, were attacked, whilst foreigners in England were unaffected. The disorder attacked with a pain in the neck, scapula, legs, and arms: sometimes a kind of warm vapour, or flatulence, only seemed to run through those parts, succeeded by a profuse sweat, for which the patients could not account. The internal parts became first warm, and soon after incredibly hot, the heat diffusing itself to the extremities. An intolerable thirst, restlessness, and sickness, were the next symptoms, succeeded by an excessive head-ach, delirium, excessive debility, and an irresistible necessity of sleeping. The sweat ceased early, and the limbs became moderately cool; but when this evacuation was afterwards promoted, the smell was disagreeable, the discharge, as is said, coloured, and of an unusual consistence. Some were seized with a nausea, others with vomiting; all, without exception, were afflicted with a difficulty of respiration. The urine was of a thicker consistence, and tinged with a fainter colour than usual. The pulse was rather quicker than natural. Those who breathed the purest air, and had the best constitutions, escaped most easily. The disease was undoubtedly an ephemera of the most asthenic kind, and, if we can discern the truth in the heterogeneous mixture of fable, which arose from the terror this fever excited, there will be little doubt of its having arisen from specific contagion, which at last lost its effect by the constitutions being habituated to it. The contagion was undoubtedly produced by confinement in the close ships. The records of medicine offer nothing analogous, *nihil simile aut secundum*, except the extension of this epidemic to the continent within the period assigned.

The means that were found to be the most salutary, were to keep up the sweat, after it began, at least for twenty-four hours, for by that time the disease terminated. During the sweat, no more aliment was taken than the strength required; sleep was forbidden; and when the sweating was over, the patient was to be cautious in going abroad. Caius and Willis de Ephemera Britannica.

SUDORI'FICA, (from *sudor*, and *fio*). SUDORIFICS; *hydrotica; hydrotopsea*; medicines which excite sweat. See DIAPHORETICA.

As the sweating point was found by Dr. Alexander to be very little above that of animal heat, and as the heat of different persons varies, or as the disease may occasion some variety also in our conduct of this evacuation, we must raise or depress the temperature according to the circumstances. There are, however, few diseases, except rheumatism, where active sudorifics are now recommended.

SUFFIME'NTUM, (from *suffimen, a perfume*). A FUMIGATION; *hypocapnisma*. Those prepared for pleasure are generally formed of such sweet substances as are usually agreeable, and those which are formed for health generally calculated to affect the mouth,

throat, or other part to which they are to be applied, in such manner as to produce some important alteration for the removal of some disease. They are generally stimulant or antiseptic; sometimes expectorant.

SUFFOCA'TIO, (from *suffoco*). SUFFOCATION. We described shortly in our first volume the different kinds of DYSPNŒA, *vide in verbo*, but our practical remarks were confined to that species which arises from spasm, and a subsequent accumulation of mucus. The terms submersio and suspensio reminded us of that greater degree of dyspnœa, arising from other causes, which often terminate fatally.

The symptoms of suffocation are described by Dr. W. Musgrave in the Philosophical Transactions, N°. 240; but they are sufficiently known; nor need we repeat what we have already observed on this subject, in the article MEDICINA FORENSIS. The most frequent cause is deleterious vapours, and of these the chief is the carbonic acid gas, either from fermentation, the fumes of charcoal, or of a lime-kiln. Other gases are the choke damp of mines, probably hydrogenous gas, and one that proved extensively fatal in France some years since, the gas from vaults, probably hydrocarbonate with hepatic gas. In all these cases the vessels of the brain are found to be turgid, the stomach filled with a frothy fluid, the right ventricle of the heart, with the venæ cavæ, and pulmonary artery, distended with blood (Portal Memoires de Paris, 1775); agreeing with the appearances after drowning.

Suffocation sometimes occurs from a wound in the lungs, and the consequent effusion of air, an instance of which occurs in Bromfield's Chirurgical Operations. Morbid organic affection of the trachea, as abscesses; caruncles; polypi; watery tumours; the broken rings of the aspera arteria, pressed inwards; scrofulous tumours; schirri; and sphacelus of the cricoid cartilage, have been the causes of death by suffocation. Various foreign bodies, purulent matter, a part of the lungs themselves, worms (Haller, Opuscula Pathologica Obs. 10.), flies, a blade of grass (Lower and Clark, Philosophical Transactions, N°. 5.), blood and pus (Morgagni de Sedibus, xix. 49—51; Wathen, Memoirs of the Medical Society, i.; Wilmer's Cases and Remarks), have produced suffocation. A singular case is recorded, in the Acta Naturæ Curiosorum, of suffocation following the distension of the œsophagus, by attempting to swallow the yolks of ten eggs.

Diseases of the lungs themselves, as an effusion of water (Smyth, in the Medical Communications, ii. 31), broken ribs (Cheston), a fleshy mass adhering to the pleura (Bonetus), are obvious causes of suffocation. Serum in the mediastinum, a polypus or aneurism of the heart, or even a distended stomach, have been enumerated as sources of death. Substances stopping in the back part of the fauces are sufficiently known; but even the tongue itself, when the frenum is loose, may be swallowed, or at least turned back so far as to produce suffocation. This is said sometimes to happen to infants, and it has been the instrument of the suicide. Suppressed gout and suppressed evacuations produce dyspnœa; but are seldom immediately fatal by inducing suffocation.

When the causes are such as will admit of relief, they must of course be attended to; but in other cases, the means mentioned under the article RESUSCITATIO, q. v. are the most promising. Pure air, and oxygenous gas, somewhat diluted; applications of vinegar, and ammonia; dashing cold water; and Bucquet adds, in the Memoires de la Societè de Medecine, 181, smoking spirit of salt and volatile spirit of sulphur.

SUFFOCA'TIO STRI'DULA, (from *suffoco, to choke*, and *strideo, to make a noise)*; the CROUP; *angina interna, latens & difficilis, angina membranacea, perniciosa & polyposa, asthma infantum spasmodicum, cynanche stridula, morbus strangulatorius truculentus infantum*, is a disease that chiefly attacks children, rarely if ever any one after twelve years of age. Dr. Cullen names it *cynanche trachealis*, defining it a tracheal quinsy, attended with difficult respiration, ringing sound in inspiration, clangous cough, no tumour commonly in the throat, deglutition a little impeded, and inflammatory fever. See ANGINA STRIDULA.

Winter is the season in which this disease chiefly occurs: long continued catarrhs from the measles, hooping-cough, or the small-pox, are predisponent causes; cold and moist weather is supposed to contribute, for it is most common about the sea coast, and in low marshy situations; though sometimes met with in midland countries, and its attacks are sometimes repeated in the same child, if it should have the good fortune to recover.

The seat of the disorder is the cavity of the windpipe, from a little below the glottis downward; and the disorder itself, as we have seen, consists of the fibrin separated there, and becoming so thick that the air can no longer pass freely into the lungs. The back part of the trachea, where there are no cartilages, seems, from the inspection of those who die of this disease, to be its first and principal seat; as this morbid membrane is often found exclusively there. It is not evidently contagious.

The croup must be distinguished from the catarrhus suffocativus of Etmuller; from a severe cold; from peripneumonic complaints; and from such symptoms as arise from extraneous bodies lodged in the trachea: an instance of which Dr. Home mentions in his Enquiry into the Nature, &c. of the Croup. In general the harsh sound of the breath, not of the cough, will point out the disease.

The inflammatory affection of the early stage usually passes off with little notice, as it is not distinguishable from a common cold. The croupy breathing then comes on suddenly, often in the first sleep, and the disease appears in all its violence before it is apprehended. The remedies we have already enumerated in the article referred to, and have added the little expectation to be entertained from the best concerted plans.

See Cullen's First Lines, edit. 4. vol. i. p. 292; an Enquiry into the Nature, &c. of the Croup, by F. Home, M. D.; London Medical Journal, vol. i. p. 217, 226; Edinburgh Medical Commentaries, vol. v. p. 6, 7; Alexander on the Croup.

SUFFU'SIO, (from *suffundo*, because the ancients supposed the opacity proceeded from something running under the crystaline humour). See CATARACTA, GLAUCOMA, and PSEUDOBLEPSIS.

SUFFU'SIO AURIGINO'SA, (from *the yellow colour*). A JAUNDICE.

SUGILLA'TIO, (from *sugo, to suck*). An inflammation of any part; used as synonymous with ecchy-

moma, or ecchymosis; but by this word a different cause is expressed: an ecchymosis is occasioned by extravasation; suggillation by suction; as when cupping-glasses are applied to a part, which, by removing the pressure of the air, distend the vessels with red blood, even those which do not usually receive it.

Morgagni de Sedibus, &c. iii. 16, styles red spots on the brain *sugillatio cerebri*, and employs the same term to express red spots over the whole body, iv. 9.

Considering sugillation as synonymous with ecchymosis, this disorder, when seated in the eye, takes the name of blood-shot; when the skin is livid it is termed *pelioma*; if black, *melasma*. Bell observes that in blood-letting, a small tumour is often raised immediately above the orifice in the vein, by the blood insinuating itself into the cellular membrane of the neighbouring parts, which, when round and small, is termed a *thrombus*; when more diffused, an *ecchymosis*. Linnæus names it *sugillatio*. See ECCHYMOSIS.

Sugillatio sometimes proceeds from apoplexy, occasionally from epileptic paroxysms, sometimes even from vomiting.

SU'LPHAS, (from *sulphur*). SULPHATES. Salts formed by the combination of the sulphuric acid with different bases.

SU'LPHIS, (from the same). SULPHITES. Salts formed by the combination of the sulphureous acid with different bases.

SU'LPHUR, (Hebrew *goprith*). BRIMSTONE; *abric*; *alcubrith*; *anpater*; *appebrioc*; *aquila*; *chibur*; is a solid brittle concrete, of a yellowish colour, inclining a little to green, and in some degree glossy; sometimes found native, in the earth, in pure bright yellow, semitransparent masses; but more commonly in opaque ones, of a greenish or grayish colour, intermixed with various earthy or stony matters. Its primitive form is a very acute octohedron, composed of two tetrahedral pyramids, with scalene triangular faces, joined base to base: the common base of the two pyramids is a rhomb, the two diagonals of which are in the proportion of five to four. From this form different crystals are derived, but, except those from Sicily, they are small and ill defined, though externally brilliant. The fracture is fine grained, uneven between the conchoidal and splintery. It is soft, brittle, and of a specific gravity of 2.0 nearly.

Sulphur by friction acquires a negative electricity, and the transparent crystals are in a high degree doubly refractive.

The impure sorts are called SULPHUR VIVUM, and ALKIBRIC, q. v.

The native sulphurs are met with chiefly in the neighbourhood of volcanos in Italy, and in some of the German, Hungarian, and Swedish mines.

Sulphur rarely occurs in primitive mountains, but is chiefly found in nodules, in beds of secondary gypsum, sometimes in beds of indurated marl, or more compact lime-stone. Native sulphur contains a mixture of earth only: the sulphur procured from copper ores has usually a small proportion of arsenic, and on this account the Sicilian sulphur is preferred as a medicine.

The largest quantities are brought into England from Saxony in irregular masses, which are afterwards melted and cast into rolls, being first mixed with coarse resin, flour, &c., which render its colour lighter. The red sulphurs contain a portion of arsenic; and sulphur is an ingredient in most kinds of ores. The mineral from which the greatest quantity is extracted is the yellow pyrites, and the sulphur is separated by means of heat, falling as it melts, into proper vessels. It is purified by sublimation, and then called the *flowers of sulphur*. In this form sulphur becomes an article in medicine; but it must be washed frequently with water, and a very dilute solution of kali, to separate the superfluous acid adhering to it. When perfectly prepared by a process described in the Theatrum Chimicum, it is called *foliata terra*.

Sulphur was supposed to be composed of the vitriolic acid and phlogiston; but is now considered as a simple body, forming vitriolic acid by the addition of oxygen. To the taste it is insipid, though gritty between the teeth, inodorous unless when rubbed, but it then exhales a slightly fetid odour. When a roll of sulphur is held in the hand, it soon cracks, with a sound not unlike that of an electrical spark, and at the same time contracts for a short period a disagreeable smell. It melts at 224° of Fahrenheit into a transparent brownish red fluid. When the heat is increased it sublimes, and at about 300° becomes viscid like treacle. The vapour then takes fire, and the flame spreads to the rest of the mass. When this viscidity takes place, the sulphur may be again rendered fluid by lowering the temperature, but if poured in this viscid state into warm water, it will be brown, soft, and considerably plastic; and in this form it is highly useful to modellers, as it soon resumes its hardness. Fourcroy calls it an *oxyd of sulphur*.

Water in a state of steam is partly decomposed by melted sulphur; and an inflammable gas, supposed to be sulphurated hydrogen, is the result.

With oxygen, as we have said, sulphur forms an acid, called *sulphureous* or *sulphuric*, from the different proportions of this principle. The former seems to contain some sulphur in solution, and is less oxygenised. Nitric acid is decomposed on sulphur, forming sulphuric acid, while it yields nitrous gas. With alkalis, sulphur forms *alkaline sulphurets*; with most metals, *metallic sulphurets*; with hydrogen, *sulphuretted hydrogen*, formerly styled *hepatic air*.

Sulphur is sparingly soluble in alcohol by digestion, more copiously by exposing them to each other in a state of vapour, though the whole of the sulphur may be precipitated by the affusion of water. Oil of turpentine and essential oils dissolve it when hot, and the sulphur separates on cooling. Fat oils unite with sulphur, forming a deep yellowish brown fluid, with a strong fetid smell, and are styled *balsams of sulphur*. By long rest, in a cool place, they deposit the sulphur in octoedral crystals.

The flowers of sulphur are used in cutaneous eruptions, particularly the itch; and from its utility in some disorders of the lungs it has been called *anima pulmonum*. Pure sulphur loosens the belly, in doses of from ʒi. to ʒiii.; and from its gentle action on the large intestines is useful when the piles are troublesome; but its action is slow. It promotes perspiration, passes readily through the whole habit, and transpires through the skin, giving an hepatic smell to the sweat. In old gout and rheumatisms, coughs, catarrhs, and asthmas, it is said to be useful.

Sulphur, though an active medicine, restrains the

activity of some other very powerful ones; quicksilver, the regulus of antimony and arsenic it renders inert.

Various are the preparations of sulphur; but, for internal use, none excels, nor even equals, the flowers, which may be taken with mucilage, without disgust to the palate. Among other modes, the troches, directed in the dispensatory of the London college, is an elegant one, and are thus made. Take of flowers of sulphur, two ounces; clarified sugar, four ounces; rub them together, and by the mucilage of quince-seed added gradually, let them be formed into troches. Ph. Lond. 1788.

Sulphur has been used for fumigations to prevent infections, and from thence perhaps was employed in malignant fevers, and even the plague. We can scarcely account for the very exaggerated commendations of this medicine in such complaints from authors of character, and even also with vinegar it is said to be a certain prophylaxis. Rosenstein not only recommends it in cutaneous eruptions, but adds, that when these are repelled, they are again brought to the surface by this remedy, which relieves also epilepsies from the same source. Grainger has informed us that if two drams are given in brandy an hour before the attack of a paroxysm of an intermittent, the fit will be prevented (Historia Febris Anomalæ Batavæ). Its effects in diseases of the breast are attributed also to its diaphoretic power, but we have not perceived this effect until it has been for a long time employed; and it is probable that, in Grainger's formula, the brandy was the most active ingredient. It has been recommended in ulcers of the breast and hooping cough; but is at present employed in neither disease. From its power of rendering metallic substances inert it has been given to repress excessive salivation from mercury, though with little advantage; and Navier thinks he found it highly useful as an antidote in a case where verdigrease had been swallowed.

The *tincture of sulphur* is a solution of the alkaline sulphuret in spirit of wine, and is highly recommended in rheumatism, gout, as well as cutaneous affections, in a dose of from forty to sixty drops. It must, however, be recently prepared, as on keeping the sulphur is deposited.

The *syrupus sulphuris,* arcanum bechicum of Willis, a syrup prepared from an aqueous solution of the alkaline sulphuret, has been celebrated in phthisis, in doses of half an ounce to an ounce; and in cases where the secretions from the bronchiæ have been languid.

Hepar sulphuris ceratum is the common hepar sulphuris dissolved in distilled water, to which so much wax is added as will bring it to the consistence of a soap. It is used as an antidote to arsenic and mercurial poisons.

Hepar sulphuris martiale is composed of one part of salt of tartar, as much sulphur, and half a part of the filings of steel, and is a powerful antidote, according to Navier, in cases where preparations of mercury, copper, or lead, have been swallowed as poisons.

Sapo veneris lunæ and *solaris* are prepared by forming soaps with hepar sulphuris, dissolved in a caustic ley, with the oil of white poppies. The proportion of copper and silver are about $\frac{1}{12}$; of gold $\frac{1}{16}$. The first is said to be an active diuretic; the others both diuretic and laxative: the last is said to be particularly useful in gout. (Bucholtz de Saponibus quibusdam Mineralibus.)

The only other preparations of sulphur are the LIQUORES PROBATORII, v. PLUMBUM. See Lewis's Materia Medica; Neumann's Chemistry.

SU'LPHUR AURA'TUM ANTIMO'NII. See ANTIMONIUM.

SU'LPHUR PRÆCIPITA'TUM. See ANTIMONIUM.

SU'LPHUR VITRI'OLI ANO'DYNUM MARTIA'LE. See FERRUM.

SU'LPHUR VI'VUM. See SULPHUR.

SU'LPHUR A'LBUM. See ETHEL.

SU'LPHUR PRÆCIPITA'TUM; *lac sulphuris; magistery of sulphur;* PRECIPITATED SULPHUR. Take of sulphurated kali six ounces; distilled water, one pound and a half; vitriolic acid, diluted, as much as is sufficient; boil the sulphurated kali in distilled water until it be dissolved; filter the liquor through paper; to which add the vitriolic acid; wash the precipitated powder till it becomes insipid, by pouring on fresh portions of water. (Ph. Lond. 1788.) This preparation differs but little in quality from pure sulphur, to which it is preferred only on account of its colour in unguents, &c. It acquires a more yellow colour from the light, and seems from some of its properties to contain a portion of hydrogen. See SULPHUR.

SULPHUREOUS, and SULPHURIC ACID, as already explained, sulphur with a less or greater proportion of oxygen, generally spoken of as one of the mineral acids, and agreeing with the rest in its power as a tonic, though sometimes supposed to excel the others in this respect. It is used externally as a rubefacient, and internally also as a remedy for itch. See PSORA, and CHEMIA.

It is seldom found pure in the shops, as it contains some sulphat of lead and of potash; but the proportion of either does not render it inconvenient as a medicine, though the chemist may find a redistillation necessary if used as a reagent.

SULPHUREOUS ACID GAS, is the sulphur, with a less proportion of oxygen than is sufficient to form an acid. It is chiefly used in fumigating vessels to pervent fermentation.

SULPHU'RES, or SULPHURE'TS; LIVERS OF SULPHUR; combinations of sulphur with different alkaline, earthy, and metallic bases.

SULPHURRETEN HYDROGEN; the modern appellation of hepatic air, the chief ingredient of the Harrowgate water. This gas is composed of 70.857 of sulphur, and 29.143 of hydrogen. Its specific gravity is 1.106, and it possesses the property of an acid uniting with metals, alkalis, and earths. These combinations are distinguished by the names of *metalline, alkaline,* or *earthy hydrosulphurets.*

SULPHU'RIS BA'LSAMUM. *Petroleum sulphuratum.* Take of flowers of sulphur, four ounces; oil of olives, sixteen ounces by weight; boil the flowers with the oil in a pot, slightly covered, until they unite. Ph. Lond. 1788.

According to the oil employed, it has acquired the appellations of *succinatum, terebinthinatum anisatum,* and *amygdalatum.*

SU'MACH, (from *samack; to be red,* Arabic). See RHUS.

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SUPE'RBUS MU'SCULUS, (as expresssive of *pride*). See ELEVATOR OCULI.

SUPERCI'LIA, (from *super*, and *cilium*, *the eyelid*). See PROCESSUS.

SUPERCILIA'RES MU'SCULI, (from *supercilia*), are fleshy fasciculi, which arise from the synarthrosis of the ossa nasi with the os frontis, run along the direction of the eyebrows, and are lost in the middle. They depress the eyebrows, and contract the skin over the nose.

SUPERCI'LIUM. See VALLUM.

SUPERCI'LIUM VE'NERIS. VENUS'S EYEBROW. (from the disposition of its leaves). See MILLEFOLIUM.

SUPERFŒTA'TIO, (from *super*, *above*, and *fœtus*, *an offspring*); *epicyesis*. SUPERFŒTATION, or the existence of two fœtuses of different ages in the womb at the same time. In the natural structure this probably never happens, as the os uteri is soon agglutinated; yet a possible case has been stated, viz. that a second impregnation may take place, soon after the first, by the same or a different man, which cannot be denied. Some appearance of probability has been given to this opinion by finding in the uterus two children of different sizes; but in this case, one has been constantly dead, and the time of its death could not of course be known.

Haller, however, in his Opuscula Pathologica, mentions a lady who died, and was found to have two uteri, each of an oval shape, and furnished each with its own peculiar vagina. A woman so formed, he adds, might be liable to one conception subsequent to another. Similar remarks are made by Dr. Purcell, in his account of a double uterus, published in the Philosophical Transactions, vol. lxiv.

A case of superfœtation occurred to Dr. Lobstein, professor of anatomy and surgery at Strasburgh, in a woman who was delivered of two children, one a month after the other; and he was able to convince himself that this circumstance is owing to her having two uteri, each of which has a distinct vagina. London Medical Journal, iii. 425.

SUPERSCAPULA'RIS INFE'RIOR, (from *super*, *upon*, and *scapula*, *shoulder-blade*). See INFRA-SCAPULARIS.

SUPERSCAPULA'RIS SUPE'RIOR. See SUPRA SPINALIS.

SUPINA'TOR RA'DII BRE'VIS; MINOR SUPINA'TOR, (from *supinus*, placed upwards, because it turns the palm upwards); rises tendinous from the outer condyle of the os humeri, tendinous and fleshy from the external and upper part of the ulna, adhering firmly to the ligament which joins these bones; passes over the capsular ligament, and under the longus, and is inserted into the internal anterior part of the tubercle of the radius.

SUPINA'TOR RA'DII LO'NGUS; *major supinator longus* of Albinus; rises fleshy from the outer edge of the os humeri, above the external condyle, twists round it, goes down the fore-arm all along the radius, covering the artery, and becoming tendinous where we generally feel the pulse: it is inserted into the anterior internal parts of the radius.

SUPPLE'TA ISCHU'RIA, (from *suppleo*, *to supply*). A SUPPRESSION OF URINE, from excess of other evacuations. See ISCHURIA.

SUPPOSITO'RIUM, (from *suppono*). A SUPPOSITORY; *prostata*, *hypotheton*, *balanos* and *balanocastanum*, from the similitude of form to an acorn. A long cylindrical body introduced into the rectum to procure stools when clysters cannot be administered. The most gentle are made of common salt and honey, which may be boiled to the consistence of a soft pill, and then rolled to the thickness of a goose quill, and an inch or little more in length: these are to remain until they are dissolved or discharged by the effect they produce: aloes, colocynth, and other ingredients, may be added according to the intention of the prescriber. A common or wax taper is equally convenient and useful; but this form is now disused.

SUPPRE'SSIO ME'NSIUM, (from *supprimo*, *to withhold*). See MENSES DEFICIENTES.

SUPPRESSO'RII. Diseases arising from or attended with impeded excretions.

SUPPURA'NTIA, (from *suppuro*, *to form pus*). SUPPURATIVES, *diapyemata*, *diapyetica*, *maturantia*. Suppuration is one of the terminations of inflammation, and is announced, we have said, by a less violent, more throbbing, pain, with frequent but irregular shivering. The over-distended vessel yields, but instead of exhaling a glutinous fluid, a purulent matter is secreted. Effusion is the consequence of a less, suppuration of a greater, degree of inflammation, which increases the tension of the arteries so far as to destroy their contractile power. *Suppurants* are consequently applications which either increase inflammation or relax the inflamed parts, inviting a large proportion of fluids. Of the latter kind are the simple poultices of bread and milk, with oil; of oat or linseed meal. Sometimes a slight stimulant, as the basilicon, is added. When, however, the tumour cannot be discussed, and the inflammation is not so considerable as to induce this necessary change, the applications are more warmly stimulant. The gum plaster is sometimes applied, and onions, or any stimulating, or as it has been styled *resolvent*, body is joined to the simple cataplasm. The bark has been useful as a suppurant, on the obvious plan of supporting the general strength. See INFLAMMATIO, and PUS.

SUPPURA'TIO, (from the same). *Purulentia*; SUPPURATION. See SUPPURANTIA.

SUPPURATO'RIA. The fever, which attends suppuration.

SU'PRA, (ὑπερ, *super*). When joined to other words it means above, or upon. E. G.

SUPRACOSTA'LES, (from *supra*, and *costa*, *a rib*). See LEVATORES COSTARUM.

SUPRASCAPULA'RIS. See SUPRASPINALIS.

SUPRASCAPULA'RES SEMI-ORBICULA'RES, are fibres which increase the breadth of the muscles of the upper lip.

SUPRASPINA'LIS, and SPINATUS; *superscapularis inferior*, and *suprascapularis*, arise from each side between the upper edge of the scapula, its spine, and the superior costa, runs under the acromion, and extensors of the scapula, goes across, adhering to the capsular ligament, and is inserted into the inner tubercle, near the head of the humerus. It raises the arm up-

wards, and pulls down the capsular ligament to secure it from injury.

SU'RA, (from the Arabic term *sur, to walk*). A name for the fibula, and for the gastrocnemii muscles. Sometimes the term implies a particular kind of wine.

SURA'LIS ARTE'RIA, (from *sura*). See TIBIALIS.

SURA'LIS VE'NA, is a branch from the beginning of the tibialis posterior.

SU'RDITAS, (from *surdus, deaf*). *Dysecœa, barycecœa, cophosis, paracophosis.* DEAFNESS. We have anticipated in part this subject, DYSECŒA, and SONUS, q. v. It will, however, be useful to bring all the facts into one view, which we shall attempt in the present article.

The ear, whether we consider its functions or diseases, may be divided into three parts, the external, the middle, and the internal chambers. Each of these may be the subject of diseases, which Dr. Cullen somewhat carelessly, "perfunctorie nimis," has divided into organic and atonic. To this may be added diseases arising from a want of elasticity in the organs, in consequence of effusion, and others which produce no change in the organisation.

Before, however, we mention the particular diseases of each part of the organ, we must speak of the more general ones, where the ear suffers as a portion of the nervous system. In palsy, in fever, from blows, concussion, and tumours on the brain, deafness is common. From continued headachs, from loud shrill sounds, and from thunder, this organ is often injured. Each portion of the ear sometimes experiences injury from inflammation, in consequence of repressed eruptions, repelled gout, the incautious use of mercury, suppressed hæmorrhages (Hoffmann and Wepfer), even suppressed tears, and sometimes, we fear, from the imprudent use of cosmetics.

Hearing is greatly injured by the loss of the external ear; but more so from diseases of the meatus auditorius. The passage is sometimes imperforated, and it has happened that it has been closed, not only by a membrane, but a more solid body extending some way down the meatus, or a polypus sprouting from its sides. An accumulation of cerumen in the meatus has destroyed the sense of hearing, and a want of it is equally injurious: numerous instances also occur of a gypseous substance, and various foreign bodies, as well as insects, having produced the same effect. It does not appear that inflammation of this passage produces deafness; nor is it evident that the meatus has any effect in increasing sounds except from its shape; but accumulations of purulent matter often produce deafness, and abscesses are not uncommon in scrofulous habits. The membrana tympani may injure the sense of hearing, if it be diseased; but, in general, its rupture, if the connection of the ossiculi is not destroyed, will not be injurious to it. This membrane, we are informed by Morgagni (De Sedibus, &c. xiv. 10), may be again repaired when broken. The membrana tympani has been found in a sheep covered with tubercles, and, in the human subject, deafness has followed the thickening of its substance (Bonetus). The same author records an observation of Laurenti, that it has been found covered with flesh. Lib. i. sect. xix. obs. 1. and 5.

The diseases of the cavity of the tympanum are accumulations of mucus, of sanies, or of *water* (Morgagni de Sedibus, &c. xiv. 9). This author adds also (Art. xv.) the intersection of innumerable preternatural membranes which he found on dissection. The Eustachian tube is sometimes obstructed by inflammation; and a catarrh, in this way, produces deafness. The same effect arises from its ulceration (Halleri Elementa Physiologiæ, v. 286), sometimes from the accumulation of mucus in it. (Wathen, Philosophical Transactions). When deafness arises from obstruction of this tube, Dr. Sims supposes that persons can hear better in a carriage, or where there is any considerable general sound; but this often happens when deafness proceeds from other causes. To the diseases of this part of the organ we may add a relaxation of the small muscles, which give tension to the tympanum, the want of the incus or an anchylosis of this bone with the stapes. Petit.

The diseases of the internal chamber are little known; but we can easily perceive that the membranes of this part may be inflamed, or covered with mucus, and it is possible that the quantity of the fluid may be lessened or its quality depraved; but this is suspicion only. We sometimes find, on dissection, the auditory nerve extenuated or degenerated. (Hoffmann de Auditus Difficultate.) Sylvius mentions also its atrophy, and Littre (Academie des Sciences, 1705, p. 53), an injury of the neighbouring nerves. Sandefort observed deafness arising from a hard body, pressing on the auditory nerve, and Severinus from an accumulation of serum near it.

In the more general affections of the head, the treatment must be regulated by the causes, and will, of course, depend on the management of each disease. Inflammation, from repelled eruptions, will require topical discharges, saline purgatives, diaphoretics, and rest. To restore the discharges is often beyond our power, and we must, after these medicines, endeavour to support the general health. Eruptions naturally returning have, however, we find, restored the sense.

The deafness which arises from the injuries to the meatus, or to accumulations in this passage, is more readily relieved. Warm water, or warm soap and water, will remove accumulated wax, and the frequent injection of watery fluids will be useful in cases of suppuration, to keep the wound clean. In scrofulous inflammations, every attention should be paid to establish an external drain, as the abscess will extend, and a caries come on, not only in the bony canal, but in the small bones of the second chamber, producing incurable deafness. Drinking salt water, sea bathing, and injections of sea water, are also necessary. Small doses of calomel seem peculiarly useful in such cases. Hoffmann recommends an alkaline ley, and Schneider a solution of sea-salt, as injections.

When the cerumen is deficient, the circulation also is peculiarly languid, and we have reason to suspect the tone of the muscles impaired. Numerous stimulants are in these circumstances recommended, as essential oils of different kinds, particularly turpentine, oil of amber, squills, roasted onions, garlic, galbanum, an oily infusion of cantharides (Hoffmann), juice of the sedum, the axunge of a serpent or an eel. Epithems of a similar kind are also often applied to the temples.

When the Eustachian tube is inflamed, and from this

cause no longer pervious, electricity has been sometimes recommended (London Medical Journal, x. i.); but this remedy has often failed, particularly in the hands of De Haen and Haller. Busson, in Haller's Disputationes Chirurgicæ, ii 44, has proposed to force fluids into this tube by holding liquids in the mouth, and breathing with the whole force of expiratory muscles. Portal, Leske, and many others, deny the possibility of thus forcing the tube; and a bent canula may, it is supposed, be introduced so as to throw fluids into the second chamber. Innumerable difficulties, however, attend the attempt, particularly when the tube is closed by inflammation; but forcing the smoke of tobacco through it may be more easy. (Morgagni Epistolæ Anatomicæ, vii. 4) As the processus mastodei terminate in the concha, it has been supposed that fluids may be thrown into this cavity by perforating them, or the discharge of matter assisted; but we cannot perceive that this method has succeeded, and it certainly has not been extensively practised. Murray, in the Memoirs of the Swedish Academy, remarks, that these cells frequently pass into the external meatus. We have already remarked (see SONUS), that Mr. Astley Cooper has successfully relieved cases of deafness from this cause by perforating the membrana tympani, at one side of its connection, with the handle of the malleus, in which he has been since imitated with equal success. We perceive the same operation proposed in Trnka's Historia Cophoseos. In less desperate cases masticatories, to increase the discharge of saliva, are recommended by Stahl, Wepfer, and Morgagni (Epist. Anatom. vii. 14). Salivation is recommended probably with the same views, and may have been particularly suggested by the Eustachian tube being so often closed in consequence of a venereal affection of the throat.

The mezereum, the hemlock, the bella donna, and similar medicines, seem to have been recommended on the vague grounds of obstruction, when deafness might be supposed to proceed from a thickening of the membranes, or perhaps the pressure of schirrous tumours. We need not add that the greater number of causes mentioned are wholly beyond the reach of medicine.

Deafness in old people is sometimes attended with tinnitus aurium, and is then generally owing to debility. Every evacuation, even topical ones, increase it, and warm tonics, with a generous diet, are the best remedies.

In the Edinburgh Medical Commentaries, vol. iii. p. 80, is a case of deafness from bathing, which first produced a violent pain in the patient's head, and a hissing noise in his ears. After various trials, without success, his hearing was restored by a mercurial course. His mouth was not affected with the mercury until he began to hear.

Bell's Surgery, vol. iv. p. 348, 362; Memoirs of the Medical Society of London, vol. i. p. 94; Trnka Historia Cophoseos, &c. Vindobonæ, 1778; Stahl Collegium Casuale; Sanders on the Ear

SURE'NGIAN. See HERMODACTYLUS.

SU'RI. See PALMA COCCIFERA.

SURQUI'SSE. See INDICUM.

SUS, (from ὗς). See PORCUS.

SU'SINUM, (from *Susan, a lily*). See CRINOMYRON.

SUSPE'NSIO, (from *suspendeo, to hang*). Hanging is the usual mode of putting criminals to death, and, if dextrously conducted, attended with very little pain. By the rope the circulation in the carotids is immediately stopped, and the passage of the trachea closed. As the jugulars lie more superficially than the carotids, it has been supposed that the blood is retained in the head, and that the victim dies apoplectic. The appearance of the face, which is swollen and livid, seems to confirm this idea; it is highly improbable that this change takes place. In the dogs hanged by De Haen, who were suspended only till they were dead, no apoplectic symptoms were observed, and such appearances are not, we believe, commonly found in the victims of the law. Besides, that death is too sudden to admit of such accumulations as its cause.

On the other hand, we know that a very short stoppage of the respiration proves fatal, and we find a case in Bonetus where a person escaped from the trachea having ossified; lib. vii. sect. xii. obs. 11. It is said that the introduction of a silver pipe will save the person from death, and it has been asserted that this plan was in contemplation to preserve the unfortunate Dr. Dodd. At all events, it is certain that the morbid changes are most conspicuous in the lungs, and the best remedy has been free venesection: to this De Haen adds rubbing the neck with warm oil. Dr. Plot informs us that a person was recovered after thirty-six hours. Frictions, and all the plans mentioned in the articles RESUSCITATIO and SUBMERSIO, have been found useful.

We have not mentioned a more modern idea, that the death, in hanging, is owing to the luxation of the vertebra; for though the hardened criminal jumps from the gallows to shorten his pain, the timid suicide, to whom hanging is equally fatal, has scarcely in any instance equal resolution.

SUSPE'NSOR, (from *suspendeo*), *La bourse*, a bandage to suspend the scrotum. It is a cloth large enough to contain the scrotum and the dressings, with a fillet on each side to suspend it about the waist, and one before to fasten it to the other two in the fore part of the belly.

SUSPENSO'RIUM HE'PATIS, (from the same). See LIGAMENTUM LATUM.

SUSPENSO'RII TE'STIUM, (from the same). See CREMASTER.

SUSU'RRUS, (from *susurro, to murmur*): See PARACUSIS.

SU'TTER. See SACCHARUM.*

SUTU'RA, (from *σύω, to join together*). A SUTURE; *clavata, commissura*. In anatomy it is the particular articulation by which the bones of the head are united, divided into common and proper. The former are those which join the bones of the cranium with those of the face; the proper are those which connect the bones of the cranium, viz. the coronal, the sagittal, the lambdoidal, and the two squamous (*lepidoides*) sutures.

The sutures in infants sometimes remain open for a considerable time, and in those subject to hydrocephalus they seldom close, or again open in the progress of the disease. It is said that they again open from intemperance, as they certainly may from violence. Hippocrates mentions their opening in consequence of inflammation of the brain. (Epidemicorum, lib. vi.) It is now agreed that the sutures,

even the squamous, are no impediments to the application of the trepan.

In SURGERY it is the uniting the lips of a wound by means of thread.

The *dry suture* is made by two pieces of sticking-plaster, each the length of the wound, to which very narrow tapes are fixed at due distances. One is applied near either edge of the wound, and the other on the opposite side. The two sides of the wound are then drawn together, and the tapes are tied by slip knots. Or, take a slip of plaster the length of the wound, and cut longitudinal holes in it; then apply one side to near the edge of the wound, bring the lips close, and apply the other. After it is applied, the uniting bandage is convenient to support it.

The twisted or circumvoluted suture is used for the harelip, and in a few other instances. It is performed by introducing two or more pins through the whole substance of the lips of the wound, which must be previously brought close together; a waxed thread must be then twisted about them in the form of the figure 8, to retain them in contact.

The interrupted or knotted suture is performed with any needle armed with a waxed thread, by thrusting it through both lips of the wound, then tying the thread in slip knots, making a number of stitches according to the length of the wound, at an inch from each other. From the distance of the stitches it is styled *interrupted*. The needle should go to nearly the bottom of the wound. Mr. Justamond advises a more particular regard to the direction of the longitudinal fibres of muscles in forming this suture than to the direction of the wound; for it will be otherwise a continual stimulus, and occasion a perpetual straining of the ligature, producing pain, inflammation, &c. Mr. Bell advises us, in forming this suture, to carry the needle and ligature to the bottom of the wound, so as to afford but little chance of matter collecting under it, and *both* ends of the thread to be passed from within outwards, which is readily done by using two needles upon each thread. The needles are then to be taken off, and the threads allowed to remain till as many ligatures are passed as the extent of the sore requires. In passing the ligatures the skin should be pierced about half an inch from the lips of the wound, though at a greater distance in large wounds. When the threads are passed, the lips of the wound must be pressed together, and supported by an assistant, till the ligatures are firmly tied.

In the quilled suture the knots are tied upon quills laid over the dressings that immediately covered the lips of the wound.

The glover's, the uninterrupted, the spiral, or continued suture, is used in wounds of the intestines, and consists in a series of stitches connected with one another, and continued in an oblique or spiral direction along the course of the divided parts.

See Barkhausen de Suturis siccis & cruentis; Parey's Works, lib. ix.; Bissett's Medical Essays and Observations; Heister's Surgery; Le Dran's and Sharp's Operations; Bell's Surgery, vol i. p. 1—26; White's Surgery, p. 109.

SYCO'SIS, (from συκη, *a fig*), *marisca*, a tumour on the anus, which only differs in size from the thymus. (See CONDYLOMA.) Sycosis is also the name of an ulcer mentioned in Celsus, lib. vi. c. 3, and, in Vogel's Nosology, of one which is fungous. See also TRACHOMA.

SYMBLEPHARUM, (from συν, and βλεφαρον, *the eyelid*). Conglutination of the lid to the sclerotica, chiefly of the superior eyelid. It happens most frequently from inflammations, whatever be the cause, if the eye is kept too long closed, and can only be remedied by an operation.

SYMBOLO'GIA, (from συμβολος, and λογος); that part of pathology which treats of the *signs* and symptoms of diseases.

SYMPA'SMATA, (from συμπασσω, *to sprinkle over*). See CATAPASMA.

SYMPATHE'TICI NE'RVI MAJO'RES, (from συμπασχω, *to suffer with*). See INTERCOSTALES NERVI.

SYMPATHE'TICI MI'NORES. See AUDITORIUS NERVUS.

SYMPA'THIA, (from συν, *together*, and παθος, *suffering*). SYMPATHY, *compassio*. Our bodies are so constructed that one part seldom suffers alone, and sometimes the most inconsiderable organs, when injured, excite the most violent general affections. (Abernethy.) If there are any two portions of the body less connected than the others, they will be found to be the two sides, supplied by the nervous in opposition to the ganglionic system. One may be diseased, be weakened, and scarcely alive, without any considerable change in the other.

The great link of sympathetic connection is the stomach: with this organ, the brain, the liver, the organs of deglutition, the intestines, the urinary bladder, the testicles, the joints, and the extreme vessels of the whole system sympathise. This is the most extensive sphere; but there are many inferior ones, viz. those which we have mentioned (see NERVUS) as arising from the nervous connections in the brain, or its vicinity; the particular sympathy between the liver and stomach, the uterus and the breasts of the female; the testicles and urinary organs. In general these less extensive sympathies are in a great degree owing to motions usually associated. Many of the more extensive ones, of which the stomach is the centre, may be attributed to the same source; but it is not easy to extend this principle to the whole, though, if the particular connection of associated motions is strictly examined, it will carry us farther than we should at first suppose.

A late author has distinguished a *sympathy of equilibrium*, in opposition to sympathy in its more general sense; by which he means the diminished action of parts adjoining those where the action is increased, as in the constipation, when the stomach is inflamed, the want of irritability in the skin when an organ below is inflamed, &c. This, however, cannot be properly styled sympathy; for though the parts *suffer together*, yet the effects are of opposite kinds. The usual sympathies are not always of the same kind, though most frequently so.

SY'MPHYSIS, (from συν, *with*, or *together*, and φυω, *to grow*). In anatomy, a kind of articulation, divided into four species: 1. Syneurosis, or syndesmosis; 2. Synchondrosis; 3. Sysarcosis; 4. the symphysis of ossification, to which epiphysis belongs. Vide in verbis.

In surgery it is a coalescence of the natural passages,

as the anus, vagina, nostrils, &c. It also expresses the first intention of cure, viz. to bring together the separated parts of wounds, in order to their reunion without suppuration.

SY'MPHYTUM, (from συμφυω, *to conglutinate*). COMFRY. (See CONSOLIDA, and PEPLION.) It is a name also for several species of pulmonaria, for the yellow alkanet, a species of bugle, of saxifrage, &c.

SY'MPHYTUM MI'NIMUM. See BELLIS MINOR.

SY'MPHYTUM PETRÆUM. HEATH-PINE, *prunella vulgaris* Lin. Sp. Pl. 837, a plant ranked among the astringent and conglutinant medicines, and may be of service in diarrhœas and dysenteries, as its root yields a large proportion of mild mucilaginous juice. See Cullen's Materia Medica. A name also for the *sanicula, virga aurea, coris, hyssopus vulgaris*, and several other plants.

SY'MPHYTUM MEDIUM. See BUGULA.

SYMPTO'MA, (from συμπιπτω, *to happen together*); *casus; accidens*. See SIGNUM.

SYNA'NCHE, (*cynanche*). See ANGINA.

SYNA'NCHICA, (from συναγχη, *the quinsy*). See RUBIA SYNANCHICA.

SYNARTHRO'SIS, (from συν, and αρθρον, *a joint*); that species of articulation in which there is no motion: it is of three kinds; the *sutura*, the *harmonia*, and the *gomphosis*. See ARTICULATIO.

SYNCHONDRO'SIS, (from συν, and χονδρος, *a cartilage*); that species of symphisis in which the bones are connected by a cartilage, and are either moveable or immoveable: the first is instanced in the vertebræ of the neck, back, and loins; the second in the os pubis, the two sides of which are commonly immoveable. See SYMPHYSIS.

SYNCHONDROTO'MIA, (from συγχονδρωσις, *a connection by cartilage*, and τεμνω, *to cut*). The section of the symphisis of the os pubis. Siebold. See PUBIS OSSA.

SY'NCHYSIS, (from συγχυω, *to confound*). A disease of the eye, consisting in a confusion of the humours, generally proceeding from a violent blow; sometimes from an inflammation of the uvea, occasioning a rupture of the vessels, and the escape of the humours. Castellus.

This term is also employed, when, from the violence of an ophthalmia, the transparent cornea is left opaque or corroded, and the humours of the eye are apparently confounded. In Cullen's Nosology it is a variety of the *caligo pupillæ*. Kirkland, in his Inquiry, vol. i. p. 473, defines it a confusion of the humours of the eye from a violent inflammation, the chemosis, leaving the cornea opaque, or corroded.

SYNCOMI'STON. See COLIPHIUM.

SY'NCOPE, (from συνκοπτω, *to cut down*). See LIPOTHYMIA.

SYNCRI'MATA, SYNCRI'SIS, (from συγχρινω, *to concrete*). See METASYNCRISIS.

SY'NDESMOLOGIA, (from συνδεσμος, *a ligament*, and λογος, *a discourse*). An enumeration and description of the ligaments. Vide LIGAMENTUM.

SYNECHIA, a concretion of the iris with the cornea, or the capsule of the crystaline lens in consequence of inflammation. It arises from a collapsus of the cornea, prolapsus of the iris, a tumefied cataract, an hypopium, or an unnatural formation.

SYNDE'SMO-PHARYNGÆ'US, (from συνδεσμος, *a ligament*, and φαρυγξ, *pharynx*). See PHARYNX.

SYNDE'SMOS, (συνδεσμος). See LIGAMENTUM.

SYNDESMO'SIS, (from συν, *with*, and δεσμος, *a chain*). See SYNEUROSIS.

SYNDRO'ME, (from συντρεχω, *concurro*), a word introduced by the empyrical sect, to express a concourse or congeries of symptoms: when, for instance, the disease arises from plethora, the collected symptoms are called a *plethoric syndrome*. The term has since been more limited, but is now disused.

SY'NECHES, (from συνεχω, *to continue*), was a term used by the Greeks to signify remitting fevers in general. Later writers have collected under this title those instances of remittent fevers obscurely described, of whose mode of relief we have no satisfactory account. Dr. Cullen places it amongst the tertian intermittents.

SYNGENE'SIA, (συν, and γενεσις, *congeneration*). The name of the nineteenth class of Linnæus's artificial system, comprehending those plants which have the *antheræ* united into a cylinder. The orders are six, *polygamia æqualis, superflua, frustranea, necessaria, segregata*, and *monogamia*. The five first contain the compound flowers, and form a class truly natural. Smith's Introduction to Botany.

SYNIZE'SIS. Blindness from an obstruction or a contraction and coalition of the pupil, as the *caligo pupillæ* of Cullen. It is known by the absence of the pupil and loss of sight. The most remarkable species is from the secession of the iris or cornea, which deprives the longitudinal fibres of their support, and the orbicular ones close the aperture. See IRIS.

SYNEURO'SIS, (from συν, and νευροω, *to bind*). That species of symphysis in which the bones are connected by ligaments, as in all the joints designed for motion. See SYMPHYSIS.

SY'NOCHA, (from συνεχω, *to continue*). See INFLAMMATORIA FEBRIS.

SY'NOCHUS, (from the same). A CONTINUAL FEVER; *synochus* of Sauvages; *febris lenta* of Linnæus; *phrenitis* of Vogel; *febris continua putrida* of Boerhaave; *febris anabatica, acmastica*, and *continens*. Dr. Cullen places this disease in the order *febres*, defining it a contagious disease; a fever composed of a synocha and typhus, in the beginning a synocha; in its progress and towards its termination, a typhus. "Since many fevers," he adds, "are neither altogether inflammatory, nor nervous; neither, therefore, can they be referred to the synocha nor typhus: the genus of synochus, whose type is frequently seen in this country, I have here inserted; still between the typhus and synocha I cannot place any accurate limits; and I doubt whether they should, in fact, be deemed different genera, or placed differently: to each of them the synonymes of authors are to be referred." The necessity of introducing the synochus is the strongest proof of the simple nature of fever; for, in fact, this may be truly styled fever, while the others are varieties only. In this climate, ninety-nine of a hundred fevers, independent of topical inflammation, are synochi. See FEBRIS.

SY'NOCHUS PLEURI'TICA, HIEMA'LIS, and RHEUMATIZANS, fevers more strictly inflammatory.

SYNOSTEOGRA'PHIA, (from συν, οστεον, and

γραφη). SYNOSTEOGRAPHY treats of a bone, its parts, and articulations; the nails, and the number and uses of the bones.

SYNO'VIA, (a word coined by Paracelsus), *hydarthros, mucilago*, is a gluey transparent fluid, which readily mixes with water, and partly jellies when exposed to cold, secreted from glands in the joints, to preserve their motions easy and free. It does not coagulate in any part of a joint, however long the bone may have been displaced; but when deficient the joint crackles on moving it.

SYNO'VIÆ GLANDULÆ. SYNOVIAL GLANDS, are small conglomerate glands, seated in the outer lamellæ of the capsular ligaments of the joints, and so as to be more or less pressed, according to the degree of motion. They are also called HAVERS' GLANDS, because first discovered by him. See GENU.

SYNTE'NOSIS, (from συν, and τενων, *a tendon*). That kind of articulation where bones are connected by tendons.

SY'PHILIS. See LUES.

SY'RIÆ O'LEUM. See MELISSA.

SYRI'ACUM UNGUE'NTUM. See COMMAGENUM.

SYRI'GMUS. See PARACUSIS.

SYRU'PUS, (from the Chaldean word *sirpi*, or the Arabic word *serab, a potion*), a SYRUP; *julapium*, is a watery liquor, boiled with such a proportion of sugar, that a drop let fall upon a marble will not spread. If the quantity of sugar is not sufficient, the syrup will soon ferment, and if in excess the overplus will crystalise. An acid fluid, those whose colour or flavour must be preserved, are best prepared by a heat below the boiling point. This form is now seldom used, except for children, and for this purpose we retain the syrup of squills, of rhubarb, and a few others. The syrupus e spina cervina is now almost obsolete, and the principal syrup of activity employed is that of the white poppy. The form was chiefly introduced by the Arabians. See MEDICINA.

SYSSARCO'SIS, (from συν, and σαρξ, *flesh*), the connection of the bones by muscular flesh, as in the connection of the os hyoides to the sternum. In surgery, it is the method of curing wounds by the growth of new flesh; and consists in promoting digestion for the purpose of regeneration. See SYMPHYSIS.

SY'STOLE, (from συστελλω, *to contract*). See DIASTOLE.

T.

TABA'CUM, (from *Tobago*, the island from whence it was first brought). See NICOTIANA.

TA'BAUDE. See BRASSICA ITALICA.

TABE'LLA, (dim. of *tabula, a table*). See TROCHISCI.

TABERDI'LLO. See PETECHIÆ.

TA'BES, (from *tabesco*), is often with little reason confounded with phthisis and atrophy. In the system of Dr. Cullen it is a genus in the order *marcores*, defined a wasting with extreme debility and hectic fever. The species are: *tabes purulenta*, from an ulcer either external or internal, independent of a vomica; *t. scrofulosa*, when it happens in scrofulous habits; *t. venenata*, when from poison.

The various causes of tabes, however, cannot be comprehended under these few heads. Whatever prevents the digestion or the assimilation of the food, as well as every cause which checks the progress of the chyle to the circulating system, must produce the complaint. This must include obstructions of every class, and debility from all its variety of causes. Excessive evacuations of every kind, whether bloody, from the secretory organs, or of chyle, as has happened from a wound, (Collingwood, in the Edinburgh Medical Commentaries), will have a similar effect. Repelled eruptions, and gout, diseases of the heart, liver, and diaphragm, disappointment, jealousy, love, and vexation, have equally induced tabes. Glandular tumours on the brain (Huber, in the Leipsic Commentaries, ix. 594.) and a depression of the xyphoid cartilage, probably from injuring the stomach, have been equally accused. The poisons particularly pointed out as its source are, mercury, lead, and copper; but we find tobacco (Triller), burnt sponge (Vicat), the absorbents, formerly given with so much freedom to children (Bonetus), and even a large proportion of sea salt, equally reprobated.

In the cure, free air, with a milk diet, and occasionally bark and steel, are chiefly employed. The arnica has been recommended by the German physicians, particularly in the Berlin Transactions; and the cold bath is often an useful remedy. The different causes must be of course investigated, and corrected, previous to the more general remedies.

TA'BES COXA'RIA, vel PHTHISIS ISCHIADICA. A wasting of the thigh and leg from an abscess in the hip-joint. See MORBUS COXARIUS.

TA'BES DORSA'LIS, *lordosis*, is often the consequence of a gleet; ranked by Cullen as a variety of the atrophia inanitorum. Hippocrates calls it *tabes ossis sacri*. What the ancients supposed to be a wasting of the spinal marrow, was only a gonorrhœa simplex, without any virulence; and as the pain affected the loins, they supposed it to be a disease of the marrow. At present, by tabes dorsalis is understood a wasting of the body, attended at first with pain in the back and loins, and afterwards also in the neck and head, caused by a too early, a too frequent, use of venery, or, more commonly, secret indulgences.

It arises, says Hippocrates, from a disorder in the spinal marrow, and it is principally incident to persons of a salacious disposition, or such as are newly married. The patient is free from fever, eats and digests well; when asked respecting his state, he says he perceives as it were ants falling from the superior parts of his body, his head for instance into the spine of his back, and when he discharges his urine or excrements, there is at the same time a copious evacuation of liquid semen, in consequence of which he is incapable of propagating his species, or answering the purposes of marriage. He is generally short-breathed and weak, especially after exercise. He perceives a sense of weight in his head, and is affected with a ringing in his ears. The patient is in process of time seized with various species of violent fevers, and at last dies of that kind of fever called *lipyria*.

The matter which Hippocrates mentions as discharged with the urine and stools, is mucus. Besides the symptoms already mentioned, there is considerable irritability and apprehension, with little sleep, the memory and sight fail, the spirits are greatly dejected, and an incurable gutta serena sometimes comes on. See MASTURBATIO.

In the general conduct we may remark, that the air should be pure and cool; the diet light, moderately cordial, not highly nourishing, and frequently supplied in small quantities; the hours should be regular, the apartments well ventilated; and exercise in a carriage or on horseback cautiously used. Bark, steel, dilute vitriolic acid, bitters, and cold bathing, are often useful.

But unless the excesses which occasioned the disease are avoided, no remedy will succeed.

Mr. Neale, who some time since published a work on this complaint, remarks that there is often a considerable accumulation of mucus in the urethra, about the caput gallinaginis, and that bougies are frequently useful to remove the obstruction. He chiefly recommends the savine candle, probably a bougie prepared with the savine cerate, which may have some effect by acting as a topical stimulus. The grey nicker, which this author advises as a powerful restorative, is a nut whose kernel resembles in flavour the bitter almond, and, when dried, more nearly the nux vomica. It does not seem from its sensible qualities to possess any very active tonic powers. Hippocrates recommends the actual cautery on each side of the spine, from the loins to the neck. Περι των ενδος παθων, p. 539, l. 28; Severinus de Efficacia Medicina, 223.

If application is made before the febrile symptoms come on, the cure may be attempted by a course of asses milk, with chalybeate waters, and the cold bath; but after the hectic heats and colliquative sweats have actually taken place, there is little prospect of a recovery.

See Hippocrates de Morbis, lib. ii. and vi.; Baldwinus Rosseus in Tract. de Scorbut. epist. 4; Sennertus, vol. ii.; Lommius's Medicinales Observationes; Morton's Phthisiologia.

TA'BES NUTRI'CUM, SUDATO'RIA, et A. SANGUIFLU'XU; *atrophia inanitorum.* See ATROPHIA.

TA'BES O'SSIS SA'CRI. See TABES DORSALIS.

TA'BES RENA'LIS. See ABSCESSUS RENIS.

TA'BES SIPHYLI'TICA, et AB HYDRO'PE; *atrophia cacochymica.* See ATROPHIA.

TA'BES PULMONA'LIS. See PHTHISIS.

TACAMAHA'CA. (Indian.) A resin obtained from a tree resembling the poplar. *Fagara octandra* Wildenow, vol. i. p. 668 (Jacquin), or the *populus balsamifera* Lin. Sp Pl. 1464; a native of the temperate parts of America, and bearing if sheltered the cold of our climate. The best resin collected in gourd-shells, though rarely met with, is unctuous, softish, of a pale yellow or green colour, a bitterish aromatic taste, and a fragrant smell. The common sort is in transparent globes, of a white, yellow, brown, or green colour, and less grateful than the former. The first is said to exude from the fruit of the tree; the latter from incisions in the trunk. It is now chiefly used in fumigation and plasters, to warm, irritate, and gently blister; but was formerly styled a corroborant. It dissolves in rectified spirit of wine, and yields to water its smell and taste. The Indians use it for maturating tumours. See Lewis's Materia Medica; Neumann's Chemistry.

TA'CHE BLA'NCHE. See ALBUGO OCULORUM.

TACT, is a term sometimes employed to express a more acute and delicate perception of what is elegant and beautiful; *touch,* also, among the magnetical physicians, is a means of curing diseases. Their great prototype Greatrakes (see Boyle's Works), used his fingers as a means of discovering and curing disorders. His followers chiefly employed gesticulations, not without occasionally supplying their defect by actual contact.

TA'CTUS, (from *tango, to touch*). The TOUCH; *aphassomenos* of Hippocrates, when employed to discover any diseases of the pudenda; and the term is peculiar to the practice of midwifery, when the state of the os tincæ and the parts of the child which present are examined. In PHYSIOLOGY, the sense of touch is, in the proper acceptation of the word, that change arising in the mind from external bodies applied to the skin, but more especially at the ends of the fingers; for by the fingers we more accurately distinguish the tangible qualities than by other means or organs.

The organs of touch are apparently papillæ, erected when the attention is excited, like those of the tongue, defended by the epidermis from acrimony, too great heat, and the more active causes of sensation. See Haller's Physiology, lect. xiv.

TADO'RNA. See VULPANSER.

TÆ'DA, (δαιδα). Δας, (from δαις, ὰ δαω, *to burn*). This is an equivocal term, and in botany means a species of pine; in pharmacy a certain paste prepared for fumigations, or some composition to be used as a pessary to support the uterus. The term is also applied by some authors to certain compositions in the form of torches; and to torches made by cutting the wood or branches of mountain pine in proper lengths. See also CANDELA FUMALIS, and PINUS.

TÆ'NIA, (from *atan, a fillet,* Hebrew). We have noticed at sufficient length the natural history of this worm, in the article HYDATIS, under which it is arranged by the title of *tænia hydatigena.* It remains now to speak of the different remedies ordered for it. Among these we find the filings of tin, and have seen the most happy effects from the coarse raspings of a pewter plate. Mercurial preparations of different kinds, particularly the more drastic ones, as calomel and turpeth mineral, have been used with success. The preparations of copper and zinc have also had their patrons; but the remedy of madame Nouffler, which has stood the test of great experience, and the advantages of which we have more than once witnessed, seems to have eclipsed the credit of the others. We shall abridge Baumè's account from the *fifth* edition of the Elemens de Pharmacie, where it is more fully detailed than in the former editions.

After a light supper, if the patient has had no motion, a common clyster is given, and about eight or nine hours afterwards the remedy is taken. Three drams of the root of the male fern, the polypodium filix mas of Linnæus, reduced to a fine powder, is mixed with any simple water and swallowed at a dose; but infants take only one third of this dose. After taking it, any confect may be allowed, or the mouth rinsed with any fluid, but nothing should be swallowed. Should it rise on the stomach, the greatest care must be taken to keep it down; and should it be returned, when the sickness has ceased a similar dose must be swallowed. Two hours after taking the powder, twelve grains of calomel, as much resin of scammony, finely powdered, with five grains of gutta gamba, must be taken in a bolus. If the patient is of a strong constitution, or been used to violent purgatives, this dose may be increased. To infants, and weaker patients, the dose is lessened, and sometimes the gutta gamba is omitted: occasionally it is divided into two doses.

Immediately after the bolus the patient must take a cup or two of weak green tea, and this may be repeated during the evacuation, till the worm is discharged. After that he will take some good broth, and manage

himself as usual during the exhibition of a laxative. If, however, the bolus has been rejected, or stools do not follow in sufficient quantity, he should take from two to eight drams of Sedlitz or Epsom salts.

If the worm is not discharged in a mass, but a part only appears, while the rest is entangled in mucus, the patient should sit on the stool, and take some green tea. Should its discharge be still delayed, or the stools not follow copiously, the salts should be repeated, and the patient continue sitting on the stool. Should it not appear till dinner-time, and the whole medicine have been retained, his meal may proceed as before directed; for sometimes, though rarely, it does not appear till after dinner. If it does not appear through the whole day, which scarcely ever happens, except when either of the medicines has been, in part, discharged, or operated insufficiently, he will sup as on the preceding evening. Should it not appear during the night, the remedy must be repeated the next morning, and only the salts, without the bolus, given afterwards.

When the patient is on the point of discharging the worm, or after a violent evacuation, he sometimes feels a sense of heat round the heart, with fainting or anxiety. This sensation is not dangerous, but soon ceases on rest, or breathing the vapour of vinegar. If the worm is discharged by the powder, only one half of the bolus or the salts should be given; and if after the discharge of the first, a second worm should be found to remain, the treatment should be repeated. This remedy is chiefly useful in the jointed tæniæ.

The conduct may appear scrupulously minute, but we have carefully abridged into this compass more than three full large octavo pages, and were unwilling to omit the slightest circumstance of importance; nor indeed have we omitted any thing but rincing the cup, the conserve employed in making the bolus, the receipts for the panada, the clyster, and similar trifles.

We have tried this remedy not in the form above mentioned, but in the more common methods of this country. Without attending to the supper or breakfast, we have given a dram of the root three times a day, and followed it, every other day, by a similar active laxative. We have thus occasioned the discharge of tænia; and though portions had been previouly discharged in a living state, after taking the medicine they have appeared in larger quantities without signs of life, and when a worm has been apparently discharged, the disagreeable symptoms have ceased.

These symptoms we have not mentioned, as they are equivocal and uncertain. They are, in general, a load in the abdomen, with atrophy, and marks of irritation. The only certain sign is the appearance of portions of the worm in the stools. These, however, require minute examination; for we have, more than once, seen hardened mucus moulded on the intestine, described as a portion of a tænia. See VERMES.

TA'HOW. See ŒNANTHE CHÆROPHYLLI.

TALPA'RIA, (from *talpa, a mole*), *topinaria*, an atheroma on the head, named from its resembling a mole in creeping under the skin. It is sometimes the appellation of tumours on the face, &c. called *testudo*. *Moles* (see NÆVUS) are rather derived from *mucor, mouldy*.

TALU'KGHAGHA. See ESULA INDICA.

TA'LUS. The ANKLE BONE. See ASTRAGALUS.

TAMALAPA'THRUM. INDIAN LEAVES. See FOLIUM, and MALABATHRUM.

TAMARÆ'A ZE'CLA. See TAMARINDUS.

TAMARI'NDUS, (from *tamar hindi*, Arabic, *the Indian palm*, or *date*); the TAMARIND TREE; *tamaræa zecla, oxyphœnicon, balampulli, tamarindus Indica* Lin. Sp. Pl. 48; lately, on the authority of Schreber and De Loueiro, transferred to the class *monadelphia*, and order *triandria*. See Wildenow, vol. iii. p. 577; Woodville's Medical Botany.

The fruit is a pod like that of a bean, including several hard seeds, together with a dark-coloured viscid pulp. The East-India tamarinds are longer than those of the West, and darker coloured; the former contain six or seven seeds in each, the latter only three or four. It is a native of Arabia and India, but we now exclusively receive it from the American islands.

The pulp, with the seeds, are brought into England without the shell or pod; the oriental have the largest quantity of pulp, the occidental of sugar.

At Jamaica, tamarinds are prepared for exportation in the following manner: the fruit, or pods, are gathered in June, July, and August, when full ripe, which is known by their easily breaking on pressure between the finger and thumb. The fruit, taken from the pod, and cleared of the shelly fragments, is placed in layers, in a cask; and syrup, just before it begins to granulate, is poured in till the cask is filled; when cool, it is headed for sale. Long, who gives this account, recommends preserving this fruit with fine sugar to preserve their flavour; but Dr. Cullen advises them to be imported in the pods, as their principal medicinal purpose depends upon their acidity.

The pulp is an agreeable, cooling, acid laxative, first introduced into practice by the Arabians; useful in inflammatory and putrid fevers; abating thirst and heat, and correcting putrefaction. As a laxative, the dose is two or three drams; as a purgative, one or two ounces. If the pulp of tamarinds is mixed with cassia and manna, it increases their action, and prevents in a degree the flatulence which they occasion. It is an ingredient in the electarium e cassia, electarium e senna compositum, Ph. Lond. See Tournefort's, Lewis's, and Cullen's Materia Medica.

TA'MARIX, TAMARI'SCUS, (*tamarisk*, Hebrew, *abstersion*, from its properties of purifying the blood); *myrica*; TAMARISK; *tamarix gallica* Lin. Sp. Pl. 386, is plentiful in France and Germany, and used formerly as an astringent, and sometimes supposed to be a deobstruent and resolvent. It has been given in obstructions of the liver, in jaundice, and hæmorrhages. The bark seems to have been chiefly valued as an aperient; but is not noticed in the present practice. See Raii Historia.

TA'MUS, (from the place where it flourishes). See BRIONIA NIGRA.

TANACE'TUM, (*tanasia*, corrupted from *athanasia*), *parthenium mas*, COMMON TANSY, *tanacetum vulgare*, *α*, Lin. Sp. Pl. 1184, is a plant with large leaves, divided to the rib on both sides into deeply indented segments: on the tops of the stalks are many gold coloured discous flowers, in umbel-like clusters; the seeds are small and blackish. It is perennial, grows wild by road sides, and about the borders of fields; flowers in June, July, and August. The leaves and flowers have a strong, not a disagreeable smell, and a bitter aromatic taste:

the flowers are stronger, though rather less unpleasant than the leaves. The curled-leaved and the striped-leaved sorts are varieties only. They yield their virtue both to water and to spirit, most perfectly to the latter. Distilled with water, they afford a greenish-yellow essential oil, which smells strongly of the herb; the remainder is a strong, bitter, subsaline extract. The spirituous tincture gives over part of the oil on inspissation, a part remaining with the extract.

It is a warm deobstruent bitter, useful in cachectic disorders, and weakness of the stomach, expelling worms from the intestines, for which the seeds are generally used. Many other virtues are attributed to tansy, such as its curing spasmodic colics, and gout, or at least diminishing the frequency of the fits, as well as hysteria from menstrual obstruction. Dose, in powder, ʒi. or more; but it is more commonly taken in infusion. See Lewis's and Cullen's Materia Medica.

TANA'SIA. See TANACETUM.

TAPIO'CA. See CASSADA.

TA'RACHON. See DRACO.

TARA'NDUS. See CERVUS RANGIFER.

TARANTI'SMUS. A DESIRE OF DANCING, said to be produced by the bite of a tarantula. It is, however, one of the autumnal fevers of Apulia. Menzies, in the Edinburgh Medical and Physical Essays, vol. 3.

TARA'NTULA, (from *Taranta*, a city in Naples). A species of spider met with in Apulia, is said to produce by its bite a species of madness, cured only by music; but Dr. Cirillo declares that he never could make the tarantula bite him, nor any other person, through provoked. See TARANTISMUS.

TARA'XACON, TARA'XACUM, (ταρασσω, from its moving the blood and humours). See DENS LEONIS.

TARA'XIS, (from ταρασσω, *to disturb*). A smarting of the eye, as if offended by smoke, attrition, dust, or other slight stimuli. Galen, in Epid. vi. 5, thinks it a morbid disposition of the eye, preceding an inflammation. Paulus, lib. iii. cap. 22. defines it heat and humidity of the eye, attended with a preternatural redness, proceeding, not from the body, but some external cause, and very speedily remedied. Perhaps the following observations of Mr. Ware, in his Remarks on the Ophthalmy, &c. may be included under this title. He says, it frequently comes on in the most sudden and unexpected manner, without any preceding or concomitant illness. The common people call it *a blast in the eye*; and it seems to proceed from some peculiar property in the air: like other epidemic diseases, it often affects the whole neighbourhood at the same time; as was the case during the summer 1778, at Newbery, in Berkshire, and in several of the camps, where it was known by the name of the *ocular disease*; and is an instance of epidemic ophthalmia previous to the Egyptian expedition, though very inconsiderable in degree. In Dr. Cullen's arrangement of the species and varieties of the ophthalmia, he places this as the least violent, and calls it *ophthalmia taraxis*. (See OPHTHALMIA) This kind of inflammation yields to the gentlest remedies used against inflammations of the eyes.

TA'RCHON, (ταρχων). See DRACO.

TARO'LI. See CRYSTALLINÆ.

TA'RSI, (from ταρσος). The CARTILAGINOUS EDGE OF THE EYELIDS. The edge of each eyelid is principally formed by a thin cartilage, called *tarsus*, adapted to the shape and roundness of the eye. The lower edge of the superior cartilage and upper edge of the inferior meet, and are termed the ciliary edges; for these cartilages do not terminate in a line like the sharp edge of a knife, but form two edges, one external, the other internal. When the eyes are shut, the external edges meet; but the internal are preserved at a small distance from each other, leaving a gutter, or groove, through which the tears are supposed to pass from the lachrymal gland to the puncta lachrymalia, while we sleep. The cilia, or eyelashes, which when too short are called *rodatio*, arise out of the external edge of the termination of this cartilage; and on the internal, at an evident distance from them, is a line of small orifices, which are the excretory ducts of small glands, that lie in the inner surface of the tarsus, called *ciliares glandulæ*.

TA'RSUS, (from the same). The space between the bones of the leg and the metatarsus, composed of seven bones; the astragalus, os calcis, naviculare, cuboides, and three ossa cuniformia. See PES.

TA'RTARUM, (from *tartarus*, the sediment or dregs); ARGOL, ARGAL, GIRMER, TARTAR, WINE-STONE; *ænolithum* of Black, *crepinum* of Paracelsus, is an essential acid concrete salt of grapes, thrown off from wines after fermentation, and deposited on the sides and bottoms of the casks. It is of a red or a white colour, and more or less pure according to the quality of the wine, consisting of the vegetable fixed alkali, super-saturated with a quantity of the tartarous acid. That which is clean, sound, somewhat transparent, and hath its outside covered with small shining crystals, is preferred. The Rhenish white wine tartar is the most pure; but the best is debased by much colouring and extractive matter, separated by boiling it with argillaceous earths, and afterwards crystalising. This is the cream of tartar, the supertartrite of potash.

If tartar is dissolved in water, it effervesces with fixed alkaline salts, and saturates of the vegetable alkalies near one third of its own weight; the neutral salt formed by this union is more purgative than the tartar itself.

It is prepared by adding one pound of kali to three pounds of crystals of tartar in three gallons of boiling distilled water. The liquor when cold is filtered through paper; and after due evaporation a part selected to crystalise. Pharm. Lond. 1788.

The soluble tartar is a mild, cooling aperient in doses from ℈i. to ʒi.; laxative in doses of ij. or iij. drams, and purges in one of ℥i.; it promotes the operation of resinous purges, prevents their griping, and has been particularly recommended as a purgative for maniacal and melancholic patients.

Crystals of tartar are very difficultly soluble in water, requiring twenty times their weight of boiling water, and about ten or twelve of cold; prepared by dissolving tartar, filtering the solution, and crystalising the salt. They are generally sold in the form of a powder; but as a bell-metal mortar is commonly used, they retain a slightly nauseous taste. The crystals are therefore preferable, though not so quickly soluble. These are laxative and refrigerant, and may be given from ʒi. to ʒij. according to the constitution of the patients, or the effects

required. In large doses, applied to the intestines, they act as a purgative, exciting the action of the absorbents in every part of the system. Either in small or large doses this medicine is diuretic, and sometimes promotes the secretion of urine very copiously, particularly if accompanied by a quantity of watery fluid: hence the crystals are best administered in a liquid form. See ANASARCA; Home's Clinical Experiments; Neumann's Chemistry; Lewis's and Cullen's Materia Medica.

TA'RTARUM EMETICUM, (from εμεω, *to vomit*). EMETIC TARTAR, *antimonium tartarisatum, stibiated tartar*, is made by boiling one pound and a half of crocus of antimony, powdered, in two gallons of distilled water, in which have been dissolved two pounds of crystals of tartar, in a glass vessel, for about a quarter of an hour; then filtered through paper, and the strained liquor set by to crystalise. Ph. Lond. 1788.

This preparation also forms a medicated wine, called vinum antimonii tartarisati. A more certain preparation is probably obtained by the following process.

Take of powdered mercurius vitæ, wash it with a little fixed alkali to separate the marine acid, then gradually throw it into a glass vessel, containing a boiling solution of the cream of tartar; continue the boiling and the addition of the mercurius vitæ, until there is no longer any fermentation from the mixture; filter the liquor, and set it to cool and crystalise. See ANTIMONIUM; Neumann's Chemistry; Lewis's Materia Medica.

In preparing the tartarised antimony, vessels of earthen ware or glass should be used; for iron, tin, lead, and copper, decompose it, by attracting the acid more strongly than the antimony.

In the History of the Royal Medical Society at Paris, for the year 1776, M. de Lassone prefers the mode of preparing the tartarised antimony with the mercurius vitæ (pulvis algaroth); but states an objection to it, as well as to all other methods of preparing it, which is, that when dissolved in a very diluted aqueous vehicle, part of the medicine is constantly precipitated. This often happens in practice, so that when the phial containing the solution has been often opened, the strength is unequal. He, therefore, recommends the mixing equal quantities of tartarised antimony and pure sal ammoniac, and, after rubbing them together in a mortar, adding a small quantity, three parts or less, of distilled water. Thus the two salts unite, and are completely dissolved.

Tartarised antimony, according to its dose, is an emetic and diaphoretic. It is a medicine both safe and convenient, with little taste. The dose, as an emetic, is from one grain to five, though even children will sometimes bear six or eight grains, and adults, in a few instances, double the dose. To children it is generally given in solution, in the proportion of one or two grains to an ounce of water, and sweetened with sugar: a teaspoonful or two may be taken every half hour till the patient vomits, and it should be repeated according to the necessity of the case and the strength of the patient. As a diaphoretic, the dose is from one-eighth to one-half grain, given repeatedly in the beginning of remittent fevers, joined with a few grains of sugar, and some testaceous powders, and with four or five grains of nitre in inflammatory fevers. It is given by the French physicians in moderate doses, largely diluted in some aqueous liquid, every half hour, till it acts by vomiting or purging, styled *l'emetique en lavage*, particularly at the attack of bilious fevers. At this period they most commonly join some mild purgative, as tamarinds, manna, or purging salts, dissolved in barley-water; and from this mode the disease is frequently removed in its first stage. See FEBRIS.

TA'RTARUM SOLU'BILE. See KALI.

TARTAR, SPIRIT OF, the pyrotartarous acid, prepared by distilling the crystals of tartar with a strong heat. The acid is highly empyreumatic, followed by a very fetid oil. In the coal that remains, there is a large proportion of kali, without earth or any neutral.

TARTAROUS ACID: *acidum tartari essentiale*, is made by saturating two pounds of the crystals of tartar with chalk, and adding to it nine ounces of sulphuric acid with five of water. The tartarous acid is thus set at liberty, and may be cleared of the sulphat of lime by means of pure water. It is similar in its medical virtues to other vegetable acids, and with borax forms the powder which extemporaneously prepares an acidulous water.

TA'RTARUM VITRIOLA'TUM. See NITRUM VITRIOLATUM.

TA'RTARUS REGENERA'TUS. See DIURETICUS SAL.

TA'RTRIS, (from *tartarum*, *tartar*). TARTRITES. Salts formed by the combination of the tartarous acid with different bases.

TA'RTRIS AMMONIÆ, *alcali volatile tartarizatum* of Bergman, *sal ammoniacum tartareum*, is, as its name imports, the union of the tartarous acid with ammonia. It is more sudorific than the tartrites of potash or soda, but scarcely superior to the muriated ammonia. It has been lately used in fevers, in exanthemata not completely thrown out, in catarrhs, in chronic rheumatisms, &c.

TA'XIS, (from τασσω, *to station*). The reducing a hernia by the hand. See BUBONOCELE.

TE'GULA GA'LLIS. See HIBERNICUS LAPIS.

TE'LA CELLULO'SA, (from its likeness to a *web of cloth*). See CELLULOSA MEMBRANA.

TELE'PHIUM, (because it heals old ulcers, like that of *telephus*). See CRASSULA, FABAGO.

TELE'PHIUM CHIRONIUM. See ORNITHOPODIUM.

TEMPERAME'NTUM, (from *tempero, to mix together*), TEMPERAMENT, or CONSTITUTION. The temperaments, as described by the ancients, depended on the proportions of different fluids. When the yellow bile was in excess it was styled the *choleric* temperament; when black bile, the *atrabilious*; when blood, the *sanguineous*; when phlegm, the *phlegmatic*.

More attentive observers added the consideration of the solids also, and observed, that in a person of a choleric temperament warm blood flows in vessels distinguished by a superior tone in the sanguineous temperament, that they flow in relaxed vessels, &c. Other authors have been more diffuse, and Boerhaave has described eight temperaments, the warm, the cold, the dry, the moist, the bilious, the sanguineous, the phlegmatic, and the melancholic.

The *warm temperament* is characterised by a profusion of thick yellow hair; a florid complexion; blood-shot

eyes; a thin, active, robust body; a full, quick pulse; a temper irascible, but soon appeased. In this temperament the viscera are strong, the vessels tense, the fluids dense. A mild diluent diet is supposed to be best adapted to such constitutions.

The *cold temperament* is distinguished by a smoothness of the skin, thin hair, a pale complexion, a cold, weak, languid habit, a small slow pulse, and a cautious timorous mind. In this temperament the solids are lax, the fluids watery, and a warm corroborating diet is most useful.

The *dry temperament* is similar to the warm; but the vessels are contracted, the body small. The juvantia et lædentia, of an opposite tendency to those mentioned under the hot temperament, are useful.

The *moist temperament* differs only in the bulk of the body from the dry.

The *bilious temperament* is distinguished by a profusion of black curly hair, a hard, lean, slender body, a brown complexion, large veins, a full, quick, strong pulse, obstinacy and violence. In this temperament the excess appears to be in the solids, and it agrees in general with the hot and dry.

The *sanguineous temperament* is distinguished by thin auburn hair, soft flesh, a full habit, blue, full, large veins, a florid complexion, by a temper passionate, though readily yielding. Evacuants and a temperate diet are adapted to it.

The *phlegmatic temperament* is distinguished by a greater smoothness of the skin; white thin hair, growing sparingly; a white, full, soft, plump body; small and almost imperceptible veins. It agrees with the cold temperament, and is benefited by warm tonics.

The *atrabilious* or *melancholic temperament* is distinguished by a smoothness of the skin, black hair, extreme leanness and dryness, dark complexion, languor, perseverance, a disposition resentful but penetrating. The vessels in this temperament are firm and strong, but small; the fluids thick, but tenacious, neither separating nor changing readily. Warm, dry, acrid food is highly injurious; and melancholic persons are benefited by what is refrigerent, relaxant, and emollient.

Such are the distinctions of Boerhaave, who, with due allowance for his attachment to the humoral pathology, has given a clear and distinct view of the different constitutions. By others, temperaments have been divided into the *sanguine*, where the habit is full of good blood; the *serous* or *phlegmatic*, when the proportion of serum is too great; the *temperate*, when the blood and serum are in due proportions; and the *cacochymic*, when the juices are depraved. Dr. Cullen thinks that the temperaments consist in the state of the simple solids, in that of the fluids, in the proportion of the solids and fluids, in their distribution, and in the state of the nervous power. These last arrangements include morbid states, and should, therefore, with many others, with which it is unnecessary to fill our pages, be rejected.

These disquisitions are certainly of no great practical use, and in describing a complaint, the state of fulness or of defective fluids, of mobility or torpor, the facility of bearing, or the inconvenience induced by different evacuations, are points of the greatest importance; nor is it of consequence by what name these states of the constitution are distinguished. Dr. Trotter has lately introduced a new term, the *nervous temperament*, the irritable temperament of Kite, or that peculiar state of irritability which predisposes to nervous diseases. It is the female temperament, and comes nearest the phlegmatic of Boerhaave.

Boerhaave's Institutiones; Cullen's Materia Medica; Wernischeck medendi norma; Stahl Dissertatio qua Temperamenta, &c. enucleantur; Hoffmann de Temperamento morum & morborum in gentibus.

TEMPERA'NTIA, MEDICAMENTA, (from *tempero, to moderate*). This term is sometimes used for refrigerants, at others for demulcents, and sometimes for evacuants; but, from the want of precision attending such unlimited associations, it is now disused.

TEMPLI'NUM OLEUM. A turpentine from the pinus munghos of Scopoli. See ABIES.

TE'MPORA, (*à tempore*, denoting a person's age). The TEMPLES; *corre, corsæ, crotaphi*.

TEMPORA'LIS ARTE'RIA, (from *tempora, the temples*). The TEMPORAL ARTERY lies behind the meatus auditorius externus, covered by the parotid, and, emerging from it, comes immediately under the skin to the zygomatic process of the os temporis; in its passage upwards it divides into two branches, one of which goes to the frontal, the other to the parietal, bone. The frontal part anastomoses with the internal carotid, and the other portion with the occipital artery. From the root of the temporal an artery passes up to the scalp behind the ear, and is sometimes opened instead of the temporal.

TEMPORA'LIS MUS'CULUS, *crotaphite* of Winslow, rises broad from the region of the temples, particularly from the ossa frontis, parietalia, temporalia, and sphenoidea, where it spreads like a quarter of a circle; and, forming a tendon, passes under the jugum, to be inserted into the coronoid process of the under jaw. A ligament from the processus zygomaticus confines this tendon, and seems to give it some of the internal fibres. It is covered with a strong tendinous sheath, which is lost in the epicranium; and when matter is formed under it, the fever and pain are so considerable as to occasion delirium. The thickness of this tendinous part prevents the matter from pointing outwards, and, if left, it runs in the direction of the temporal muscle, opening into the mouth by the coronoid process of the lower jaw. It is usual, therefore, not to wait for its pointing outwardly when first formed, but to make an opening directly into it. (See ABSCESS of the TEMPORAL MUSCLE.) We were formerly forbidden to apply the trepan to the temporal bone; but the operation has been performed with success by Gooch and Pott, and all apprehensions have now vanished.

TE'MPORUM O'SSA, *arcualia*, vel *nervalia ossa*, are bones of a very irregular shape, divided into two parts, the squamosa, and the petrosa, or *lithoeidea*. Three external processes arise from each; on the posterior part the *mastoideus, mammiformis*, or *mammillaris*; a little more forward the *zygomatic*, joining the os malæ, and from the inferior craggy part the styloid process, or *plectrum*, projecting obliquely forward. A little below the mastoid process there is a cavity, whence the digastric muscle of the lower jaw arises; and at the inner side of the root of the styloid process another, where the internal jugular vein is lodged. Between the mastoid and zygomatic processes the meatus auditorius externus is seated, and between the mas-

toid and styloid processes is the aqueduct of Fallopius, through which the portio dura of the seventh pair of nerves passes. Before the styloid process is a glenoid cavity for the reception of the condyle of the lower jaw, and near it an eminence, upon which the condyle sometimes moves. In the pars petrosa, near the styloid process, is a canal through which the carotid artery enters. Near the last foramen, on the anterior edge of the bone, is the tuba Eustachiana. The internal foramen is the meatus auditorius internus.

TENA'NCHILES. See PIPER INDICUM.

TENDINO'SA TU'NICA, (from *tendo, a tendon*). See ALBUGINEA TUNICA.

TE'NDO, (from τεινω, *to stretch*), *chorda*, a TENDON. See MUSCULUS.

TE'NDO ACHI'LLIS, *chorda magna*, (from its contributing to velocity, the characteristic of the ποδας οκυς Αχιλλευς). This tendon formed by the union of the soleus and gastrocnemius is inserted into the os calcis.

Tendons are subject to inflammation, yet they inflame slowly, though the complaint continues with peculiar obstinacy, and is frequently terminated by suppuration. An injury of the tendon, however, seldom produces those symptoms of irritation which have been attributed to it. Dr. Brocklesby, Caldani, Tozzetti, and many others, have found tendons injured and torn in different ways without any bad symptoms coming on; and Camper (Dissertationes Anatomicæ, lib. i.) has rendered it highly probable that the irritation proceeds from the wounded or injured nerve. We have, however, spoken on this subject. See PHLEBOTOMIA, p. 390. When, however, inflamed from distension, which particularly happens when an abscess is confined by a tendinous fascia, the pain is excruciating, the irritation and the fever peculiarly violent.

The tendons are often ruptured; but no one is so subject to this accident as the tendo achillis. It is, however, seldom wholly fractured. The sheath, or at least some few of the fibres, have been only broken. Le Blanc, in his Opera Chirurgica, vol. i. has taught us how to distinguish the two cases; but it is immaterial to dwell on the subject, as the treatment will be the same.

The most common application to wounded tendons is the balsam of Peru. It has been sanctioned by the experience of ages, and we have no foundation for controverting its efficacy. Mr. Kirkland prefers unctuous applications, and thinks oil of turpentine injurious. When tendons are broken they were formerly united by a suture; but this has been long found useless; and if the broken ends are laid contiguous they usually unite, or at least unite so firmly to the neighbouring parts, that the use of the muscle is completely restored. The long-continued suture is at least a proof that punctures of the tendons are not dangerous, and the enemies to this plan contend only that it is unnecessary. See GASTROCNEMII.

TE'NDRIL. See CIRRHUS.

TENE'SMUS, (from τεινω, *to stretch*). A tenesmus is a continual painful urging to go to stool, while a mucous substance, sometimes bloody, is only discharged. The causes are, a stone in the bladder, an inflammation in the neck of the bladder, a catarrhal defluction, ulcers or excrescences in the rectum, long-continued diarrhœa, a dysentery, accumulations in the colon (Morgagni), worms, pregnancy, hæmorrhoids, &c. It generally arises from too violent and irregular action of the rectum, independent of the motions of the colon.

If a stone in the bladder is the cause, an alteration of the posture will often remove it; but, should this fail, the position of the stone may be altered by introducing a catheter. If an inflammation in the neck of the bladder occasions it, fomentations, or a blister to the perinæum, will be useful. (See INFLAMMATIO VESICÆ.) If acrid humours affect the rectum, they should be gently evacuated, and emollient or balsamic clysters injected: the ol. ricini is particularly useful in each way. That kind of tenesmus which affects pregnant women is relieved by clysters of sweet oil, with a little of the tinctura opii. In general, opium is the most certain remedy, combined with absorbents, or with soap and wax, to prevent its too quick solution. Leeches have been sometimes applied, and fumigations with the smoke of cones of fir recommended. See Lommius's Med. Obs.; Lobb on painful Distempers.

TE'NGA. See PALMA COCCIFERA.

TENONTA'GRA, (from τενων, *a tendon*, and αγρα, *a seizure*). See ARTHRITIS.

TE'NSOR FA'SCIÆ FE'MORIS, (from *tendo, to stretch*). See FASCIÆ LATÆ MUSCULUS.

TE'NSOR MEMBRA'NÆ TY'MPANI, *mallei musculus externus* vel *superior*, lies on the upper part, above the bony portion of the canal that goes to the nose, and is inserted into the inside of the malleus. It draws the membrana tympani inwards, and makes it more tense.

TE'NSOR PALA'TI. See CIRCUMFLEXUS PALATI.

TE'NTIGO, (from *tendere, to stretch*). See PRIAPISMUS.

TE'PIDUS, (from *tepor, warmth*). TEPID. Warm as milk from the cow, about 96°.

TEREBE'LLA, (a dim. of *terebra, a gimlet*). See TREPANUM.

TEREBI'NTHINA, (from τερεβινθος, *the turpentine tree*). TURPENTINE; *albotim, butino*. The produce of the different species of pine, and the pistachiæ. See ABIES.

TEREBI'NTHINA CHI'A, vel CY'PRIA, from the *pistachea terebinthus* Lin. Sp. Pl. 1455, is generally about the consistence of thick honey, very tenacious, clear, almost transparent, of a white colour, with a cast of yellow or blue, a warm, pungent, bitterish taste, a fragrant smell, more agreeable than that of any other turpentine. It is said to be the least subject to adulteration.

TEREBI'NTHINA VENE'TA, from the *pinus larix* Lin. Sp. Pl. 1420, a native of France and Germany, is usually thinner than the other sorts, of a pale yellow colour, a hot, pungent, bitterish taste, and a strong smell, without any of the fine aromatic flavour of the former.

TEREBI'NTHINA ARGENTORATE'NSIS, from the *pinus picea* Lin. Sp. Pl. 1420, is of a middle consistence between the two former, more transparent, and less tenacious than either, of a yellowish brown colour, more agreeable to the smell, but to the taste the bitterest and the least acrid. It is extracted in Germany by incisions through the bark: when the resinous juice is collected from knots under the bark, it is called *lacryma abiegna*, and *abietanum oleum*.

TEREBI'NTHINA COMMU'NIS. COMMON TURPENTINE, of the London and Edinburgh Pharmaco-

pœias, from the *pinus picea* Lin. Sp. Pl. 1420; the SILVER FIR-TREE; is nearly of the consistence of honey, of an opake brownish white colour; the coarsest and heaviest, and most disagreeable both in smell and taste.

Turpentines dissolve totally in rectified spirit of wine, but not at all in water, though by the mediation of mucilage, the white of egg, or of gum-arabic, they mix with it into a milky liquor. Distilled with water, they yield a large quantity of a subtile, penetrating, essential oil, viz. the oil or spirit of turpentine. The oil is more difficult of solution in spirit of wine than the turpentine, but if it be redistilled without addition, with a gentle heat, it becomes more subtile, and is called ethereal oil of turpentine: the thicker part which remains is called balsam of turpentine, *botin*, and *butino*.

All the turpentines are hot, stimulating, detergent, and corroborant: they stimulate the primæ viæ, and prove laxative; and Dr. Cullen observes that ℥ss. or ℥i. of Venice turpentine, triturated with the yolk of an egg, and diffused in water, may be employed in the form of injection, as the most certain laxative in colics, and other cases of obstinate costiveness. When carried into the blood-vessels, it stimulates the whole system; and is consequently useful in chronic rheumatism and paralysis. When inflammatory symptoms do not forbid, oil of turpentine is given from ten grains to half a dram, for cleansing the urinary passages, for healing internal ulcerations in general, and in laxities of the seminal and uterine vessels. They seem peculiarly to affect the urinary passages, and give a violet smell to the urine; dissolve and discharge mucous matter from the kidneys and ureters, though if there be any fixed obstacle, they are dangerous from their stimulus. When melted with honey over a slow fire, the oil of turpentine may, it is said by Cheyne, be given in very large doses without inconvenience; and the turpentine itself is occasionally made into pills with meal. In suppressions of urine and fits of stone, the turpentine clyster formerly prescribed is often useful. Of the different sorts the Venice is most diuretic and detergent; the Chio and Strasburgh more corroborant; the common chiefly used externally, and for distilling. What remains, after distilling the oil from turpentine, is the yellow and the black resins. Turpentines pass off also by perspiration, and probably by exhalation from the lungs; and to these respective effects are to be ascribed the virtues they are supposed to possess in gravel, scurvy, and pulmonic disorders. In many cases of these diseases, however, and especially the last, they, as well as gums and balsams, are injurious by their stimulus. They are considered as rubefacient, and too stimulant to be applied except as styptics to fresh wounds, or those in a state of suppuration. See PHTHISIS, NEPHRITIS, and BALSAMICA.

The oils, both the common and the ethereal, are more powerful in all their qualities than the turpentine itself; and for the convenience of exhibition are usually preferred. Mixed with spirit of wine, they are used as styptics, to check the discharge of blood from wounds, and employed for rubbing on parts affected with pain. But if too freely used inwardly, they weaken the urinary passages and the seminal vessels. See Neumann's Chemistry; Lewis's and Cullen's Materia Medica; Home's Clinical Experiments.

TEREBI'NTHINA I'NDICA. See PISTACIA.

TE'REBRA, (from τερεω, *to bore*). A name of the trepan. (See TREPANUM.) A chirurgical instrument also for perforating bones, or for extracting hard bodies from wounds.

TEREDO, (from τερεω, *to pierce*). See SPINA VENTOSA, and CARIES.

TERENI'ABIM MANNA. See ALHAGI.

TE'RES, vel TE'RETES. See VERMES.

TE'RES LIGAME'NTUM, rises from the bottom of the cavity of the acetabulum, and runs obliquely backwards, to be inserted into the head of the os femoris; serving to confine the rotation of the thigh.

TE'RES MA'JOR, *rotundus major* of Browne, a muscle which rises fleshy from the outer part of the lower corner of the scapula, and the thick rough part of its inferior costa. Its fleshy fibres pass over a part of the infra spinatus muscle, as it proceeds to the os humeri forwards. Joined by the latissimus dorsi and its tendon, it is inserted into the posterior ridge of the biceps groove, to bring the arm downwards, backwards, and inwards to the body.

TE'RES MINOR, *brevis* vel *brachys*, *transversalis octavus humeri musculus* of Placentinus, who added it to those belonging to the arm. It rises from the lower costa of the scapula, runs along the inferior edge of the infra spinatus, and is inserted tendinous near it into the back part of the large protuberance on the head of the os humeri. It draws the humerus backwards.

TERMINA'LIA BE'NZOIN. See BENZONIUM.

TERMI'NTHI, (from τερμινθος, *a pine nut*), tumours in the skin, nearly resembling the fruit of turpentine trees, of a blackish colour, inclining to green. (Galen.) See YAWS. Wiseman connects the epinyctis with terminthus, styling both painful tubercles, or angry pustules, affecting the skin of the arms, hands, and thighs. In Cullen's system, it is a variety of phlogosis phlegmone, in that of Sauvages a furunculus. Bleeding, purging, and a regular diet, are alone required for their cure.

TE'RNA, (from *ter, three*); applied to leaves placed by threes. See also IMPETIGINES.

TE'RRA. See VENTER.

TE'RRA, (ερα, from the Hebrew *erets*). EARTH. In chemistry, earth is one of the four simple substances formerly called elements. Earths are fixed bodies, unalterable, and indestructible in any temperature we can produce. When carbonated they are insoluble without smell or taste, of a specific gravity rarely beyond 4. 9. They are nearly allied to alkalis, and the kinds used in medicine are the following: the order is that of their alkalinity; BARYTES, STRONTIA, LIME, MAGNESIA, ALUMINE, vide in verbis. See CHEMIA.

Pure *vegetable earths* are chiefly calcareous; and what have been styled *animal earths* are chiefly the calcareous phosphats: we need not add that they are, in no case, absorbents, though, like the clays, they may sometimes be demulcent. See Lewis's Materia Medica; Neumann's Chemistry.

TE'RRA CARIO'SA. ROTTEN STONE; a partly decomposed granite useful only in the porcelain manufactory.

TE'RRA TRIPOLITA'NA, *tripolis*. See ALANA.

TE'RRA AMPELI'TES. See AMPELITES.

TE'RRA CA'NDIDA; FULLO'NICA; SAMIA; SAPO'NARIA A'NGLICA; SIGILLA'TA ALBA. See CIMOLIA ALBA.

TE'RRA EXONIE'NSIS is an earth mentioned only in the works of Dr. W. Musgrave on anomalous gout. We had supposed it a red ochre, which colours the arable land near that city; but were informed by a very old and respectable apothecary, that it was an extract of some bitters, which, like the catechu, appeared in an earthy form. Even this gentleman, who, if alive, must have exceeded his hundredth year, spoke only from tradition.

TE'RRA FULLO'NICA. See CIMOLIA PURPURASCENS.

TE'RRA FOLIATA TARTARI. See DIURETICUS SAL.

TE'RRA MAGNESIÆ. See MAGNESIA ALBA.

TE'RRA SI'CULA, and SICILIANA. See BEZOAR FOSSILE.

TE'RRA MARI'TA. See CURCUMA.

TE'RRA SELINUSIA. See CRETA SELINUSIA.

TE'RRA A'LBA. See ETHEL.

TE'RRA SARACE'NICA. See ANATRON.

TE'RRA PONDERO'SA MURIA'TA. See BARYTES.

TE'RRA JAPO'NICA. JAPAN EARTH, *cachou, catechu, cadtchu, kate, caath, cutt, cutch,* was long supposed to be an earthy substance from Japan; but is a gummy resin, obtained by a decoction of a vegetable substance in water. The plant is called *caira, kheir,* or *khadira*; and is the *mimosa catechu,* Linnæi. Fil. Supplem. 419. The wood of the tree is extremely hard and heavy; the interior part varies from a pale brown to a dark red, sometimes approaching to black, but always covered at some depth with white wood. It is frequent in the uncultivated mountainous districts of Hindostan, and the neighbouring parts. From the interior coloured wood is produced the extract erroneously called *terra Japonica.* This wood is cut into chips, with which a narrow-mouth unglazed earthen pot is filled; and as much water added as will rise to the upper chips: when this is half evaporated by boiling, the decoction is poured into a flat earthen pot, and boiled to one-third part, set in a cool place for one day, and afterwards evaporated by the heat of the sun, stirring it several times in the day. When reduced to a considerable consistence, it is spread upon a mat or cloth, previously covered with the ashes of cow-dung, divided into square pieces by a string, and completely dried by turning them frequently in the sun, until they are fit for sale. The pale brown wood is preferred, as it produces the fine whitish extract; the blacker extract from the darker wood is of less value. As it is carelessly prepared, it hath a considerable quantity of ashes mixed with it. Mr. Kerr does not think that the terra Japonica was produced from the areca, or betel-nut, as its price would in that case greatly exceed that of the terra Japonica; and we now know that the betel-nut is the product of a very different tree. It is used in dyeing, for painting chintz and other cloth, for when united with vitriolated salts, a black colour is produced; and mixed with oil, for painting the beams and walls of houses, to preserve them from the white ants. Among the black physicians, the terra Japonica is reckoned a powerful cooler. The colour of this drug varies from a pale reddish brown to a deep black. It is more or less ponderous, porous, or astringent, according to the manner of obtaining it. The best is of a dark reddish-brown colour, dry, heavy, glossy, and compact; if chewed, it discovers, at first, a bitterish styptic taste, followed by an agreeable sweetness. On analysis, it is found to contain a considerable proportion of tanin, to which its astringency is probably owing. When pure, it is almost totally dissolved both by water and by spirit. An extract made of spirit is the most agreeable and most astringent preparation. Where an astringent is required, whether for external or internal purposes, the spirituous tincture will be found highly useful. It is made by digesting three ounces of Japan earth, two ounces of cinnamon bruised, in two pints of spirit of wine for three days. (Pharm. Lond. 1788.) One, two, or three drams may be taken in red wine, or any other proper vehicle: for a milder corroborant, the watery tincture or extract is given. In diarrhœas, in uterine profluvia, laxity, and debility of the viscera in general, in old catarrhs and various other diseases where astringents are necessary, this extract is peculiarly useful. A little of the watery extract held in the mouth, suffered to dissolve leisurely, and gradually swallowed, is useful in laxities and ulcerations of the gums, aphthous ulcers, and in relaxations of the throat, and uvula. Though this extract is the basis of several formulæ in numerous dispensatories, simple infusion in warm water, with a proper proportion of cinnamon, is one of the best forms in which it can be exhibited. See Neumann's Chemistry; Lewis's Materia Medica.

TE'RRA PONDERO'SA MURIA'TA seu SALITA. See BARYTES.

TE'RRÆ O'LEUM. See PETROLEUM and NAPHTHA.

TE'RROR, (from *terreo, to affright*). The general effects of terror are a great contraction of the small vessels, and a repulsion of the blood into the larger internal ones. The perspiration is consequently suppressed; the heart trembles and palpitates; the lungs are oppressed from over distension, &c. After great frights, persons rarely recover, for a long time, their usual vivacity; and incurable epilepsies are often the consequence. When a person is violently affected with terror, the principal endeavour should be to restore the equilibrium of the circulation, to promote perspiration, and to allay the agitation or commotion. A little blood is with great propriety taken, the legs should be rubbed, put into warm water, and there continue for some time. A little weak wine and water may be given frequently; and after the circulation is in some degree restored, a little opium and camphor will be useful. But if the body has been costive a clyster should be premised. Terror is, however, often a remedy of complaints. Epileptic paroxysms have been checked by it; intermittents stopped; and during its continuance, nervous complaints have been found to disappear, as during the siege of a fortress. See PATHEMA.

TE'RTHRA, (from τερθρον, *a crane*). The middle and lateral parts of the neck: τερθρον signifies the parts about the throat. Keil.

TERTIA'NA FE'BRIS, (from *tertius, third*), a fever of the intermittent kind, returning every other day about noon. Hippocrates calls it ῥιγος. (See INTERMITTENS and FEBRIS). It varies in the duration of the paroxysm, for the paroxysm of a true tertian does not continue above twelve hours, of a spurious one longer; in the return of the fits (see TERTIANA DUPLEX), and the symptoms, for it is sometimes attended

with comatous affection; spasms and convulsive motions; with efflorescences of the skin; or inflammation. It varies also as being complicated with other diseases. See Culleni Synopsis Nosologiæ Methodicæ.

The tertian type is the most common form; for the slightest fevers, though they return every day, show a marked exacerbation on the alternate days; and in the early period of fevers the changes are always on the unequal days. This induced Stahl to consider tertians as the common genius of every fever; but on this subject we have sufficiently enlarged. See INTERMITTENS.

TERTIA'NA DU'PLEX, *duplicana*, a tertian fever returning every day, but with unequal paroxysms; every other fit being alike.

TERTIA'NA DUPLICA'TA, a tertian fever returning every other day, with two paroxysms in one day.

TERTIA'NA TRI'PLEX, a tertian fever returning every day, with two paroxysms every other day, and one only on the intermediate day. See INTERMITTENS.

TERTIANA'RIA. See CASSIDA.

TERTI'OLA. See PANAX COLONI.

TE'RTIUM SAL, (the product of an acid with either an alkali earth or metal, making a third body different from either). A NEUTRAL SALT.

TE'SSERA, (τεσσαρα, *four*). See OS CUBOIDES.

TE'STA PROBA'TRIX, (quasi *tosta*, from *torreo*). See CUPELLA.

TE'STES, (from *testis, the evidence of manhood*), *didymi; perin;* are originally seated in the abdomen, just beneath the kidneys, and then called *crypsorchis:* they gradually descend near the time of birth through the sheath of the spermatic cord into the scrotum, each carrying with it a peritoneal coat, which makes the tunica vaginalis (*erythroides* or *elythroides*), because it includes them as a sheath. Usually arteries are sent to glands from some adjacent vessels; but the spermatic vessels arise from the aorta, the vena cava, and the emulgent veins. The gland is near their origin only in the fœtal state.

The testicles are two small, white, oval bodies, covered by a strong, dense, white membrane, called the *tunica albuginea*. Immediately within it, is the body of the testis, of a yellowish white colour, composed of tubuli, and between these the blood-vessels run. These tubuli are the secretory organs of the semen: they run in short waves from the tunica albuginea to the axis of the testicles, there form larger tubes, are continued through the tunica albuginea, and unite into one canal, which, by several windings, forms the epididymis; and by its continuation the vasa deferentia. The arteries from the spermatic artery are convoluted in a serpentine direction, forming little masses of tortuous vessels, separated by cellular partitions. In each partition there is a duct receiving the semen, on which the arteries appear to branch as larger arteries over the intestine, or as the vasa vasorum over the arteries themselves. The testicles have many lymphatics, which terminate in the inguinal glands. The nerves of the testicle are branches of the lumbar and the great intercostal, and there is no organ of the body more disobedient to the will. The semen, separated in the testicle, is further perfected in the epididymis, and then conveyed to the vesiculæ seminales, and from thence into the urethra.

The testicles are subject to a variety of appearances and complaints. Sometimes there is only a single one; but in such instances the other has been usually retained in the abdomen (see PARORCHYDIUM): it is at least certain that this defect, even when it exists, does not injure the generative power. Sometimes there are said to be three, occasionally five, without any increase of this power; but the supposed additional testis is sometimes merely a larger epididymis. In some instances, the testicle sticks at the ring of the muscle, resembling a hernia; and when this circumstance is known, if the testicle lies obliquely, it renders the person subject to hernia, which cannot be retained, as he cannot wear a truss. The testicles have sometimes gradually decreased, and this has happened (Hamilton in the Medical Journal, xi.) after the metastasis of a parotid tumour in the cynanche parotidæa. We have witnessed the same consequence, after a tumour in the testicles, without any evident cause; sometimes, according to Mr. Hunter, it happens after a venereal tumour. The testicle has also been destroyed by hydatids.

We have already mentioned the sympathy of this organ with the stomach, and we find a case recorded, where inflammation came on from a blow on the pit of the stomach; and Pouteau mentions many instances of its sympathy with the breast. Is it from this cause that hectic patients (at least men) are commonly salacious?

Inflammation of the testicle is a disease very troublesome and obstinate; for we have observed that the arteries are small and tortuous, so that obstructions are not easily removed; leeches to the part must be repeatedly applied, cold cataplasms, and discutient fomentations freely used, while the bowels are to be kept open by neutral salts; a recumbent posture is highly necessary, and the suspensory bandage, even in this posture, useful: in any other it is indispensable. In the venereal inflammation, J. Hunter advises emetics; and we find that Rhazes in his Continens mentions a case where an abscess of the testicle was relieved by this remedy. In general, *abscess of the testicle* requires no peculiar management. Petit Memoires de l'Academie de Chirurgerie, iv. 323.

The testicles have been sometimes found of a *cartilaginous* hardness, and sometimes ossified portions have been discovered in them. Tumours have been found also to contain osseous concretions.

Tumours, infarctions, and *schirri.* The causes of tumours are various. The chief source of these swellings is said to be a suppression of the gonorrhœal discharge, and the principal means of cure its renewal: a fresh infection has been even employed for this purpose. See HERNIA HUMORALIS.

A suppressed discharge of the seminal fluid, ischuria, and even worms of the intestines, as well as the metastasis from parotid tumours, already mentioned, have been accused, and frequently induce the complaint. To the former remedies, mentioned under the article already referred to, we may add the hemlock (Baylie's Practical Essays), electricity (London Medical Journal, 1786), aqua ammoniæ acetatæ, gum ammoniac, recommended by Plater, which has also the au-

thority of Rhazes (Continens, lib i.), the pulsatilla and dulcamara, though these narcotics and the gum ammoniac are rather adapted to the chronic state, when pain and inflammation have ceased.

Schirri in the testicles are the diseases of advanced life, when the diminishing vessels concrete with the gland into hard unequal tumours. The size of these is often considerable, and they frequently degenerate into the most painful cancers. The suspensory bandage is highly necessary, to support the weight; and, in the early state, leeches may be frequently applied with advantage. The bowels should be kept freely open, opiates given occasionally, and every cause of stimulus avoided.

In this way, the patient's life may be often preserved in tolerable comfort; but a cure is scarcely to be expected, except from an operation. Small doses of muriated mercury, with the decoction of sarsa and mezereon, the hemlock, the dulcamara, the aconite, and the pulsatilla, have been employed both externally and internally with little success. Electrical sparks seem occasionally to have been injurious; nor will the gum ammoniac, with the vinegar of squills applied to the part, produce any very salutary effect.

When a schirrus or cancer of the testicles is fairly characterised, castration is the only cure. Mr. Fearon, in his Treatise on Cancers, advises it to be performed in the following manner: the patient being placed in a proper situation, the integuments over the spermatic vessels in the groin are to be divided by an incision, beginning opposite to the opening in the abdominal muscle, and continuing it nearly to the bottom of the scrotum. The surrounding membranes of the spermatic cord must be then separated, and the operator is to pass a large crooked needle round the cord about half an inch below the abdominal ring. The ligature should be well waxed, oiled, and tied in one running knot, so tight only as to prevent the spermatic artery from bleeding, and not to give pain by bruising the nerves. The whole cord should be divided about half an inch below the ligature. The testicle is then to be dissected out from the scrotum, beginning at the upper part, and going downwards. If any branch of an artery should bleed freely, it is to be taken up by a pair of dissecting forceps, drawing out the mouth of the vessel, while an assistant passes a ligature round it.

About the second or third day the ligature may be drawn out without any sloughing between it and that part of the cord from which the testicle was separated. The parts from whence the testicle was removed are then to be gently laid together, and the edges of the incision to be evenly and exactly brought into contact from one end to the other, and retained in that situation by slips of adhesive plaster, or a suture if found necessary. Should any part of the scrotum be ulcerated, it will be necessary to make a second incision, beginning a little above the ulcerated part, and continued in as direct a line as the inclusion of that part will admit of, down to the extremity of the first incision. These two incisions will enable the operator to dissect away the testicle, in the same manner as if there had been but one: nor will they give more pain than if the diseased part had been dissected away along with the testicle, as recommend by Mr. Sharp and Mr. Pott. The parts are then to be brought together, and retained in the same manner as if there had been but one incision, that they may unite by the first intention. It is recommended to perform the whole of this operation with a straight knife, as well as the excision of a cancerous breast.

See Warner's Account of the Testicles and the Diseases to which they are liable; Hunter on the Venereal Disease; Fearon on Cancers; Morgagni de Sedibus, &c. xlii. 42, xliii. 43; Schurig's Spermatologia; Wilmer's Cases, &c.

There are some protuberances of the brain which bear this name, from their resemblance. See CEREBELLUM.

TESTICULA'TUS, (from *testiculus*). TESTICULATED, or having roots like the orchis.

TESTI'CULUS CANI'NUS, (from the resemblance of its roots to a testicle). See ORCHIS.

TESTU'DO. See TALPA.

TE'TANUS, (from *τεινω, to stretch*), *convulsio Indica*, *holotonicos*, *rigor nervosus*, is a general spasmodic contraction of all the muscles. If the body is rigidly bent forward, it is styled *emprosthotonos*; if to one side, *tetanus lateralis*; if bent backward, *opisthotonos*. Dr. Cullen thinks that Sauvages' genus *catochus* is by no means natural, as it unites species of a dissonant nature: he has retained, however, the species collected under this head, depending on spastic rigidity, and placed them under tetanus. The species are the *catochus holotonicus*, an universal affection; *cervinus*, particularly affecting the neck; and *diurnus*, considered as symptomatic. See Cullen, Nosologia Methodica; Sauvages' Nosologia Methodica, p. 546, vol. i.

It is defined a spastic rigidity of almost the whole body; to which has been added with sensibility remaining and sometimes increased. This disorder is most frequent in hot climates, though it occasionally happens in the milder, particularly in the topical affection styled a locked-jaw, a variety of this disease. Aretæus, Celsus, and Cœlius Aurelianus consider cold as a principal cause, and direct rubbing the disordered parts, warm bathing, &c.; but the chief source of the disease is an irritation from a wound on a nerve, though it is said to arise also from diarrhœas or dysenteries imprudently checked, from the corrupted air of hospitals (Theden), from sea air, from purulent accumulations in the head, from caries of the bones of the neck, from fever (Storck Annus Medicus, ii. 98), from debility, repelled gout, poisons, and from worms. The less degree of the disease, the locked jaw, arises often in children from accumulations in the primæ viæ, from retained meconium, and from improperly tying the navel-string. After operations in warm climates, where the nerves have been properly divided, tetanus often comes on; sometimes from wounds apparently the most trifling, and of every different part of the body. It has been also attributed to a fit of passion, after a surgical operation. When caused by a puncture or other injury of the nerves, it is commonly more violent and difficult of cure than from cold: when it comes on suddenly, and advances quickly to a violent degree, it is always more dangerous than when slower in its process. If the patient passes the fourth day, hopes may be entertained; and every day adds to the favourable prospect of reco-

very, though the danger is not wholly at an end long after the fourth, for when its force is considerably abated it will often return with its former violence.

The cases of tetanus, like other nervous diseases, are those of debility or of irritation; often of both combined, particularly in the disease of warm climates; and they prove very strongly the principle already laid down, that spasms, including convulsions, are chiefly connected with debility.

Opium is principally depended on as an internal remedy; four or five grains may be given every two hours, until the symptoms abate, and then the dose should be gradually lessened. If it cannot be swallowed, six times that quantity may be injected in clysters until the patient can swallow. Warm baths greatly assist the efficacy of opium; and the wound, if such be the cause, should be dressed with the Peruvian balsam, or turpentine. It is justly observed by Dr. Chalmers, that the quantity of opium can only be limited by the violence of the spasms. Other antispasmodics are inferior in power, and in their efficacy in this disease; but the musk, asafœtida, and oil of amber, are frequently advised. Bleeding is recommended seemingly with the same views, and cupping-glasses, leeches, &c. with blisters to the neck, are employed, especially in the tetanus of fevers. The warm bath is equally a relaxant, and from the time of Hippocrates has been employed, though not with uniform success, or general commendation. Warm sudorifics have been equally commended.

The remedies which connect the relaxants with the tonics are the indirect stimulants, viz. wine, spirits, and ether. These in warm climates are highly useful; but not equal to the relief of the disease in the more temperate ones. A more steady stimulant is mercury; and numerous authors have spoken highly of its efficacy: when there is time for its operation, it has been chiefly used externally; but in many instances it has been freely, and it has been said successfully, employed internally. Other stimulants are the Barbadoes tar, mustard, frictions, electricity. (Watson.) The tonics employed have been bark, arnica, and cold bathing, or cold aspersions on the spine or different parts. We find the most decided testimonies in favour of cold, while bark and arnica seem to have been of little service.

When the cause is some injury received by a nerve, Dr. Cullen advises, if possible, to cut off that part from all communication with the sensorium, either by dividing the nerves in their course, or destroying, to a certain length, their affected portion.

See the London Medical Observations and Inquiries, i. 51, &c. 87, &c. ii. 130; iii. 326; vi. 22; the London Medical Transactions, ii. 39; Cullen's First Lines, vol. iii. edit. 4; London Medical Journal, vol. vii. p. 424; Edinburgh Medical Commentaries, vol. vi. p. 386; Memoirs of the Medical Society of London, vol. i p. 65; Chalmers on the Diseases of South Carolina; Grainger on the more common Epidemic Diseases of the West Indies; De Haen Ratio Medendi, x. 3, and 4; Morgagni de Sedibus, &c. liv. 49, x. 234; Rush, Transactions of the American Society, vol. ii; Rush's Medical Inquiries; Lind on the Diseases of Warm Climates; Theden N. Bemerkungen; Mosely on Tropical Diseases.

TE'TANUS LATERA'LIS. See TETANUS.

TETARTOPHI'A, (from *τεταρτος, fourth,* and *φυω, to arise*); a continued or a remittent quartan. The disease is rare, and very difficult to distinguish from the quartan intermittent.

TETRADYNA'MIA, (from *τετρας, quatuor,* and *δυναμις, potentia*); the fifteenth class of the Linnæan system, comprehending those plants which bear hermaphrodite flowers with six stamens, four of them longer than the other two. This is a truly natural class, and the same with the cruciformes of Tournefort, the siliculosæ and siliquosæ of Ray: the latter are the orders of the Linnæan class.

TETRAGO'NIA, (from *τετρας, four,* and *γωνη, an angle*; an herb whose stalk has four equal sides). See EUONYMUS.

TETRAGO'NUS, (from the same). See PLATYSMA MYOIDES.

TETRAGY'NIA, (from *τετρας*, and *γυνη*). A class of plants having four pistils, or female parts of generation.

TETRA'NDRIA, (*τετρας*, and *ανηρ*). The fourth class of Linnæus's system, comprehending plants which have hermaphrodite flowers with four stamina of equal length.

TETRANGU'RIA, (from *τετρας*, and *αγγος*, because its fruit resembles a cup divided into four parts). See CITRULLUS.

TETRO'ROS. See ASTRAGALUS.

TEU'CRIUM, (from *Teucer*, who is said to have discovered it), SPEEDWELL, MOUNTAIN or TREE-GERMANDER, (a generic term including the CHAMÆDRYS, POLIUM, SCORDIUM, SALVIA SYLVESTRIS, CHAMÆPITYS, and MARUM, q. v.) is native in Germany, Italy, and Sicily; but not in use with us, though a powerful antispasmodic and cephalic, because it cannot easily be cultivated in this country, nor obtained in a perfect state from the continent. See THEA; Cullen's Materia Medica.

TEU'CRIUM FRUTESCENS. See POLIUM.

THA'LAMI NERVO'RUM OPTICO'RUM, (from *θαλαμος, a bed*). See CEREBRUM.

THALI'CTRUM, (from *θαλλω, to flourish*). See SOPHIA.

THA'PSIA, (from *Thapsus*, where it was found). DEADLY CARROT. *Thapsia asclepium* Lin. Sp. Pl. 375. The root of this plant operates violently both upward and downward, and is not used in practice; but, when imprudently taken, its antidote is vinegar. It is a name also for the *ferula glauca*, &c. and for a species of *laserpitium*.

THA'PSUS, (from the same). See VERBASCUM.

THE'A, (*tee*, Chinese); TEA, *chaa*, is the leaf of an oriental shrub; but it is not indubitably ascertained that there is more than one species, though Linnæus enumerates the *thea bohea* and *viridis* Sp. Pl. 734, 735. The variety of teas is apparently owing to the different seasons in which the leaves are gathered, and the different modes of curing them. The tea shrub is cultivated in China and Japan, but principally in the provinces of China, and between the latitudes of 24° and 28°. The best is from Nankin in China, and Fisien in Japan. The green tea, called by the Chinese *byng*, should be chosen fresh, of a bright green, not inclining to a yellow or brown. It should be rolled in round cylinders, consist of entire leaves, be thoroughly dry, of a bitterish subastringent taste, but not ungrateful, and of a pleasant smell; the fresher the tea, the

greener is the infusion. Its prevailing smell is that of violets, or new hay; but if this be strong, it is the effect of art. Bohea tea, called by the Chinese *boui*, is of a blackish brown colour, gives a brown tincture to water, and smells of roses. Of all the substitutes for tea, the male speedwell is the most celebrated; though more pleasant and equally salutary teas are those of the rosemary, peppermint, and many of our indigenous aromatics.

Tea in its natural state is a bitter and an astringent, with apparently some narcotic quality; but, when dried, the astringency is in part lost, and the narcotic quality most sensible to the taste. The more highly flavoured teas have apparently an admixture of some other leaves, it is said of a species of olea: but this is denied by the Chinese brokers; and the different leaves occasionally observed in tea are not, on the whole, most numerous in the finer sorts. The whole mystery apparently consists in the process of drying, by which its latent narcotic powers are most successfully elicited or preserved; for the more highly flavoured teas are undoubtedly most injurious.

The effects of tea are those of narcotics in general: it gives a serenity, an hilarity, promotes perspiration and urine, relieves the tension of wearied limbs, and though it may not greatly assist, it certainly does not, when moderately used, impede digestion. It is certainly a beverage of singular utility, and its abuse only is productive of inconveniences. These are debility, with irritability, a trembling of the limbs, sleeplessness, impaired appetite, digestion, and strength.

The narcotic power of tea is not only shown by these effects, but by its assisting the operation of emetics; and if it contributes to remove crudities or indigested aliment from the stomach, it is probably indebted to its menstruum, the warm water, for the advantage.

See Cullen's and Lewis's Materia Medica; Newmann's Chemistry.

THE'A GERMA'NICA. See VERONICA.

THEBA'ICUM GUMMI. See GUMMI ARABICUM.

THEBE'SII FORA'MINA. See COR.

THE'CA, (from τιθημι, *to deposit*), any case or covering, applied by botanists to some parts of flowers; by Hildanus to a case for chirurgical instruments. With the epithet *spinalis* it means the membranes or covering of the spinal marrow. See SPINA BIFIDA.

THELY'GONON. See MERCURIALIS FRUTICOSA.

THE'NAR, θεναρ. The PALM of the HAND, or the SOLE of the FOOT. See PALMA, PES, and ABDUCTOR POLLICIS MANUS, et PEDIS.

THEOBRO'MA CACA'O, (from θεων, *of the gods*, and βρωμα, *food*, from its deliciousness). See CACAO.

THERAPEU'TICA, (from θεραπευω, *to heal*). THERAPEUTICS, as a science, has shared a very disproportionate degree of attention; for, while appended to a course of the institutions of medicine, it is usually passed over in haste, from the want of time, and often left imperfect by the authors of the Materia Medica, as forming no part of their plans. Its limits also have not been accurately ascertained.

Medicine, when taught or practised on a dogmatic plan, is directed by indications, or those symptoms which point out the specific change to be induced in order to restore health. Any given change is produced by a variety of medicines, agreeing in the same general purpose, though differing in minuter particulars. These then form a *class of medicines*, whose general properties and the subdivision of which, from the minute particulars just mentioned, is the subject of the therapeutist's consideration. The first part of the consideration is, therefore, purely practical; the second differs from disquisitions on the materia medica, as a general work on the natural history of plants does from the arrangement and definitions of the species. Thus therapeutics have been left with little cultivation by either party, and the elder Dr. Duncan first, with great propriety, took it up as the subject of his private lectures before he was appointed professor of the institutions. Dr. Cullen's Materia Medica is in a great measure a system of therapeutics; and if this work has any very striking original feature it is in the therapeutical disquisitions under the different heads into which medicines have been divided. (See MATERIA MEDICA). These portions have been laboured with great care; but with what success others must decide.

THERI'ACA, (from θηρ, *a wild beast*); medicines supposed to cure the bites of venomous animals, differing from *alexipharmics* and *alexiterials*, which are used as remedies against poison inwardly taken. This term was introduced "by the ancients upon a very false supposition, and continued by the moderns upon no better grounds. But, with the absurd compositions which have so long disgraced our pharmacopœias, and to which the term has been applied, the term itself should be rejected." Cullen.

THERI'ACA GERMANO'RUM. See JUNIPERUS.

THERIA'CA LONDINE'NSIS. See CUMINUM.

THERI'ACA RUSTICO'RUM. See ALLIUM.

THERIACA'LIS BEZOA'RDICA A'QUA, (from *theriaca*). See CHYLOSTAGMA DIAPHORETICUM MINDERERI; a fluid distilled from theriaca or mithridate.

THERIO'MA, (from θηριον, *to rage like a wild beast*), a term applied by Hippocrates to the most ill-conditioned and malignant kind of ulcer, described by Celsus as of a livid or black colour, extremely fetid, abounding with a mucus, which is accompanied with inflammation, fever, itching, and pain. Blood sometimes issues from it, and it spreads so fast that some have named it *herpes exedens*. The term is sometimes confined to malignant ulcers of the lungs. Galen and Hernius give this appellation to *phthisis*, and Dr. Cullen places it as a synonym of *ulcus*.

THERMA'SMA, (from θερμαινω, *to heat*). See FOTUS.

THE'RMÆ, (from θερμος, *warm*). See ACIDULÆ, AQUÆ SULPHUREÆ, and BALNEUM.

THERMOMETRUM, (from θερμος, *heat*, and μετρον, *a measure*). The instrument adapted for measuring the different temperatures of bodies, particularly the human body. The thermometer now generally employed is a glass bulb containing mercury, lengthened into a circular or flatted tube, inclosed in glass hermetically sealed. The bulb must be small, that the heat may be readily communicated, and the tube is often flatted, that the variation of the height may be more conspicuous. For medical use the scale is not carried above 112° of Fahrenheit; and this is also styled

an *air thermometer*, since the temperature of the air in very few instances, independent of strong reflection, rises so high. When the instrument is intended for low temperatures, a highly rectified alcohol, slightly coloured, is employed, as the greatest cold hitherto produced has not yet succeeded in congealing this fluid, while mercury freezes at nearly 39 below the beginning of Fahrenheit's scale. When employed for considerable heats, mercury is preferred. By these means we measure by Fahrenheit's scale 643° of temperature, viz. from — 43, when ether freezes, to 600°, at which mercury boils, while the scale of temperature in this climate rarely exceeds 60°, viz. from 20° to 80°; perhaps never 80°. In the arctic circle, however, it has been known to fall below — 40, and within the tropics to rise to 120°.

It is not our province to enlarge on the different forms of this instrument, or the various fluids at different times employed. The scales have also been various; but the history and progress of the invention, with a comparative view of the scales, is given by Dr. Martin in his Essays, which have been republished separately, in 12mo at Edinburgh, with an illustrative plate.

The great object of different philosophers in the construction of this instrument has been to discover two fixed points. These are pretty certainly the freezing and the boiling point, in a calm atmosphere, and at the mean height of the barometer. Such have been employed by Celsius and Reaumur; but Fahrenheit thought the greatest possible cold was produced by mixing salt and snow, and he consequently made it the basis of his scale: fortunately it is a point equally determined with that of frost. In every reduction of the other scales to Fahrenheit's we must consequently add thirty-two, and then the degree of the *centigrade* thermometer, the modern name of Celsius', will be nine-fifths, and of Reaumur's nine-fourths. This means, however, Reaumur's mercurial thermometer; for the spirituous ones are very unequal, from the strength of the spirit not being accurately ascertained.

We shall add Dr. Duncan's table of the degrees of different thermometers.

Table of the degrees of different thermometers, omitting fractions, at which some remarkable chemical phenomena occur.

Reau.	Fahr.	Cent.	
—35	—46	—43	Ether freezes.
—34	—45	—42	Ammonia exists in a liquid form.
— 32	—39	—39	Mercury freezes.
—24	—22	—30	Acetous acid freezes.
—14	0	—18	Cold, produced by mixing equal parts of snow and muriate of soda.
0	32	0	Ice melts.
5	43	6	Phosphorus burns slowly.
6	45	7	Wax melts.
22	82	28	The adipocere of muscle melts.
27	92	33	Fat begins to melt.
28	95	35	Spermaceti melts.
29	98	36	Ether boils.
30	99	37	Phosphorus melts.
33	106	41	Resin of bile melts.
40	122	50	Phosphorus burns vividly.
42	127	53	Fat is perfectly fluid.
44	130	54	Ammonia is separated from water.
50	145	63	Camphor sublimes.
59	165	74	Albumen coagulates.
61	170	77	Sulphur evaporates, (Kirwan).
64	176	80	Alcohol boils.
68	185	85	Sulphur melts, (Kirwan).
71	192	89	Adipocere of biliary calculi melts.
80	212	100	Water and volatile oils boil.
80	212+	100	Sulphur melts, (Fourcroy).
83	219	104	Phosphorus evaporates?
96	248	120	Nitric acid boils.
112	283	140	White oxide of arsenic sublimes.
120	303	150	Sulphur burns slowly, and camphor melts.
150	370	188	Charcoal burns.
164	400	205	Arsenic melts?
168	410	210	Tin melts.
190	460	238	Bismuth melts.
226	540	282	Lead melts, (Newton); arsenic sublimes.
220	540+	282	Tellurium melts.
228	546	285	Sulphuric acid boils, (540° Bergman).

Table of degrees of thermometers continued.

Reau.	Fahr.	Cent.	Wedg	
232	551	290		Phosphorus boils?
299	570	239		Sulphur burns vividly.
250	594	312		Leads melts, (Morveau).
232	600	315		Mercury boils, linseed oil boils.
				Sulphur sublimates, (Davy).
297	700	371		Zinc melts.
341	800	427		Hydrogen gas burns.
345	809	432		Antimony melts.
564	1300+	705	1.7	Azotic gas burns
1451	3297	1814	14	Diamond burns, (Sir G. Mackenzie).
2024	4587	2530	27	Copper melts.
2082	4717	2602	28	Silver melts.
2313	5237	2992	32	Gold melts.
7975	17977	9969	130	Cobalt melts.
9131	20577	11414	1[illegible]0	Nickel melts.
9602	2[illegible]637	12001	158	Iron melts.
9708	21877	12136	160	Manganese melts.
10286	23177	12858	170+	Platinum, tungsten, molybdenum, uranium, and titanium melt.

When we compare the limited range of temperature which we experience to these degrees, we are lost in astonishment, which is greatly increased by the temperature which we can measure by Mr. Wedgwood's means, viz. the contraction of clay. A cone of moderately dried clay is so formed that it will enter a cylindrical ring. In proportion therefore as it contracts, it will pass further on. The scale commences with a red heat fully visible in the dusk, and the instrument is capable of contracting so as to show a temperature of 240=31200 of Fahrenheit, would the materials of Fahrenheit's instrument admit of such a heat. We shall add the scale which we selected from the Philosophical Transactions, in which one or two of the articles are repeated, but they are again introduced for the sake of the comparison.

	Wedg.	Fahr.
Red heat fully visible in the twilight .	0	1077
Wedgwood's enamel burnt on .	6	1857
Brass melts . . .	21	3807
Swedish copper melts . .	27	4887
Fine silver melts . .	28	4717
Fine gold melts . .	32	5237
Least welding heat . .	90	12777
Welding heat of iron . .	95	13427
Common smith's forge . .	125	17327
Cast iron melts . .	130	17977
Wedgwood's small air furnace .	160	21877
Extremity of the scale . .	240	32277

Martin's Essays; Philosophical Transactions for 1783; De Luc sur les Modifications de l'Atmosphere; Leslie on Heat; Black's Lectures. See CALIDUM INNATUM, and CALORICUM.

THETLA'TIAN. See GUAO.

THLA'SPI VE'RUM, (from θλαω, because its seeds appear as if *broken*). PENNY-CRESS, or TREACLE-MUSTARD, *thlapsi arvense* Lin. Sp. Pl. 901, is a plant with roundish-pointed leaves, and broad capsules, containing about four seeds in each cell. It is annual, grows in fields, and flowers in June. The *thlapsi verum* Dioscoridis is the *lepidium perfoliatum* Lin. Sp. Pl. 897.

THLA'SPE VULGATIUS. MITHRIDATE-MUSTARD. *Thlaspi campestre* Lin. Sp. Pl. 902, hath hoary sharp-pointed leaves, shaped like an arrow's head, and only one seed in each shell of the pod. It is biennial, grows in open clayey ground, and flowers in May. The seeds of both are stimulant; but the common mustard seed is generally preferable.

THO'LUS. See ACHICOLUM.

THO'RA, (θορα). See ANTHORA.

THO'RA PA'ROU. See CAJAN.

THORA'CICÆ ARTE'RIÆ. The UPPER THORACIC ARTERY rises from the axillary and runs down on the sides of the thorax, giving out many branches in its passage. The inferior arises also from the same artery, and runs along the inferior costa of the scapula, &c. to several of the neighbouring muscles.

THORA'CICUS DU'CTUS. (See LACTEA VASA.) Cheston records an instance of its being ossified.

THO'RAX, (from θορεω, *to leap*, a motion communicated by the heart), the CHEST, *anocœlia*, *cussa* of Fallopius. It consists of the cavity, surrounded by bones and muscles, which lies between the neck and the abdomen, lined by the pleura, and divided into three regions, viz. the anterior, the posterior, and the lateral. Into the thorax descends the trachea arteria; and behind the sternum is the thymus gland; the heart is seated in the middle of the thorax, and on each side of it are the lungs. It contains, besides the heart, its larger vessels, the thoracic duct, part of the vena cava, the vena azygos, the eighth pair of nerves, and the intercostal, with the commencement of the ganglionic system.

The thorax is bounded behind by the twelve dorsal vertebræ, on the sides by the ribs, before by the sternum, and below by the diaphragm.

Wounds of the thorax are not, as we have formerly

observed, necessarily mortal, and there are cases where a penetration through both cavities of the chest have been healed. (Forestus.) Even considerable wounds with fractured ribs have been cured with little remaining inconvenience. The blood has been drawn out by suction, and by means of a syringe: instances of each occur in Ludwig's Dissertation de Suctione Vulnerum Pectoris, and his Adversaria, i. p. 3, N°. 6. Bartholine and some other authors mention a flow of chyle through the wound, and in these cases the thoracic duct must have been injured: they all, as might be expected, were fatal.

Tumours of the thorax sometimes seem to arise from enlargement of the heart, or the great arteries in its vicinity; sometimes, it is said, from air or purulent matter contained in the cavity; occasionally from steatoms, more frequently from the careless pressure of nurses, during the period of infancy. The bones are, in general, too firmly fixed to suffer any common internal cause to alter their shape; but such was probably the case in an instance recorded in the Journal de Medecine, where the tumour was reduced by a purulent expectoration. From large aneurisms it is not very unfrequent.

Effusions in the chest from hæmorrhages, from water, or mucus, are not uncommon, and the viscera of the abdomen have occasionally been protruded through the fibres of the diaphragm; but these complaints occur under their proper titles. In the former cases the paracentesis of the thorax has been recommended by Gooch, Hewson (Medical Observations and Inquiries), and Kellie (Medical Commentaries).

When pus has been evacuated, the opening often remains *fistulous*. In scrofulous constitutions, and in the scrofulous period, these openings are usually fatal; but, in more advanced life, nature sometimes succeeds in effecting a cure. We once saw an obstinate fistula of the chest heal while the patient was taking large doses of digitalis: we dare not say that he was cured by this remedy.

THRO'MBUS, (θρομβος). See SUGILLATIO.

THU'RIS CO'RTEX, *eleutheria, nascaphthon, cascarilla, storax rubra officinalis Judæorum, elaterii cortex, kina-kina aromatica, Peruvianus griseus seu spurius*, supposed to be the bark of the elathera of Catesby, plentiful in the Bahama islands particularly, and of a tree called *ilathera*.

Dr. Brown, in his History of Jamaica, where it is frequent, observes, that all the parts of the tree, especially the bark, smell strongly of musk: and the powder of the bark is used by the negroes as an emetic. It is called in that island *alligator* and *musk-wood*. It is now known to be the *croton cascarilla* of Linnæus, Sp. Pl. 1424, the willow-leaved croton.

This bark is brought to us in curled pieces, or rolled up in short quills about an inch in width, covered on the outside with a rough whitish matter, and brownish within, exhibiting, when broken, a smooth, close, blackish brown surface. It hath a light agreeable smell, and a moderately bitter taste, accompanied with a considerable aromatic warmth; is easily inflammable, and yields while burning a very fragrant smell, resembling musk: it is bitter, but less rough and less disagreeable than the Peruvian bark.

Professor Stisser thought it a powerful diuretic, and carminative, and used it with success in calculous, asthmatic, phthsical, scorbutic, and arthritic complaints. It is indeed similar in its effects to the Peruvian bark, less useful in intermittents and gangrenes, but producing, in a less degree, dyspnæa, or stricture on the skin. Perhaps on these accounts it has been more commonly employed in Germany in hectics and fevers; but from the early prejudices of the German physicians to the Peruvian bark, they seem to have eagerly caught at the cascarilla, as a substitute, and employed it in intermittents, remittents, and putrid fevers. We find it in such complaints a medicine of very inferior powers. It seems to possess a more considerable aroma, united to its astringent powers, than the Peruvian bark, and is consequently better adapted to debilities of the stomach, and to cases of dyspepsia. Where the bark disagrees it is our best substitute. The best mode of administering it is in powder in doses of fifteen grains to a dram; but unless it is recently powdered the aroma is lost. The college of London prepare a tincture of cascarilla, by digesting for eight days, in a moderate heat, four ounces of cascarilla in two pints of proof spirit of wine, and afterwards straining. Dose from one to three drams repeatedly; and an extract made in a manner similar to that of extractum cinchonæ. The dose the same as the powder. In the gout, and especially in gouty disorders, it sometimes supplies the place of the radix serpentariæ: in disorders of the head it is mixed with tobacco for smoking.

Water extracts the virtues of cascarilla, and spirits more perfectly. Distilled with water it yields a greenish essential oil. See Lewis and Cullen's Materia Medica.

THU'RIS LI'GNUM. See ASPALATHUS.

THUS, (from θυω, *to sacrifice*); FRANKINCENSE. The Greeks call it *olibanum* from Libanus in Syria; but it is the production exclusively of Arabia. The true frankincense is consequently unknown in this country, and what has this appellation in the shops is the resin of the pine-tree. (See PINUS.) The plant from which it is obtained has been doubted. It is certainly not the *juniperus lycia*, as has been supposed; but more probably the *amyris kataf* of Wildenow, ii. 334; Forskål Descr. 80, an Arabian tree.

The common frankincense is bitterish acrid, and used only for external purposes.

THUS CORTICO'SUM and MASCULI'NUM. See OLIBANUM.

THUS JUDÆO'RUM. See THURIS CORTEX.

THUS MYRTIFO'LIA BE'LGICA. See MYRTUS BRABANTICA.

THU'YA, (from θυον, in consequence of its fragrant smell); *cedrus Americanus, paradisaica, et vitæ arbor*, TREE OF LIFE, *thuya occidentalis* Lin. Sp. Pl. 1421, growing naturally in Canada and other northern countries. It is recommended in rheumatic pains, applied, when formed into an ointment, to the part affected, and in a short time is said to give relief. In violent erratic pains of the thighs, sometimes spreading all over the body, eight ounces of the leaves of polypody, and two of the cones of thuya, reduced into a coarse powder, and made into a poultice, with milk-warm water, are recommended to be spread on linen, and wrapped round the body, interposing a cloth, lest it should inflame the skin. At Saratoga the decoction of thuya leaves is given in intermittents, and in cough.

THU'YA MASSILIENSIUM. See CEDRUS PHŒNICIA.

THUYÆ GE'NUS QUA'RTUM. See CEDRUS cum FOLIO CYPERI.

THY'MBRA, (from its smelling like thyme, θυμος). See SATUREIA SATIVA.

THY'MBRA HISPANICA. See MARUM.

THYMA'LEA MONSPELI'ACA, (from its smell). SPURGE FLAX. *Daphne cnidium* Lin. Sp. Pl. 511, is clothed with green leaves, resembling those of flax, bears white flowers in clusters on the tops of the branches, followed by red berries, called *cnidia coccus*, in each of which is a single seed. The seeds are supposed to be the real cnidia grana, and coccus is probably the whole berry. These berries are very caustic. The shrub is a native of the south of Europe. *Cneoron*, a supposed synonym, is another species of daphne, and the mezereon is from another.

THYMELÆ'A LAURI FO'LIA, (from θυμα, its smell). See LAUREOLA MAS and FŒMINA.

THYMI'AMA, (from θυμα), has been confounded with the cascarilla, from its name of musk-wood, but is brought from Syria in brown-grey pieces. Its agreeable odour resembles that of the styrax liquida, and it has been supposed to be the production of the same tree. Its taste is bitterish and subacrid, with a slight astringency; but it has never been used in medicine.

THY'MICÆ ARTE'RIÆ. The *arteriæ thymicæ* and *arteriæ tracheales* on each side, are in some subjects only branches of one small trunk, which arise from the common trunk of the right subclavian and carotid: they are generally small, sometimes run separate, or partly separate, and partly joined.

THY'MICA VE'NA. The right, when it rises separately, goes out from the bifurcation, and, when it is wanting, the thymus gland is furnished by the gutturalis, or some other neighbouring vein. The left comes from the subclavian.

THYMOXA'LME, (from θυμος, οξυς, and αλς). A preparation described by Dioscorides, of thyme, vinegar, salt, and some other ingredients.

THY'MUS; *glandium*; a small, indolent, carnous tubercle, like a wart, arising about the anus, or the pudenda; it resembles and is called from the flowers of thyme. They are easily extirpated. See CONDYLOMA, and ACROTHYMION. Wiseman's and Heister's Surgery.

It is also the name of a gland styled by Haller a lymphatic one, divided into lobes; lying behind the sternum in the duplicature of the mediastinum. It is peculiar to the fœtus, disappears in adults, and has no excretory duct, though lymphatics may be traced from it. In calves it is called sweetbread, but its use is unknown.

In botany it is thyme, a low shrubby plant, consisting of numerous slender tough stalks, with little roundish leaves in pairs, and loose spikes with purplish or whitish flowers on the tops: it is sometimes also a name for *satureia*.

THY'MUS CITRATUS SERPYLLUS. See SERPYLLUM.

THYMUS MASTICHINA. See MARUM.

THY'MUS VULGA'RIS, (from θυμα, *odor*); COMMON THYME, *thymus vulgaris* Lin. Sp. Pl. 825, COMMON BROAD-LEAVED or GARDEN THYME, hath upright stalks, and dark brownish green, somewhat pointed, leaves: it is native in the south of Europe, but common in our gardens, flowering in June and July. Thyme is moderately warm, pungent, and aromatic; to water it imparts by infusion its agreeable smell, though a weak taste; in distillation it yields an essential oil, which possesses the smell of the thyme, but is less grateful, and to the taste is hot and fiery. Spirit of wine takes up the whole of its active matter without heat. It is said to be resolvent, emmenagogue, diuretic, tonic, and stomachic; to afford an agreeable distilled water, more durable, but less active and penetrating than that of peppermint. The infusion has been highly commended in lowness of spirits, head-aches, and for the cure of the night-mare. A conserve of the leaves, or of the leaves with the flowers, is an useful vehicle for stomachic medicines, and the whole plant from its aromatic qualities may be found equally useful with lavender, sage, or rosemary, though its powers are on the whole weak. See Lewis's Materia Medica; Neumann's Chemistry.

THYONIA'NA. See CRINATUM.

THYROIDÆ'A CARTILA'GO, (from *thyroides, the thyroid cartilage*). The word thyro is prefixed to several muscles whose origin is in the thyroid cartilage. See ASPERA ARTERIA, et VOX.

THYRO-ADENOIDÆ'US. See CRICO-PHARYNGÆI.

THYRO-ARYTÆNOIDÆ'I, arise from the inside of the fore-part of the thyroid cartilage, and are inserted into the arytænoid, serving to compress the glottis, and relax the ligaments of the larynx. Sanctorini calls these muscles *thyro-epiglottici*, because they are partly inserted into the membrane of the epiglottis.

THYRO-CRICO-PHARYNGÆ'I. See CRICO-PHARYNGÆI.

THYRO-EPIGLO'TTICI. See THYRO-ARYTÆNOIDÆI.

THYRO-HYOIDES. See HYOTHYROIDES.

THYRO-PHARYNGÆI, are broad muscles, arising from the outside of the ala of the cartilago thyroides, between its edge and the oblique line in which the thyro-hyoidæi are fixed, and they are a little confounded with the crico-hyoidæi. From thence they run up obliquely backward, and, meeting under the linea alba of the pharynx, sometimes appear to be but one muscle, without any middle tendon. See Winslow's Anatomy; CRICO-PHARYNGÆI, and PHARYNX.

THYRO-PHARYNGO-STAPHYLINI, and STAPHYLINI; two small muscles which accompany the pharyngo-staphylini very closely through their whole course, except that their posterior extremities are fixed in the thyroid cartilage, near the other muscles. They are inserted into the septum palati. They may be reckoned one pair, only under the first appellation. See PHARYNX.

THYROIDE'A vel BRONCHIA'LIS GLANDULA, the THYROID GLAND, surrounds the aspera arteria laterally and before: its use is not known; but it is larger in women than in men, and consequently the fore-part of their necks is not so hollow. It is the seat of the BRONCHOCELE, q. v.

THYROI'DES, (from θυρεος, *a shield*, and ειδος, *likeness* or *shape*). See ASPERA ARTERIA.

THY'RSUS. A THYRSE, (θυρσος, from θυω, impetu feror; the spear bound with ivy, carried in sacri-

fices to Bacchus). Linnæus makes it a species of inflorescence, which may either be nudus or foliatus, defining it to be a panicle contracted into an ovate form, as in the syringa and petasites. It differs from a spike in having the flowers or fruits set more loosely on it, so that there are spaces visible between them. Also a stalk. See CAUDEX.

THYSSELI'NUM PLI'NII. See ŒLSNITIUM.

TIA'RA. See CYRBASIA.

TIBERIA'NUM TORME'NTUM. See COLICA.

TI'BIA, (quasi *tuba, a pipe,* from its resemblance to a hautboy), *focile majus, arundo major, fosilus, canna major, canna domestica cruris,* the LARGER BONE OF THE LEG, is situated in its anterior internal part, and is in shape nearly triangular. Its upper extremity is large, divided into two cavities covered with cartilage, for the reception of the condyles of the os femoris, between which cavities is a rough irregular protuberance for the attachment of the ligaments, admitting a small lateral motion. On the posterior part is a small cavity for the reception of the fibula, and below the fore part a large rough tuberosity, where the ligament of the patella is fixed. The lower extremity is hollow, though a small tuberosity rises in the middle; and the internal side of this cavity is produced into a process called malleolus internus. The internal side of this extremity hath a cavity for the reception of the fibula: the anterior angle of the tibia is sharp, and is called *ocrea;* the spine of the tibia, or shin, the fore-part of the tibia ocrea. In the fœtus both ends of the tibia are cartilaginous and become epipheses.

It may be proper in this place to notice a process for relief when bones are carious, which may frequently prevent an amputation. If the tibia is carious to a considerable depth (see CARIES), the carious part may be removed in the following manner. We must first cut through the skin, the whole length of the part we mean to remove, on each side, saving as much of the integuments as possible. We then cut it across the bone above and below. The muscular flesh must be dissected, as clear as can be admitted from the bone, still preserving as much as possible, a thin plate of pasteboard, horn, or tin introduced, over the upper part of the bone to be removed, so as to support the skin. After clearing the periosteum the morbid portion of the bone should be separated by a strong saw of a circular form. To give encouragement to this operation, it should be remembered, that there have been instances of osseous matter shooting and forming a complete bone, when nine inches or more have been removed.

TIBIA'LIS NERVUS, (from *tibia*), is the internal branch of the sciatic nerve, sent off near the ham, passing behind the popliteus and gastrocnemii, going through the upper part of the soleus, running between it and the flexors of the toes, and to the malleolus internus. It passes behind the malleolus and between the os calcis and the abductor of the great toe, where it divides into the plantaris internus and externus: the first of these furnishes the toe with filaments, and the latter goes to the little toe, and to that adjoining.

TIBIA'LIS ANTI'CUS, a muscle which rises from the head of the tibia, and from the outside of its spine, grows tendinous, and, winding about the inside of the foot, is inserted into the os cuneiforme internum. It serves likewise to turn the sole inwards, and bend the foot upward.

TIBIA'LIS ARTE'RIA. The poplitea at its termination divides into two principal branches, the first of which runs between the heads of the tibia and fibula, passing from behind forwards on the interosseous ligament, where it is called *tibialis anterior;* the second divides into two more, the largest and innermost of which is the *tibialis posterior,* or *suralis arteria.* The anterior lies between the tibialis anticus muscle and the extensors of the toes, comes forwards between the head of the tibia and fibula, passes on the foreside of the interosseous ligament, runs on the side of the tibia about two-thirds of its length. It then passes down in front, under the annular ligament, to the instep, between the first and second metacarpal bones, and sinks into the sole of the foot, where it anastomoses with the posterior tibial artery. The posterior runs between the soleus, the tibialis posticus, the flexor digitorum communis, and flexor pollicis, and passes between the bone and interosseous ligament: in its passage it gives branches to the tibia, and to its marrow; through a canal in its posterior and upper part; then runs behind the inner ankle, communicates with the tibialis anterior, and, surrounded by the neighbouring veins, passes to the sole of the foot, between the os calcis and the thenar muscle, where it is divided into the plantaris interna, which makes a circle like that in the palm of the hand: from this circle branches are sent to the toes.

The following important circumstance respecting this artery, is recited by Mr. Pott. In the upper part of the calf of the leg, under the gastrocnemius and soleus muscles, a small hard tumour is at first perceived, sometimes painful, but always impeding the patient's exercise; though not altering the natural colour of the skin until it hath considerably increased in the bulk. It enlarges very gradually, not softening as it increases, but continuing through the greatest part of it incompressibly hard; but when it hath attained a large size, it seems to contain a fluid which may be felt towards the bottom, apparently resting on the back part of the bones. An opening for the discharge of the fluid, which is small in quantity and sanious, mixed with grumes of blood, must be made very deep, and through a very distempered mass; but the evacuation produces very little diminution of the tumour; and very considerable symptoms of irritation and inflammation soon come on, advancing with great rapidity and exquisite pain, producing a violent fatal fever, and a mortification of the whole leg: it is not therefore advisable. If amputation hath not been performed, and the patient dies after the tumour hath been opened, the mortified state of the parts prevents all satisfactory examination. If the limb was removed without any previous operation, the arteria tibialis postica will be found enlarged, diseased, and burst; the muscles of the leg converted into a morbid mass, and the posterior part of both the tibia and the fibula carious. This disease apparently arises from a ruptured artery, or is always accompanied with it, and is remedied by amputation only. See Pott's Remarks on the Necessity, &c. of Amputation in certain Cases, &c.

TIBIA'LIS GRA'CILIS MU'SCULUS. See PLANTARIS.

TIBIA'LIS POSTICUS; *nauticus,* from the use which sailors make of it in climbing, rises from the tibia and fibula close to the soleus, and from the interosseous ligament runs through the annular ligament: it plays in

a groove of the bone, where it is tied down by the annular ligament, then runs across the foot, and is inserted into the middle of the os scaphoides.

TIBIA'LIS VE'NA, anterior and posterior, are divisions of the poplitea. They accompany their respective arteries in their course.

TIC DOLOUREU'X. See TRISMUS DOLORIFICUS.

TIGI'LLUM. See CRUCIBULUM.

TI'GLIA GRA'NA. See CATAPUTIA MINOR.

TILBURY WATER, found at West Tilbury in Essex, has at the well a straw-coloured hue, and covered with a variegated earthy scum; but preserves its clearness in bottles. It contains a quantity of air, is soft and smooth to the taste, impressing after long agitation in the mouth, a small degree of roughness on the tongue. It appears, from its obvious properties, to be chalybeate; but no steel has been discovered in it. It contains a lime supersaturated with acidulous gas and nitrated kali; the former in the proportion of one pennyweight thirteen grains, and the latter of two pennyweights one grain, in the Winchester gallon. There are also three pennyweights ten grains of sea-salt in the same quantity with a little superabundant mineral alkali. These waters operate mostly by urine, though they purge sometimes on the first drinking. A quart is reckoned a middle dose, and may be taken in a day, in acidities in the primæ viæ, alvine fluxes, and other disorders from debility of the fibres. They have been recommended also in the gravel, fluor albus, immoderate fluxes of the menses, and several complaints. André alleges, that they are equally powerful for diarrhœas, and all kinds of fluxes, as the bark for intermitting fevers. See AQUÆ MINERALES.

TI'LIA. The LIME or LINDEN-TREE, *tilia europea* Lin. Sp. Pl. 733, a tall tree, with spreading branches: the leaves are heart-shaped, serrated, soft, and hairy; the flowers whitish, followed by a kind of dry berry about the size of filberds. It is native in England, and flowers in July. The flowers are styled *anodyne*, and supposed to have an *antispasmodic virtue;* when fresh they have a moderately strong smell, which is soon lost in keeping; and with the smell, their virtue is apparently lessened: they have been much esteemed, but are now neglected in practice. See Raii Historia.

TINCÆ OS, (from its resemblance to a tench's mouth). See OS INTERNUM.

TI'NCAL, TI'NCAR, (*tinkel*, Germ.). BORAX, *chrysocolla auricolla, amphitone, cæruleum montanum*, comes to Europe from the East Indies in a very impure state, in the form of large, flat, hexangular, or irregular crystals, of a dull white or greenish colour, greasy to the touch; or in small crystals, apparently cemented together by a rancid, yellowish, oily substance, intermixed with marl, gravel, and other impurities.

It is purified by solution, repeated calcination, filtration, and crystalisation. One hundred parts of purified borax contain thirty-four of real sedative acid, seventeen of mineral alkali, and forty-seven of water; but of the mineral alkali only about five parts are really saturated, the rest is free; and hence in many cases borax acts as an alkali. As borax is purified in the East Indies, Mr. Engestrom suspects that the tincal is only the residuum of the mother liquor of borax evaporated to dryness, and that the greasiness arises from its being mixed with butter-milk to prevent its efflorescence. See BORAX, SEDATIVUS SAL, and CHEMIA.

TINCTO'RIUS FLOS, (from *tingo, to dye*). See GENISTA TINCTORIA.

TINCTURA, (from the same). Tinctures are spirituous liquors impregnated with the active parts of some medicinal substance; compound tinctures contain more than one ingredient, and *elixirs* in some authors are limited in the same way. Watery impregnations of medicines are called *infusions* or *decoctions*, according as they are prepared by macerating, or by boiling them in water. When the tincture is of a thicker consistence, it is called a *balsam*. Alcohol dissolves only the pure resin; but in its different degrees of strength down to that of wine, it takes up gradually an increased proportion of gum: even the strongest alcohol will hold with resin a small portion of mucilage, either from the water which it still contains, or from its intimate union with the resin. There are, however, many vegetable substances, styled resinous, equally soluble in water and in spirit, as the gum kino, whose tincture will not become white on adding water; and indeed some late experiments on cincona have taught us, that there are vegetable principles different from resin, whose affinities to spirit are very different.

Preparations have been styled tinctures whose menstruum differs from alcohol, as the ammoniated tincture of guaiacum and valerian, formerly styled the volatile tinctures of each, though the last is omitted in the late edition of the London pharmacopœia. Dulcified spirit is sometimes employed; but acids, in general, are considered as improper menstrua, nor do we recollect an instance of their being used in any British pharmacopœia except in an obsolete form the acid elixir of vitriol. In France and Germany it is not uncommon. Fixed alkalis and magnesia are supposed to increase the solvent power of alcohol and water; but they seem only to render the colour deeper.

All the tinctures take their name from the materials which form their bases, and may consequently be found under their specific appellations, yet in former works they were not to be thus discovered. The tinctura amara is now the tincture of gentian; the tinctura thebaica, the tinctura opii, &c.

TINCTU'RA THEBAICA. See OPIUM, &c.

TI'NEA, (from its creeping like the *moth*), consists in little ulcers oozing out a fluid at the roots of the hair, which forms a white friable scab. We have seen it in the roots of the beard. Bell ranks it as a variety of cutaneous ulcer. It has been doubted whether the tinea is a local or a general disease; but it is commonly the latter, though cases have occurred where permanent injuries have arisen from its suppression, and authors of credit have recommended blisters, issues, and setons, either as a part of the treatment or to prevent a relapse. These circumstances are mentioned not as commonly occurring, but to prevent a too indiscriminate practice.

The only effectual remedy is pulling out the hair by the roots, or destroying these by acrid applications. The pitch cap produces this effect with much pain, and we have known each separate hair eradicated by tweezers. The head also has been shaved, and covered with an oil-skin cap, which keeps up a violent and continued perspiration, so as more gradually to destroy the bulbs.

The principal depilatory is mercury, and its most acrid preparations have been employed for this purpose. The chief are the white precipitate (Murray), the solution of sublimate (Duncan), Cinnabar (Hamilton), and the mercurial ointment (Chalmers). The other metallic acrids are the ærugo (Starke), tartar emetic (Blizard), white vitriol, and arsenic, which, in one instance, apparently proved fatal. The balsam of sulphur, after being washed with an alkaline lixivium (Rulandus), the gum ammoniac with vinegar, the oil of silk-worms, the powder of calcined toads (Stoll Prælectiones, p. 285), cantharides, shot, nasturtium, the mineral acids, onions, and the gratiola have been recommended.

Applications of a different nature are the myrrh, tobacco, hemlock, coltsfoot, viola tricolor and ledum palustre. In favour of hemlock we find the testimonies of Murray, Quarin and Stoeller, without adding Storck, who fancied this medicine useful in every disease.

In the Pharmacopœia Pauperum of Banyer we observed, early in our practice, a formula neither inviting from its simplicity nor elegance, which, however, we then tried, and have continued to use for twenty-five years with uninterrupted success, though we generally find it necessary to add one third or one half of axunge. It contains six ounces of cerusse, two ounces of litharge, an ounce and half of burnt alum, with as much muriated mercury, two ounces of axunge, and six ounces of Venice turpentine.

TI'NNITUS AU'RIUM, (from *tinnio, to ring*). A noise in the ear generally resembling the roaring of a cascade, the *paracusis imaginaria* of Cullen. Hoffmann attributes this disorder to spasmodic affections in the inner membranes of the ears, and Heister recommends diaphoretics internally and to fumigate the meatus auditorius externus with the vapours of hot wine, in which rosemary leaves and lavender have been heated, and to put the feet into warm water. When it is the effect of chronical disorders it is difficult to cure. (Etmuller). We have already remarked that it sometimes proceeds from debility. Du Verney on the Ear, and its Disorders. See SONUS and SURDITAS.

TIPIO'CA. See AMBAIBA.

TI'SSUE CELLULA'IRE, & MUQUEU'X. See CELLULOSA MEMBRANA.

TITHY'MALO CYPARI'SSÆ SI'MILIS. See ESULA MINOR.

TITHY'MALUS, (τιτθος, *a dug*, and μαλος, *tender*, from its smooth leaves and milky juice). *Hippomanes, pityusa, peplion*. SPURGE. *Euphorbia palustris* Lin. Sp. Pl. 662, a plant with small smooth leaves, round stalks full of a milky juice: the flowers are in umbel-like clusters; each followed by a capsule, containing three seeds.

TITHY'MALUS HELIOSCO'PIOS, Lin. Sp. Pl. 658; *solsequius, essula solisequa*, SUN SPURGE, WART WORT, and COMMON WATER-SPURGE.

TITHY'MALUS MARI'TIMUS, vel SPINOSUS; *euphorbia paralias* Lin. Sp. Pl. 657, *esula marina, hippophaes*. SEA SPURGE.

The juice of these, and of all the other species, is very acrid, and used only externally, for destroying warts, &c. See Raii Historia; Lewis's Materia Medica.

TITHY'MALUS AIZO'IDES. See EUPHORBIUM.

TITHY'MALUS PALU'STRIS, &c. See ESULA MAJOR.

TITHYMALUS FOLIIS PINI. See ESULA MINOR.

TITHY'MALUS LATIFO'LIUS. See CATAPUTIA MINOR.

TITHY'MALUS ORIENTA'LIS. See ESULA INDICA.

TITILLA'RES VE'NÆ, (from *titillo, to tickle*, because they belong to the ticklish parts of the body). See ILIACÆ VENÆ.

TITI'LLICUM, (from the same). The ARM-PIT. See AXILLA.

TO'DDA PA'NNA. See PALMA JAPONICA.

TOLACA'POLIN. A sort of cherry. See CAPOLIN MEXICANUM HERNANDEZ.

TO'LÆ. TOLES and TOLLES. (See TONSILLÆ.) Severinus applies this term to glandular abscesses in the limbs.

TOLUI'FERA. See TOLUTANUM.

TOLUTA'NUM BALSAMUM. The BALSAM OF TOLU is a resinous juice, flowing from incisions made in the bark of the *toluifera balsamum* Lin. Sp. Pl. 549. It is brought to us in small callibashes of a yellowish brown colour, inclining to red, thick and tenacious; by age growing hard and brittle, without losing any of its odoriferous qualities. In smell it somewhat resembles lemons, particularly if rubbed on the hand, hath an agreeable, warm, sweetish taste, slightly pungent, and without any nauseous relish. Its virtues are, in general, the same with those of the balsamum copaibæ, and of Peru, differing chiefly from these in being milder and more grateful to the palate, and in the stomach less acrid than the former, and less tonic and stimulating than the latter.

This balsam totally dissolves in rectified spirit of wine. In distillation with water it impregnates the liquor with its fragrance; and if the quantity be large, a small proportion of very fragrant essential oil is obtained. If distilled in a retort without addition, it sometimes yields a saline concrete like the flowers of benjamin. It has been chiefly recommended as a pectoral, and said to be, in gleets and seminal weakness, an efficacious corroborant; but it is much weaker than the other balsams, and seldom used, except as forming Dr. Hill's balsam of honey, which is the tincture of tolu sweetened. Dose from five to twenty drops or more, in the same manner and for the same purposes as the balsam of Peru.

Syrup of tolu, of the London college, is made by boiling eight ounces of balsam of tolu in three pints of distilled water for two hours; when cold, the strained liquor is made into a syrup in the usual way.

The *tinctura balsami tolutani* is directed to be made by digesting an ounce and half of balsam of tolu in one pint of rectified spirit of wine till the balsam is dissolved. (Ph. Lond. 1788.) Dose one or two tea-spoonfuls; but both these forms are very trifling and inefficacious medicines.

TOM. See HYBOUCOUHU AMERICANUS.

TOME'NTUM. NAP. COTTON. SHORT WOOL, or FLOCKS, (from *tumeo, to swell up*, being used to stuff pillows, bolsters, &c.) It is properly the short wool not carded and spun; and applied to the nap on the leaves of some plants which were used for the same purpose. Hence *tomentosus* is used to express the stem and leaf, when they are covered with hairs so interwoven as scarcely to be discernible. This species of pubescence

is generally white as on sea plants, and such as grow in exposed situations, calculated to defend their surface from the violence of the wind.

TOME'NTUM CEREBRI. A term applied to the small vessels which pass from the pia mater to the brain, which, when separated from the latter, appear flocculent.

TONICA, (from *τονος*, *tone*, from *τεινω*, *tendo*). Medicines which increase the tone or strength of the body. In a more extensive view, this class is extremely comprehensive, since it includes every means which increases the powers of life in general. Moderate warmth, frequent exercise, not carried beyond the powers of the constitution, irritability exerted, but not exhausted, the secretions duly kept up, and food of a proper quality, and a due proportion regularly supplied, may thus be styled tonics. Yet these are not the objects of the physician when he employs this term, though they ought to be kept in view, when he endeavours to restore the tone and strength. By tonics we mean, in general, the medicines exhibited to correct debility; and, in our classification of the materia medica, have divided them into the bitters either warm or narcotic, the fossils and astringents. This arrangement was not made without farther views, which we have already opened, and which we shall proceed to explain more fully.

Early in this work, under the article ASTRINGENTIA, q. v. we pointed out the analogy between the increased density of the simple solid and the increased tone of the vital, connecting it with the chemical change, the precipitation of gelatine with the tanin. Whatever is the connection, however, between astringents and tonics, it is impossible to apply the chemical fact to the latter; for tonics act in small quantities, applied only to one organ, the stomach; and though it has been rendered probable that some portion, in some form, may be conveyed to the circulating mass (see Alexander's Experiments), no adequate quantity can reach the smaller vessels to produce any precipitation or consequent condensation. If the precipitation is made in the blood, it may be asked, what becomes of the gelatine? These and other difficulties have been stated in the article referred to, and the conclusion must be, that the increased tone of the stomach to which the medicine is applied must be communicated by the usual sympathy to the other organs.

This increased tone cannot, however, be a chemical change; for bark, which has been vomited with little or no diminution of its bulk, has still stopped an impending paroxysm of an intermittent. It is easy to say, that it acts on the nervous power, and from thence on the whole system; but this will be scarcely considered as a satisfactory explanation, and we may not be able to offer one more so.

Irritability of the muscular fibres is the distinguishing property of life: but in excess it is productive of various diseases, and there is no more common cause of this excess than debility. (See CONVULSIO and FEBRIS). If we admit the existence of a nervous fluid, we must allow it to possess different states of mobility; and irritability, from all the phænomena, must consist in increased mobility. To lessen this irritability will be to procure a return of strength, if the cause of debility is removed; and for this purpose tonics are employed; but these we know are useless if the original cause be not removed. In no case is there greater irritability of the arterial system than in hectics; but no tonic will destroy this if the suppuration continues, or extends. Dyspepsia from infarcted liver will not be removed by any tonic while the original complaint remains.

If this be true, tonics are nearly allied to sedatives. We have adduced many facts to prove that bitters, even the warm ones, ultimately induce atony, if continued for a long time; and the narcotic bitters are often powerfully tonics, while some very active astringents possess no tonic power; on the contrary, some powerful tonics are not most slightly astringent, as the oxides of zinc and arsenic. The connection between astringents and tonics is, therefore, in some measure accidental. The former are tonics only, so far as they are sedatives.

If we examine the class of tonics with these views, we shall find those of the slightest powers to be the amara calida. In fact, their aroma destroys in a great degree their sedative power, and the former must become habitual before the latter will show its effects. We thus find them useful as tonics before they act as sedatives; and this idea is confirmed by all practical authors, who recommend short intermissions in the use of bitters, when the disease is somewhat lessened. We know, at least, that by long continuance they become useless, if not, as in the case of the duke of Portland's powder, injurious. Many of these are warmly stimulant, and this quality prevents any injury arising from the bitter.

The narcotic bitters are superior often in tonic power to the amara calida. The ignatia amara which affords St. Ignatius' bean, the hop, the nux vomica, often show tonic powers superior even to the Peruvian bark. The grey nicker, which Neale observes is more active in restoring broken constitutions than any other medicine, is of the narcotic kind. In our lists, the nux vomica was omitted by accident, and the grey nicker has only of late reached us by private importation from the West Indies.

The fossil tonics show some astringency, and the degree differs in different bodies. In the alum, the iron, and the copper, it is particularly sensible to the taste; but in some others it is not distinguishable. Lead, on the contrary, is sweet, which implies a relaxant rather than an astringent quality; yet if the view of its powers in the article PLUMBUM be correct, we shall find that it ought to be considered as a powerful tonic. Perhaps the highly concentrated vegetable acids might have been included in the list; but facts were wanting in their support.

The more pure astringents certainly often combine a tonic power, and many of these are truly bitters; yet, as we have observed that some active astringents possess no such power, they should be separated, and no longer crowd the list of tonics. Authority, however, forbad, and we can only here enter our protest against their remaining on any future occasion.

As there is then no principle, hitherto ascertained, to which the different tonics can be referred, and as to suppose them sedatives will meet all the practical facts and the various phœnomena, it will remain to enquire under what rank they should be arranged. Though allied to

the narcotic sedatives, tonics certainly differ from them: not one of the former display tonic powers. Where then is the distinction? We introduce the question not to answer it, but to point out a deficiency in the proof; nor can it be supplied, unless we admit, that some medicines of the same class act on the nerves, while others exclusively affect the moving powers, a principle that we were unable to establish in any considerable extent. Perhaps these considerations may be pursued; but we have already wandered too far in the region of speculations, nor should we have now indulged them, had we not inadvertently referred, in more than one place, to the present article for this purpose.

TO'NICUS, (from *τονος, strength*). TONIC. Every muscular fibre has a natural tendency to shorten itself, and this is its tonic power. Hence by the word tone, applied to the system, we mean the strength and activity of the moving powers of the constitution.

TO'NICI. Diseases from tonic spasm. See SPASMUS TONICUS.

TONSI'LLÆ, (a dim. of *tolæ, the kernels*). The TONSILS, *amygdalæ; amygdalia; antiades; paristhmia:* their disorders are named *tolæ, toles,* and *tolles.* These glands, seated, on each side, at the lower part of the space left between the lateral half arches of the palatum molle, are of a reddish colour, and externally have many holes, which communicate with an irregular cavity within, containing a viscid fluid, gradually discharged from them into the throat.

The tonsils sometimes swell in consequence of inflammation or schirrus, and we have remarked, that deafness is a frequent consequence. Inflamed tonsils sometimes suppurate and break spontaneously, or the abscess is opened by an appropriate instrument, though a common lancet, guarded at its edges with lint or cloth, will answer the same purpose. Schirrus is not unfrequent, particularly in scrofulous habits, and has sometimes an ulcerated surface; but, in a great number of instances, which the author of this article has seen, it has in no single case become cancerous. In advancing life the tumour generally disappears; but it may be easily extirpated (Memoires de l'Academie de Chirurgerie, v. 423), or taken off by a ligature (Sharp's Critical Inquiry, cap. 6.) The tonsils sometimes appear to acquire a cartilaginous hardness, and calculi have occasionally been found in them (Kentman de Calculis; Memoires de l'Academie de Chirurgerie, v. 461).

TO'PHUS, (from the Hebrew word *toph*). See GUMMA. The term is sometimes applied to the concretions in the joints of arthritics, called *epiporoma.*

Tophi are sometimes found under the tongue, on the membranes, and in the coats of the arteries; but they chiefly appear on the bones, are syphilitic symptoms, and cured by the remedies of LUES, q. v.

TO'PICA, (from *τοπος, a place*); local applications.

TOPINA'RRIA. See TALPA.

TOPOGRAPHIA MEDICA, (from *τοπος, locus,* and *γραφη, a description*). A description of any situation with medical views. These accounts are highly useful in many respects, and comprehend the situation of any town, the neighbouring hills and plains, its prevailing winds, connected with these; its air, the nature of its water, its seasons, weather, and prevailing diseases. We have few works of this kind in our language, and these are imperfect; but we some time since made a catalogue of the publications which had attracted our notice on this subject, and though long, we shall add it in a geographical form. It may be highly useful as a collection of references to direct enquiry.

GREAT BRITAIN.

Huxham on air and diseases.
Bissett, medical constitution of Great Britain.
Haygarth (philosophical trans. lxviii. 9.), *Chester.*
Millar on the diseases of Great Britain.
Sims on epidemics.
Boabis Ireland's natural history.
Sydenhami opera.
Claramontii de aere, locis, et aquis Angliæ, deque morbis Angliæ vernaculis, Lond. 1672, 12mo.
Wintringham on endemic diseases.

DENMARK.

Suter de statu sano et morboso accolarum maris Baltici.
Batholinus de aere Hafniensi.
Henricus de salubritate aeris Havniensis.
Pontoppidan's natural history of Denmark and Norway.

SWEDEN.

Dalberg, tal om nagra det Suenska.
Climatets, Stockholm, 1777. Murray, bib. iii. 35.
Endemici par tractum Sueciæ, vide acta naturæ curiosorum ii. 153.
Lithenius de salubritate Suecicæ sciagrophia.
Linnæi flora Laponica.
——— amœnitates academicæ, passim.
Acta medicorum Suecicorum.

GERMANY.

Formey topographia von Berlin.
Adolphi de salubritate Silesiæ.
Herz Versuch einer mediniseken orsbeschreibung der Uker marckischen Haupstadt Prenzlau.
Gravius de salubritate Hassiæ.
Deichman de salubri aqua et aere Gottingensi.
Schulze de salubritate Halæ nostræ.
Erlich de morbis et affectibus quibusdam Westphalis familiaribus.
Mezger adversaria Westphaliensis.
Ludick de salubritate aeris in Varmia.
Barfoth de salubritate Lundiæ.
Adolphi de aere Lipsiensi.
Braune typographiæ medicæ urbis Lipsiensis specimen.
Burgrav de aere, &c. Francofurti ad Mænum.
Fintz et Krapp de salubritate Bambergensi.
Chartheuser de aere, aquis, &c. Trajecti ad Viadrum.
Hoechstetter observ. dec. iv. 1. Augustæ Vindelicorum.
Weikard vermische Schriften (Fuldensis).
Oelsfedts typographische beschreibung des Herzogthums Madeburg, &c.
Ellisen medicinische ortbeschreibung des Statckens Hoya.

Ruhling Beobachtungen der Stadt Northeim, undder umlieganden Gegand, &c.
Willius Beschreibung der Naturlichen, Beschaffenheit der Grafschaft Hochberg.
Stenzel de præsidiis sanitatis quibus Vittenberga abundat.
Medinische national zeitung, 1798.
Planer de aere, aquis, &c. territorii Erfordiensis.
Spielman de aere, &c. Argentinis.
Holzberger de aere, &c. Argentinæ.
Hufeland's journal der practischen Arzneykunde, vi. vii.

POLAND.

Endtell Warsovia illustrata.
Neuhauser in medicin. national zeitung (Cracow).

HUNGARY AND AUSTRIA.

Faker de salubritate et morbis Hungariæ.
Baty descriptio morborum quorundam Hungaris endemiorum, &c.
Haidenreich medicina Aradiensis vel de morbis in Dacia frequentioribus.
Packner de Austria morbosa per hyemem.
Mayr de Austria morbosa autumno.
Gamnigg de Austria morbosa æstate.
Haberman de Austria morbosa per ver.
Gemory de indole aeris Hungariæ.
Fucker de salubritate et morbis Hungariæ.

FRANCE.

Histoire et memoires de la societe royale de medecine passim.
Journal de medecine v. 64, 65, 66, 68, 56 (Normandy).
Menuret de Chambaud essai sur l'histoire medico-topographique de Paris.
Pousse an Versaliariarum salutaris aer.
Pescharch an sit urbis et agri Parisiensis aer saluberrimus.
Deuxivoye ergo aer Parisiensis salubris.
Ferret an Clivi Meudonici ut amænus sit salubris.
Cabilloui in Hautsierke recueil i. iii. Chalons sur Soane.
De la Berthonye in Hautsierke i. 152, Toulon.
Massac Pæan Aurelianus, seu de laudibus salubritatis soli & cœli Aurelianensis.

HOLLAND.

Van Doeveren de sanitatis Groeninganorum ex urbis historia naturali derivandis.
Van Groenevelt de salubritate aeris urbis Lugduno Batavorum.
Scheuchzer de Helvetiæ aere, aquis, & locis.
Emmeris tentamen medicum ad debellandum insalubritatem Zealandiæ.

SWITZERLAND.

Verdeil mem. de la societé des sciences de Lausanne (Lausannensis).
Thilenius medic. und chir. bemerkungen nebst Beschreibung von Lauterbach.
Abhandel der natur forschenden Gesellschaft in Zurich Turica & Appenzellensis.
Adolphi de incolatus montani salubritate.
Blumenbach. biblioth. med. salubritas Bernæ.

ITALY.

Cartegni trattado de venti in quanto si appartieno al medico & del sito della cittá de Pisa.
Cagnatus de aeris Romani salubritate.
Pugh on the climates of Naples, Rome, and Nice.
Smollett's travels.
Lancisius de adventitiis aeris Romani qualitatibus.
Bononi de situ aquisque Ferrariæ, &c.
Bumaldi de aere Ravenate.
Boschi osservationi intorno alla proprietá salina dell' atmosfera Ligura.
Testi Disinganno overo ragione fisiche fondati su l'Autorità, &c. che provano l'aria Venezia interamente salubre.
De Neris de Tiburtiani æris salubritate.
Sarcone on the constitution and diseases of Naples.
Donii de restituenda salubritate agri Romani.
Constitutione medic. de Fiorenza, 1780, 1781.

AFRICA.

Adanson's natural history of Senegal.
Memoires sur l'Egypte, 4 v. passim.
Assalini on the diseases of the army of the east.
Goldbery's voyage to Senegal.

ASIA.

Russell's natural history of Aleppo.
Hasselquist reise nach Palästina.
Bontius historia naturalis & medica Indiæ Orientalis.
Murray de stupiditate Indiæ Orientalis.

MINORCA.

Cleghorn on the diseases of Minorca.

AMERICA.

Rush, medical observations and inquiries.
Currie's historical account of the climate and diseases of the united states of America.
Jolis Saggio sulla storia naturale della provincia del gran Chaco.
Fermin traite des maladies les plus frequents de Surinambus.
De Dusalos de morbis nonnullis Limæ grassantibus.
Schoepf Reisen durch America.
Chalmers on the climate and diseases of South Carolina.
Sloane's Jamaica.
Des Portes histoire de maladies de St. Domingue.
Moseley on tropical diseases.
Dancer's medical assistant, Jamaica.

MADEIRA.

Adams on the climate of Madeira.
Sloane's voyage.

This catalogue cannot be complete in any branch, but even in its present state may afford useful information, and may serve for a basis on which a more perfect superstructure may be erected. A few little geographical inaccuracies to accommodate the works to the nature of the districts have been purposely admitted, to meet general ideas rather than political arrangements. The number of works might have been increased, but those omitted are of less importance and inferior merit

on the same subjects with those admitted, and an objection may remain that the list might have been still shorter and more select. The references in France are few, the country where this science has been, we have said, chiefly cultivated. This was the reason of its limited extent, for the districts examined are so numerous that they would have doubled the number of works inserted, so that it was necessary to refer to the volumes where they are to be found:—these are the Journal de Medecine, and the Histoire and Memoires of the Society of Medicine at Paris. Two German Journals, viz. Hufeland's, and the Medinische National Zetung, are quoted for the same purpose of abridgment: the volume of 1798 is the only one that has reached us.

See Wepfer Dissertationes de morbis climatum; Buchner de exploranda locorum salubritate; Fincke in versuch einer algemeinen medicinisch-practischen geographie; Kannegieser de locorum aquarum et aeris salubritate; Muller de extispiciis veterum in quantum ad indolem et temperiem regionis dignoscendam valent.

TO'RCULAR, (from *torqueo, to twist*). The TOURNIQUET is a kind of bandage used to check hæmorrhages after wounds or amputations. The most simple of these is a fillet, long enough to encircle the wounded limb, with a small stick to twist it round, and a small bolster to press upon the principal vessel. The fillet must be tied loosely above the orifice of the vessel, and the bolster placed under it, over the artery, and then the fillet twisted by means of a stick until it is sufficiently tight. When the wound is on the arm, the tourniquet must be placed near the armpit, for there the artery is most superficial. The first account of this instrument is in a treatise witten by Mr. Lowdham, an English surgeon, and published in 1679; but it has been since much improved. See Plates; Bell's Surgery, vol. i. p. 26, &c.

TO'RCULAR HERO'PHILI. See CEREBRUM.

TORDI'LIUM, (quasi *torquilium*, from *torqueo, to twist*; from its tortuous branches); *seseli officinale* Lin. Sp. Pl. 345. A plant, the roots of which resemble those of skirret, but they are not employed in medicine. See SISARUM.

TORMENTI'LLA, (because it relieves *pain* in the teeth); *heptaphillum, consolida rubra*, SEPTFOIL, TORMENTIL; *tormentilla crecta* Lin. Sp. Pl. 716. Upright septfoil or tormentil is a plant with slender upright stalks, oblong indented leaves, which usually stand seven at a joint. The flowers are small, and of a yellow colour; the root crooked and knotty, of a dark brown or blackish colour on the outside, and reddish within. It is perennial, grows wild in woods and on commons, and flowers in June.

The root is a strong astringent; and its flavour is highly aromatic. It gives out its astringency both to water and to spirit, but most perfectly to alcohol. It may be administered in powder from ten grains to ℥ss. for a dose, though usually given in a decoction, made by boiling an ounce and a half of the root in three pints of water to a quart; at the end of the boiling about a dram of cinnamon is usually added. Three or four table spoonfuls of this decoction is a dose. Both alone and with gentian it hath cured intermittent fevers, but the dose must be large, and the medicine given in substance. It is one of the strongest of the vegetable astringents; and where fluxes are attended with fever, in constitutions very irritable, it is preferable to any other medicine, as it contains a very inconsiderable degree of resin: according to Dr. Rutty, chronic ulcers are cured by washing with wine or water in which the tormentil has been boiled, and scorbutic ulcers in the mouth as well as relaxed gums and uvula relieved by the same medicine.

The decoction is said to be efficacious in restoring lost appetite, and in epidemic dysentery it is sometimes held in the mouth to prevent infection. In hæmorrhage from the bowels, fluor albus, and involuntary micturition, it is of service. The powder of the tormentil root is an ingredient in the *pulvis cum creta compositus*. (See BOLUS.) This root and that of bistort are similar, and are sometimes used for each other. See Lewis, Cullen, and Rutty's Materia Medica.

TO'RMINA, (from *torqueo, to grieve*). See ILIACA PASSIO.

TO'RMINA, (from *torqueo, to twist*). COLIC PAINS; a DYSENTERY, q. v.

TORNA'DO, (from the Spanish). A HURRICANE; a WHIRLWIND. According to Dr. Schotte the rainy season at Senegal begins about the middle of July, and ends about the middle of October: during this time the wind is generally between the points of east and south, the quarter from which the tornados come. The hurricane is preceded by a disagreeable closeness and weight in the air, which seems much hotter than it appears from the thermometer; its immediate approach is known by the clouds rising to the south-east, and joining so as to make the horizon look quite black, accompanied with lightning and thunder at a distance. The breeze dies away by degrees as the tornado advances, and an entire calm succeeds; the air grows yet darker; animals and birds retire and shelter themselves; every thing is silent, and the aspect of the sky, from whence the tornado approaches, is most dreadful. A violent storm comes on at once, which is so cold as to occasion the thermometer to fall seven or eight degrees in a few minutes, and strong enough to overset negro huts and vessels, or drive the latter from their anchors, and throw them on shore. The storm abates, and heavy rain follows, accompanied with much lightning and strong claps of thunder. Sometimes tornados happen without rain, or at least a very little; but the storm is in that case more violent, and lasts longer. It hath been imagined, that this kind of storm brings some pestiferous quality with it, because several apparently fell sick in one night after a tornado. Dr Schotte thinks that no such ill quality is thus produced by it; and that the diseases may be attributed to the change it produces on the air, and consequently on the body; it may therefore be considered as the occasional cause of a disease to which the body was predisposed long before. Schotte's Treatise on the Synochus Atrabiliosa.

TORPE'DO, (from *torpor, numbness*). See ANGUILLA.

TO'RPOR, (from *torpeo, to benumb*). Diminished sensation and motion, in a fleshy part (Vogel); an intermediate state between a palsy and health (Galen); or a numbness, or deficient feeling and motion. Applied

to the habit, it very often means a sluggishness and inactivity in the moving powers of the machine, either of the whole or of some part. The torpor of animals, who sleep during the winter, does not wholly depend on cold, but the gradually decreasing appetite: if well fed, it may be prevented. Nicholson's Journal.

TO'RTIO, (from *torqueo*). A STRAIN IN A JOINT.

TORTU'RA, (from the same). A WRY MOUTH.

TORTU'RA O'RIS. See TRISMUS.

TORTICO'LLIS, (from *torqueo, to twist*, and *collum, the neck*). The WRY NECK, an instance of contractura.

TO'TA BO'NA. See MERCURIALIS.

TOXICODE'NDRON, (from *τοξικον, poison*, and *δενδρον, a tree*); *edera trifolia*; the POISON-TREE, or POISON-WOOD; *rhus toxicodendron* Lin. Sp. Pl. 379. This tree is extremely noxious, poisoning, it is said, either by the touch or smell, especially while burning. Handling it has sometimes occasioned blindness for many days; but on many it will not produce any bad effect. The poison of the tree is temporary, and never mortal: salad oil and cream rubbed upon the parts expedite the removal of its effects. The first symptoms of its action are a violent itching in the skin, to which succeed inflammation and swelling of the part. Sometimes the whole body is swelled in this manner; sometimes only a particular part, as the legs; and, in this case, they often discharge a considerable quantity of water, and then every trace of disease disappears. Its chief use is for dyeing linen of a black colour. See Philosophical Transactions, vol. xlix. 1755.

TOXITE'SIA. See ARTEMISIA.

TRACHE'A ARTE'RIA, (from *τραχυς, rough*). See ASPERA ARTERIA.

TRACHEA'LIS ARTE'RIA, (from *trachea*), runs up from the subclavia in a winding course, along the aspera arteria to the glandula thyroidea and larynx, detaching small arteries to both sides, one of which runs to the upper part of the scapula.

TRACHEA'LIS VENA. See GUTTURALIS VENA.

TRACHE'Æ. See VAS.

TRACHE'LIUM, (from *τραχηλος, the throat*, from its efficacy in diseases of the throat). See CERVICARIA.

TRACHE'LO-MASTOI'DEUS. See COMPLEXUS MINOR.

TRACHELOPHY'MA, TRACHEOCE'LE, (from *τραχηλος*, and *φυμα*, or *κηλη, a tumour*). See BRONCHOCELE.

TRACHEOTO'MIA, (from *trachea*, and *τεμνω, seco, to cut*). TRACHEOTOMY, *bronchotomia*, and *laryngotomy*; a division of the trachea below the larynx by incision, or by puncture, betwixt the third and fourth ring, or a little lower. The diseases which may require this operation are obstructions on the upper part of the larynx, or foreign bodies accidentally introduced. In the latter case we want only their removal, and the wound may be then closed; but if the opening is required for assisting the breath, it must remain open while the obstruction continues.

In performing this operation, the patient is seated on a low stool, and his head held in an upright position. Opposite the third or fourth ring, the skin is then raised in a transverse fold, and cut so deep that the incision may extend longitudinally from the first ring to nearly the sternum.

The trachea must be next laid bare by separating the cellular substance, and dissecting away the muscular fibres, that they may be removed or pressed sideways. The operator then, guiding his scalpel by the nail of his left hand, supporting the trachea by the thumb and middle finger, makes an incision into the membranous connection of the third and fourth cartilage. A flat canula is afterwards introduced, guarding carefully, in this and every step of the operation, any injury to the back part of the trachea, or the slightest drop of blood from falling in. This canula is soon clogged with mucus, and a double one has been proposed, that one part may be cleaned while the other remains; but the mucus prevents their sliding, and after a day or two the wound between the rings will not close if the canula is removed. The proposal therefore of some authors to take out a portion of one of the rings is, in the greater number of cases, unnecessary, and only requisite when the size of a foreign body to be removed is too considerable to admit of its passing through a common wound. If carefully introduced, so as not to touch the parietes of the trachea behind, we have never seen it excite a cough.

Mr. Bell proposes for this operation a small flat trocar, previously passed through several folds of linen, to prevent its proceeding too far, and to guard against any fluid falling through the wound: this is secured by a plate of metal fitted to the neck. The aperture of the canula is covered with wet gauze. A foreign body is to be removed by small crooked forceps after the hæmorrhage has ceased. A French surgeon proposes cutting through the thyroid and cricoid cartilages; but these parts are highly irritable, and might occasion dangerous coughing.

When the skin is cut through, a small incision may be made into the wind-pipe, and then a short but crooked canula may be fixed for the air to pass through. See Sharpe's Operations; Bell's Surgery, vol. ii. p. 403; White's Surgery, p. 294; Themison Apud Cælium Oculorum, iii. 4; Memoires de l'Academie de Chirurgerie, iv. & v.; Morgagni Dissertationes Anatomicæ, No. ix.; Richer Nov. Commentaria Gottingensia; Wendt Historia Tracheotomiæ nuperrime administratæ.

TRACHO'MA, (from *τραχυς, rough*); *dasymma*, if tettery; *tylosis*, if callous; and *sycosis*, if the pustules should be thick or scabrous. In Cullen's Nosology it is a variety of the ophthalmia tarsi, and consists in a roughness of the eyelids, particularly their internal parts, from scabs, which differ much in their appearances in different instances. These complaints are attended with a weight and heaviness in the eye, a swelling in the eyelids, a pain and itching, a heat and redness in the corners, and in the conjunctiva, a viscid humour mixed with pungent tears flowing from the ulcers, which often agglutinates the eyelids. If this complaint continue long in old people, the lower eyelid grows thick, and turns downwards, so that the cartilage appears to resemble raw flesh. The cause is an obstruction of the sebaceous glands, from a deposition probably of some matter, which by confinement becomes acrid. To relieve the complaint the glands must be destroyed by a caustic, and the pain which it occasions must be allayed by washing immediately with warm

water. The caustic must be applied twice a week. St. Yves on the Disorders of the Eyes.

Mr. Ware calls this disorder the *psorophthalmia*, and describes it nearly in the following words: The ducts of the ciliary glands are ulcerated; their oily soft fluid, mixing with the discharge from the ulcers, is changed into an acrid humour, which quickly inspissates into a hard adhesive scab. This scab spreads the complaint by its irritation over the whole internal edge of the eye-lid, and prevents all relief, until local remedies check the formation of the scab by curing the ulcers which produced it. This inflammation of the edges of the eye-lids produces a glutinous matter, which closely connects them when they have been for some time in contact, so as to require painful efforts for their separation. Usually the ulcers are confined to the edges of the eye-lids, but sometimes they spread over the whole external surface, and excoriate the greater part of the cheek; in the latter case the inflammation often resembles the accompanying erysipelas.

M. St. Yves observes, in his chapter on the ophthalmy, subsequent to the small-pox, that "the pustules on the edge of the cartilage of the eyelids, which penetrate between the cilia and their inner surface, do not cicatrise, from the acrimonious serosity which incessantly covers them; ulcers in consequence often continue several years, and even during life if not remedied." But though the small-pox and measles are frequent causes of this complaint, a slight ophthalmia will sometimes inflame the lids, producing an ulceration and adhesion of their edges. The small pustules also, which form on the outer margin of the ciliary edge, called *styes*, have, in some instances, brought on a similar inflammation, and its consequences; nor is it an uncommon effect of scrofula, scurvy, or lues; but most frequently a local complaint, though, even then, sometimes accompanied with evident marks of a scrofulous constitution.

The ulcerations that appear to be superficial are generally soon removed, but those which are deep yield with more difficulty than such as attended with fungous flesh.

The general practice has been to touch the ulcers with the lapis infernalis, two or three times a week; but to moderate the severity of this method, the part was presently washed with pure water. The pain of this application has, however, prevented its use; and Mr. Ware has proposed a far less exceptionable method. When this kind of inflammation extends over the whole surface of the eyelid, and the cheek, resembling erysipelas, he orders antiphlogists and sedatives; and when the extreme irritability is removed, finishes the cure by means of the unguentum citrinum. (Ph. Ed.) When the lower eyelid turns outward, the general method proposed for the psorophthalmy is usually effectual; and scorbutic, scrofulous, or veneral diseases must be relieved before the eyelid can be benefited. When from scrofula, the remedies usually employed should be continued for a considerable time.

The unguentum citrinum must be sometimes reduced and rendered milder. The best method of lowering is to add one-half, or in irritable habits, a large proportion of the unguentum cerussæ acetatæ. It should be applied at night with a camel's hair pencil.

See St. Yves on the Diseases of the Eye; Ware's Remarks on the Ophthalmia; Galen de Compositione Medicamentorum Ætius Tetrabib, ii. Serm. iii. 42, 43; Vater de Trachomate.

TRAGACA'NTHA, (from τραγος, *a goat*, and ακανθα, *a thorn*). See GUMMI TRAGACANTHA.

TRA'GEA; *drangæa* of Fuschius, is an aromatic powder, preserved with an equal quantity, sometimes a larger proportion, of sugar; and taken in order to strengthen the stomach, and dispel wind. The modern peppermint and cinnamon lozenges are an improved formula, with similar intentions.

TRA'GI. See SPONGIA.

TRA'GICUS. See AURICULA.

TRA'GOPOGON, (from τραγος, *a goat*, and πωγον, *a beard*, from its downy seed, resembling the beard of a goat); *barba hirci;* GOAT'S-BEARD; *tragopogon pratense* Lin. Sp. Pl. 1109. The roots are soft, sweet, nutritive, and laxative, slightly diuretic and expectorant, but these qualities are too inconsiderable to admit this plant among the medicinal ones. The stems when young are eaten like asparagus. See Raii Historia, and SCORZONERA, which it nearly resembles.

TRAGOPY'RON, (from τραγος, and πυρος, *buckwheat*). See FAGOPYRUM.

TRAGOSELI'NUM, (from τραγος, and σελινον). GOAT'S-PARSLEY. See PIMPINELLA.

TRA'GUS. See AURICULA.

TRA'NGEBIN MA'NNA. See ALHAGI.

TRANSFU'SIO, (from *transfundo*, to pour from one vessel to another). TRANSFUSION; or the art of transmitting the blood of an animal into the vessels of the human species. When every disease was supposed to reside in the blood, it was an obvious expedient to supply a depraved fluid by a pure one, in a medical view; and, by means of a syphon, the blood of a lamb, for instance, was directed into the human veins, while a proportional quantity was discharged from other veins. As usual with inventors, the plan was found wonderfully successful; but it sunk into disgrace from an accident, with which the operation was by no means connected. As there are few causes of disease in the blood, the operation of this remedy must be limited; and there is little expectation of its revival, or of its utility. Very extensive details on this subject occur in the early volumes of the Philosophical Transactions.

TRANSPIRA'TIO, (from *transpiro*, *to breathe through*). See PERSPIRATIO.

TRANSVERSA'LES MAJO'RES CO'LLI, are long and thin muscles, placed along the transverse apophyses of the neck, and the four, five, or six upper bones of the back, between the complexus major and minor. They rise from the transverse apophysis, and are usually inserted into the nearest apophysis, sometimes to more remote ones.

TRANSVERSA'LES CO'LLI MINO'RES. See INTERTRANSVERSALES.

TRANSVERSA'LES NA'SI. These muscles rise from the upper part of the upper lip, and run to the ridge of the nose.

TRANSVERSA'LES DO'RSI MINO'RES. Winslow speaks of these as being fixed to the extremities of the lowermost transverse apophyses of the back.

TRANSVERSA'LES PE'DIS. See PARTHENAR MAJOR and MINOR.

TRANSVERSA'LES ABDO'MINIS, rise from the transverse processes of the lumbar vertebræ, the spine of the os ileum, the ligamentum pubis, and the cartilaginous endings of the ribs below the sternum, from whence their fleshy parts run over the peritonæum, and become a broad, expanded tendon, before they pass under the rectus, to their insertion into the whole length of the linea alba. They press the belly inwards, and depress the ribs, assisting vomiting, micturition, and the discharge of the fæces.

TRANSVERSA'LIS, (from *transversus*, *across*, because of the transverse direction of its fibres, or of its originating in the transverse processes of the vertebræ). See TERES MINOR.

TRANSVERSA'LIS ANTI'CUS PRI'MUS, is situated between the basis of the occiput and the transverse apophysis of the first vertebra of the neck.

TRANSVERSA'LIS ANTI'CUS SECUN'DUS, is fixed by one extremity very near the middle of the transverse apophysis of the second vertebra of the neck, and by the other, near the basis of the first.

TRANSVERSA'LIS CO'LLI, and LUMBO'RUM. See MULTIFIDUS SPINÆ MUSCULUS.

TRANSVERSA'LIS DIGITO'RUM, lies transversely under the first phalanges of the toes, is fixed to the first phalanx of the great toe, and inserted into the first phalanx of the little toe.

TRANSVERSA'LIS PLACENTI'NI. See ADDUCTOR MINIMI DIGITI PEDIS.

TRANSVERSA'LIS PERINÆI. A muscle sustaining the perinæum. It is often accompanied by another, styled by Winslow the *inferior prostate*.

TRANSVERSA'LIS SUTURA, runs across the face, sinking into the orbits, and joining the bones of the head to those of the face.

TRANSVERSA'LIS URE'THRÆ; *triangularis*, is a digastric muscle lying along the lower part, or the loose edge of the ligamentum pubis interosseum; its two extremities are fixed in the branches of the ossa pubis, its middle tendon lying on the middle of the edge of the ligament just named.

TRANSVE'RSO-SPINA'LIS LUMBO'RUM. See SACER MUSCULUS.

TRANSVER'SUM EXTE'RNUM CA'RPI LIGAME'NTUM, begins by a broad insertion, fixed in the large extremity of the radius, about two fingers breadth above the styloid apex; crosses obliquely, over the convex side of the basis radii, and partly over that of the carpus, and then turning towards the os orbiculare is inserted into it.

TRANSVE'RSUM INTE'RNUM CA'RPI; an annular ligament.

TRANSVE'RSUS. See PRONATOR QUADRATUS.

TRAPE'ZIUM, Os, (τραπεζιον, *a four-sided figure*, from its shape); the first bone of the second row in the wrist. See CARPUS.

TRAPE'ZIUS MU'SCULUS, TRAPE'ZIA. See CUCULARIS.

TRAPEZOI'DES, Os, (from τραπεζιον, and ειδος, *likeness*); the second bone of the second row in the wrist, resembling rather a truncated pyramid than a trapezium. See CARPUS.

TRAULO'TIS, (from τραυλος, *stammering*). See PSELLISMUS.

TRAUMA'TICA, (from τραυμα); applications to cure wounds, the Greek appellation of astringent agglutinants. See VULNERARIA.

TRA'XINI A'RBOR FO'LIO, FLO'RE CŒRU'LEO. See AZEDARACH.

TRE'DON. See CARIES.

TRE'MOR, (from τρεμω, *to tremble*). (See HORROR.) A TREMBLING, without a sensation of cold. It is a less degree of convulsion, and arises from every cause of debility; a frequent symptom of palsies, and the effect of excesses in every kind of narcotic, as opium, tobacco, and tea, as well as of the indirect stimulants, as ardent spirits. When connected with palsy, it arises from effusions on the brain (Boneti Sepulchretum, lib. i. sect. xiv. 7, 9.); sometimes from worms in the brain (Obs. 10.). A trembling arises from artificial and spontaneous discharges of blood; from violent passion and terror; sometimes from plethora, and, as is said, from a retention of the semen. Those employed in the mercurial mines, as well as the manufacturers of this metal, or its preparations, are subject to it; and lead often produces the same effect.

The cure is frequently trusted to antispasmodics, particularly musk; but the mineral waters are often recommended, and the sulphureous ones, from sulphur rendering mercury inert, are prefered, when this metal has been the cause. Cold bathing, and bark, with valerian, are often useful remedies; and electricity is recommended by De Haen. Small doses of ipecacuanha are said, by Martini, to have been successful. See Galen, Hamberger, and Richter de Tremore.

TREPANA'TIO, (from *trepanum*, *a trepan*). The operation of TREPANNING, proposed to relieve the brain from depressed parts of the skull, fragments of the broken bones of the skull, extravasations of blood or matter, on or under the membranes of the brain, and other causes of pressure, of irritation, and of inflammation. Many parts of the skull were formerly considered as unfit for this instrument, but the operation hath been performed on the greater number with the happiest success, and similar objections lie against some parts on which custom allows the trepan to be employed.

The causes, which chiefly require the use of the trepan, are those in which a pressure is evident on the brain, either from extravasated fluids, or from a depressed bone. Extravasated fluids are, however, often absorbed, and, for this purpose, the most free and repeated venæsection, with active saline laxatives, are necessary. The bleeding, recommended in pleurisy, will not be too plentiful for a strong young man; and if the symptoms are very violent, the quantity may even be increased. Thirty ounces have been taken, and the evacuation repeated within twelve hours. In fact, the plan originally laid down by Wiseman must be followed closely if the patient can be saved.

The symptoms which show compression are dilated pupils, an apoplectic stertor, the pulse particularly low, full, and strong. We have said (see CONCUSSIO) that the dilated pupils often attend concussion when violent, but the apoplectic stertor, and the slow pulse, show compression; and the opinion is confirmed if the pulse does not rise on the first bleeding. In any violent accident it will be certainly proper to examine the wound; but it is highly improper, as is too often done,

to cut out a portion of the scalp on every occasion. It will be necessary to cut down on the skull, through the wound, but without removing any portion of the scalp. It is then not difficult to ascertain, with a probe, whether any fracture exists, taking care not to mistake a suture for a fissure, and to examine whether the pericranium is loosened from the skull, a certain sign of serious injury. If there is no depression, if the insensibility lessens, and the pulse rises on copious bleedings, we need not be more active. Tranquillity, rest, the lowest diet, and the other necessary evacuations, will relieve the patient. Should, however, the insensibility increase, whatever be the appearances on dividing the scalp, we must still proceed to the operation, for there is probably a considerable extravasation. See FISSURÆ.

Morgagni (de Sedibus, &c. l. ii. 12—20), and Richter in his Bibliotheca, iv. 655, discuss at some length the question where the trepan may be safely applied; but the happy boldness of modern practitioners has prevented any tedious disquisition. Copland (Medical Commentaries, Edinburgh), and Gooch (Practical Treatise, i. 301, &c.) have applied it to the occiput and the temporal bones, and it is, we believe, only applied with hesitation over the longitudinal sinus. In its vicinity, on either side, we have known it often used. Pott has remarked that the sutures offer no difficulty, but in children; Theden observes that the application does not succeed, probably on account of the strong attachment of the dura mater to the sutures. In fractures near the sutures the trepan should rather be applied to either side of these divisions.

When the operation is resolved on, the instruments and dressings in readiness, the head previously shaved, must be held steady upon a person's knee. With a proper knife and the scalprum, a piece of the scalp must be removed; enough to give room for a sufficient number of perforations. The incision should be bold, so as at once to reach the bone, and the edge of the knife should be inclined from the wound so as to cut more of the pericranium than of the skin: then raising the pericranium a little with the point of the knife, quite round the incision, with the scalprum the skull must be cleared of its membranes. The trephine is the most commodious instrument, for it works both backward and forward; and when the saw hath entered well into the bone, the central pin should be taken out, as well as the saw itself, to examine the depth to which it hath passed, and to brush out the small portions of bone that might impede the operation. The diploe in some parts of the cranium is constantly, in others occasionally, wanting, and this circumstance should be attended to. When the piece is loose, it is taken out with the forceps; and if the lower edge of the perforation be rough, it is smoothed with the lenticular. The depressed piece of skull is next to be raised with an elevator, now made with fulcra, to rest on the sound bone. If extravasated matter seems lodged under the dura mater, which is discovered by a tumour, it must be discharged by puncturing. If the symptoms of compression do not appear to arise from a fracture, but if extravasation under a fissure only is suspected, the trephine must be applied over one part of it, as the extravasation is often immediately below; and when the fissure is of a considerable extent, a perforation must be made at each end, if not at the sides. When several perforations are made to remove many depressed fragments of bone that have their internal surface larger than their external, it is necessary to apply the trepan as near the fractured parts as possible, and to unite the perforations to avoid cutting the intermediate spaces with the head-saw. In places where the unequal thickness of the skull is observed, it is best to elevate the piece that is sawed before it is cut quite through, that the membrane may escape unhurt.—When an injury happens on a suture, where it is not thought advisable to use the trepan, a perforation must be made on each side. When the pieces of bone or the extravasated fluids are removed, the dressing should be as innocent in quality, and small in quantity, as possible; clean dry lint to absorb the matter is only wanted; and this may be kept on by a common woollen cap, which is preferable to all bandages. After dressing, the patient must be laid in as easy a posture in bed as possible, with his shoulders raised. Perfect quiet, open bowels, venæsection, and a low diet, are often equally necessary before as after removing the pieces of the skull. The air of the patient's room should be cool, and the room itself airy. In young people the perforations are in time filled up with a substance of a bony hardness; but in adults this repair is less perfect. Sometimes a fungus proves troublesome, but it is best prevented by applying a plate of lead, as invented and described by Belloste, and Gooch; and removed by chalybeate and astringent applications, but it often yields slowly.

See Belloste's Hospital Surgeon; Heister's Surgery; Sharpe's Operations; Gooch's Cases and Remarks; White's Surgery, p. 220; Hill's Cases in Surgery; King in the Transactions of the Irish Academy; Pott's Observations.

TRE'PANUM, TRE'PHINE, (from *τρυπαω, to perforate*). A TREPAN; *pereterion*, a circular saw, with which the cranium is perforated in the operation called *trepanning*. It hath received different names from its various forms, as *abaptista, anabaptiston, modiolus, chœnicis, terebra, terebella*. Until lately, the trepan was very generally used, but the trephine is more commodious, and acts as quickly as the trepan. See plates of Chirurgical Instruments, and TREPANATIO.

TRIA'NDRIA, (from *τρεις*, and *ανηρ*). The name of the third class in the Linnæan system, comprehending those plants which bear hermaphrodite flowers with three stamens.

TRIANGULA'RES STE'RNI, (from *tres*, and *angulus*); *pectorales interni, sterno-costales*, rise from the side and edge of the sternum and xiphoid cartilage of the sixth, fifth, fourth, third, and second ribs, to depress them.

TRIANGULA'RIS. An appellation of the *depressores labii superioris, scalenus, deltoides, transversales urethræ, pyramidalis nasi*, and *splenius*.

TRIANGULA'RIS VE'NA. The EXTERNAL JUGULAR VEIN, where it passes through the musculus triangularis.

TRI'BULUS, (from *τριβω, to vex*). See CALTROPS.

TRI'CA LUMBO'RUM. See PLICA POLONICA.

TRI'CEPS AU'RIS. See ABDUCTOR AURIS.

TRI'CEPS, (from *tres*, and *caput*). THREE HEADED; but Douglas divides it into four. It rises by its first head from the fore part of the os pubis, and its ten-

don is inserted into the linea femoris aspera: it is then blended with another head which runs down to the knee. The second rises from the lower part of the os pubis, and is inserted higher in the linea aspera; the third from the small process of the ischium, close to the obturator externus, inserted in the linea aspera behind the little trochanter; the fourth from the ischium and its tuberosity, inserted in the linea aspera, and, joining with the first, forms a tendon which goes to the knee, blended with that of the vastus externus. See ADDUCTOR FEMORIS.

TRI'CEPS EXTE'NSOR CU'BITI, a three-headed muscle of the humerus, *anconæus major externus & internus* of Winslow; *biceps & brachialis externus* of Douglass. The first arises tendinous from the inferior costa of the scapula near its cervix, and is styled *longus*. The second, *brevis*, arises by an acute tendinous fleshy origin from the back part of the os humeri, a little below the head, outwardly. The third, *brachialis externus*, rises at the back part of the humerus. These heads unite below the insertion of the teres major, and cover the hinder part of the humerus. It is inserted into the olecranon, partly into the condyles of the os humeri, adhering firmly to the ligament.

TRI'CHIA, or TRICHI'ASIS, (from θριξ, *a hair*), *ophthalmia trichiasis* of Cullen, *entropium*, *distichiasis*, *districhiasis*, *capillitium*, *distichia*, an inversion of the cartilage on the edge of the eyelid, from which it bears upon the conjunctiva and cornea, exciting, by the friction of the eyelashes, an inflammation in the eye. It is defined by Gorræus, "A falling-in of the eyelids, and a preternatural generation of hairs on them;" and he divides it into three species, *phalangosis*, *ptosis*, and *hypophysis*, to which another, *distichia*, has been added. See BLEPHAROPTOSIS.

The *upper lid* and its ciliary edge, according to Mr. Ware, are preserved, both in motion and rest, in their natural situation by the equal, though contrary, actions of the musculus orbicularis, and levator palpebræ superioris. The skin of the upper lid is always very thin, flaccid, and folded, so that in trichiasis of this lid there seems a relaxation of the levator palpebræ superioris, and a contraction of the superior part of the orbicularis. The cure is only palliative, when, in order to immediate relief, the eyelashes are extracted by their roots. The radical cure is effected by an incision through the integuments of the upper eyelid, from the inner angle of the eye to the outer. The fibres of the orbicularis muscle must then be so separated as to expose the expanded fibres of the levator muscle as near to their termination in the edge of the lid as possible, and a small warm cauterising iron, adapted to the convexity of the globe of the eye, passed two or three times over the tendino-carneous fibres. Thus, by producing a slight irritation, which occasions contraction, a cure may be expected.

The *lower lid*, whose motion is very small in comparison with that of the upper, is preserved in its natural state by the equal action of the orbicular fibres spread over it, and the thickness and elasticity of the skin which covers it. A trichiasis in the lower lid can, therefore, only arise from a relaxation of the skin, and a contraction of the inferior part of the orbicularis. The cure will consequently depend on increasing the renitency of the skin, so as to prevent the contraction of the musculus orbicularis. When the case is recent a cure hath sometimes been affected by forming a fold in the skin before the inverted lid, to draw its edge from the eye, and preserving the skin in that state by the application of sticking-plaster. In slight cases the skin may recover its tone by these means; but in others it will be necessary to cut off a small transverse portion of the loose skin below the edge of the lid, and afterwards confine the sides of the wound together by means of a suture.

Richter remarks that he had often performed the operation, and generally found that he had not cut enough of the skin, and consequently had only lessened, not cured, the complaint. He advises every one, therefore, to cut much more of the external skin of the eye than appears necessary.

Sometimes none of these methods will suffice, as the ciliary edges are not only inverted, but likewise contracted in their length. In this case their circumference must be enlarged either by an incision of the outer angle, or by a complete division of the cartilage, called *tarsus*, in the middle. The first of these operations is no more than a simple straight incision with a sharp-pointed curved bistory. The last, which is seldom necessary, will be best performed by the same instrument; only observing, that the point be carefully introduced between the globe and eyelid, and carried below the cartilage, that is about one-eighth of an inch; whence it is to be pushed outward in a horizontal direction till it hath cut its way through the lid. The cartilage being thus entirely divided, each portion will recede towards the angles, and a separation be left between them, which will not only take off the complaint at present, but prevent its return for the future. Bell's Surgery, vol. iii. p. 275; Ware on the Ophthalmy; White's Surgery, p. 247.

TRICHI'ASIS, (from θριξ, *hair*), a term for an affection of the urine, in which something like hairs is seen floating. Fissures, or a roughness in the skin, of the breast, and abscess in a woman's breast. Erotianus.

TRICHI'ASIS, (from the same). *Mictio pilorum*. See PLICA.

TRICHI'SMOS, (from the same); *capillatio*, a species of fracture of the cranium, almost imperceptible to the sight and sometimes the cause of death, because it cannot be discovered.

TRICHO'MA, (from τριχες, *hairs*). See PLICA POLONICA.

TRICHO'MANES, (from τριχες, *hairs*, and μανος, *thin*, because it resembles fine hair). See ADIANTHUM NIGRUM.

TRICO'RNES, (from *tres*, and *cornu*); muscles which have three terminations, or horns.

TRICOCCÆ, (from τρεις, and κοκκος), the thirty-eighth order of plants in Linnæus's natural method, consisting of a three-cornered capsule, containing three seeds in three separate cells. The order is not strictly natural.

TRICUSPIDA'LES VA'LVULÆ, (from *tricuspis*). See COR.

TRI'ENS. See CYATHUS.

TRIFO'LIA SPI'CA. See CAAPONGA.

TRIFO'LIUM, (from *tres*, and *folium*, because it

has three leaves on one stalk). TREFOIL. *Quadrifolium trinitas.* CLOVER, used for feeding cattle only. See Raii Historia.

TRIFO'LIUM ACETO'SUM. See ACETOSELLA, under ACETOSA.

TRIFO'LIUM PALUDO'SUM. MARSH TREFOIL, or BUCKBEAN. *Menyanthes trifoliata* Lin. Sp. Pl. 208, is a plant with large oval leaves, pointed at each end like those of the garden bean; set three together on long pedicles, which embrace the stalk to some height, leaving it afterwards naked to near the top, whence arises a short spike of pretty large reddish-white monopetalous flowers, each cut into five segments, hairy on the inside, and followed by an oval seed-vessel. It is perennial, grows wild in marshy places, and flowers in May. The leaves are of a penetrating bitter taste, which they impart both to water and spirit, without any remarkable flavour. They are usually infused in water, with the addition of some grateful aromatic, as orange peel, or the canella alba. If a pint of this infusion is drank in a day, it is diuretic and laxative. See Lewis's Materia Medica.

This plant has been highly commended as a tonic, a bitter, and astringent, and supposed to be singularly successful in scurvy, dropsy, jaundice, asthma, periodical head-ach, intermittents, hypochondriasis, rheumatism, scrophula, worms, gout, cachexy, catamenial obstructions, palpitations of the heart: in infusion, it has proved a good wash in the impetigo, scabies, and tinea, according to the report of Francus.

Dr. Cullen considers it a very pure bitter, of a strong kind, not losing its strength by drying, and has seen several instances of its good effects in some cutaneous diseases of the herpetic and apparently cancerous kind, taken by infusion, like tea. (Materia Medica.) In these diseases, as well as in some rheumatic and hydropic cases, it has lately been much used as an alterative and aperient. It is a bitter, however, of the narcotic kind, and though such have been styled deobstruent, we have never had any evidence of its utility in visceral obstructions. It is sometimes substituted for hops in malt liquors. The leaves may be given in powder from ℈i. to ℈ij. two or three times a day; but a strong infusion joined with some grateful aromatic is perhaps preferable.

TRIFO'LIUM ARVE'NSE. See LAGOPUS.

TRIFO'LIUM AU'REUM and HEPA'TICUM. See HEPATICA NOBILIS.

TRIFOLIUM ODORATUM. See LOTUS URBANA.

TRIFO'LIUM CABALLI'NUM, and MELILO'TUS. See MELILOTUS.

TRIGE'MINI NE'RVI, (from *tres*, and *geminus*); *innominati*. The fifth pair of nerves, which rise from the annular processes, where the medullary processes of the cerebellum join, in the formation of that tuber, to enter the dura matter near the point of the petrous process of the temporal bones; and then sinking close to the receptacula, at the sides of the sella turcica, each becomes in appearance thicker, and goes out of the skull in three great branches; orbital, maxillaris superior and inferior.

TRIGE'MINUS MU'SCULUS. See COMPLEXUS.

TRIGONE'LLA, (from τριγονος). See FŒNUM GRÆCUM.

TRIGY'NIA, (τρεις, and γυνη). The third order in the first thirteen classes of the Linnæan system, except the first, fourth, and seventh, including those hermaphrodite plants which have three pistils in each flower.

TRIHILATÆ, (from *tres*, and *hilum, a mark in the seed*). The twenty-third order in Linnæus' natural method. It consists of plants which have three seeds each, marked with a cicatrix where they are fastened to the fruit. It contains but one or two plants ever used either as food or medicine, and is by no means a correctly natural order.

TRIJUGUS, (from *tres*, and *jugum*). A pinnate leaf with three pair of leaflets.

TRILOCHIS, (from τρεις, and γλωχις). The pubes of plants, when they have *three* curved *hooks*.

TRINITAS, (from *trinus, by threes*). See TRIFOLIUM.

TRIOE'CIA, (τρεις, and οικος). The third order in the class polygamia of Linnæus, containing plants which have male and female flowers of the same species, on three distinct individuals.

TRIO'RCHIS, (from τρεις, and ορχις). A person with three testicles.

TRIPA'STRUM APPELLIDIS. A machine for setting fractured limbs on the principle of one for launching ships, invented by Appellides or Archimedes. It was worked by three cords, and consequently called *tripastrum*.

TRIPETALOIDEÆ, (from *tria*, and *petala*). The fifth order of Linnæus' natural method, chiefly containing grasses; but all the genera have not three petals.

TRI'PLEX MU'SCULUS. See TRICEPS.

TRIQUE'TRA O'SSA, (from *tres*). *Ossa Wormiana*, from Wormius, who first observed them, are small irregularly shaped pieces, principally betwixt the parietal and occipital bones, joined by true sutures to their adjacent bones.

TRI'SMUS, (from τριζω. *strideo, to gnash*); *capistrum, tortura oris*, LOCKED JAW. Dr. Cullen considers this as a species of tetanus, defining it a spastic rigidity, particularly of the lower jaw. The varieties are, 1. *Trismus nascentium*, which seizes infants within the two first weeks from their birth; 2. *Trismus traumaticus*, from a wound, or cold; to this belong the *angina spasmodica, convulsio a punctura nervi: trismus catarrhalis*. The fifteen other species of Sauvages he considers as spurious, or false; either because they do not depend upon spasm; because they are rather convulsive than spasmodic; or, are affections of the muscles of the face, rather than of the lower jaw. See Synopsis Nosologiæ Methodicæ, vol. ii. p. 214.

Every kind of irritation will induce the disease. Wounds and operations of almost every sort have been its causes: even pulling by the hair, the extraction of a tooth, the irritation from an artificial tooth, a caustic applied to a bubo, repelled erysipelas, suppressed perspiration, cold during the use of mercury, continued cold with damp in the warmer climates, violent vomiting, retained meconium, an improperly tied navel-string, and a fit of passion, terror, or hysteria, are said to have occasioned it. In one instance it arose from a burn on the hand, which was relieved by repeated effusion of cold water, and was immediately preceded by an affection of the stomach. Dr. Huck Saunders found a large proportion of his wounded soldiers

seized with it, who had been left in a cold night subsequent to the action, though in so high a latitude as that of Ticonderago. It is most commonly, however, fatal in warm climates, where the debility and the irritability of the constitution are considerable. It is said to affect parrots, and is undoubtedly often fatal to horses.

Opium, as in tetanus, is the principal remedy, and it has been topically applied to the masseter muscle, to the umbilical cord of a newly-born child, and to the soles of the feet. Dr. Rowley, who cures the worst diseases with the most insignificant medicines, informs us that opium, musk, and warm bathing, were together ineffectual in trismus, where other antispasmodics have been, it is said, used with success. Musk is recommended by Dr. Huck in the Medical Observations and Inquiries, iii. 31; oil of amber by Dr. Carter, in the Medical Transactions, ii. 4; and the fetids which Dr. Carter also used, by Stoll, vii. 353. Mercury has been highly recommended by Rush, by Home, and Stoll; nor is there, we have seen, a more certain method of supporting the action of the system than by a mercurial course. In general, however, there is not a sufficient time for its action.

With a similar view of supporting the action of the system, warm bathing and diaphoretics have been recommended by Stoll and Chevalier, while the same end has been obtained, though by opposite means, viz. cold bathing and cold affusions (Lind on the Diseases of Warm Climates; Currie's Memoirs of the Medical Society London; Philadelphia Transactions, i. 21). Electricity and blisters have been found good auxiliaries.

When arising from a wound, active stimulants have been applied, perhaps to destroy the irritation by excess of excitement, or the part when unimportant has been amputated, but we ought to reflect that after an operation the disease is as likely to recur as from the former injury. Yet on the whole a lacerated wound is a more common cause of the spasm than one inflicted by a sharp instrument. See TETANUS.

TRI'SMUS DOLORI'FICUS; DOLOR FACIEI CRUCIANS, q. v. *tic doloureux*, PAINFUL AFFECTION OF THE FACE, extremely violent excruciating pain, often excited by opening and moving the mouth, attended with copious ptyalism, pervigilium, and continued convulsive agitation of the adjacent muscles. Dr. Haighton, (Medical Records and Researches, 1798) successfully treated this disease by an entire division of the suborbitar nerves; but André had long cured before this complaint by burning with a cautery the same nerve, and by excision: the disease was greatly alleviated by the ulcers formed by cauterising, though they did not touch the nerve affected. (Sauvages' Nosologia Methodica, ii. 593.) We have already considered this subject in the article referred to, and now resume it chiefly to suggest the following circumstances.

The operation is not always effectual; and when it has appeared so for a time, the pain has returned with great violence. after some months or years. The suspicion which this fact excited led to a farther examination of the complaint, and in a violent instance of the disease, the eye and the stomach appeared to be affected beyond what mere sympathy might demand. The nerves which supply the eye externally, and the slight connection of the intercostal with the brain, are nearly from the same spot in the cerebrum, and it did not seem improbable that the disease may have really been at the origin of the nerve, though felt as usual at its extremity. This reasoning led the author of this article to employ the arsenic, and in one instance with a decided good effect. Others, led perhaps by different views, have since used it, apparently with some success; and still more lately a mercurial salivation has been found useful.

TRISSA'GO, (quasi *tristaga*, from *tristis*, because it dispels *sadness*). See CHAMÆDRYS and SCORDIUM.

TRISTI'TIA, (from *tristis*, *sad*). GRIEF or SORROW, relaxes the solids, impairs the vital power, and checks perspiration: it particularly weakens the stomach and intestines, occasioning flatulence and every symptom of weakness. Opiates in moderate doses are beneficial.

TRITÆOPHY'A, TRITÆ'US, (from τριταιος, *a tertian*, and φυω, *nasco*), an epithet of a fever resembling a tertian, but with obscure or short intermissions. Linnæus calls it a continued tertian. Erotianus defines it a fever which gives signs of approaching paroxysms, but though the intervals are regular, it never arrives at perfection. Its name is derived from its great resemblance of a tertian; and it is often called a small semitertian. Dr. Cullen properly considers it as a remittent fever, of the tertian type.

TRI'TICUM, (from *tero*, *to thresh*). WHEAT; *frumentum*, *triticum hybernum* Lin. Sp. Pl. 126. Whether in the form of flour or of starch, it is the most glutinous of the farinacea, and this is the farinaceous food most generally used by the superior classes over the whole of Europe. It can be formed into a more perfect kind of bread than any other of the cerealia yet known. See PANIS, BREAD, and CERELIA.

TRI'TICUM RE'PENS. See GRAMEN CANINUM.

TRI'TICUM VACCI'NUM. See MELAMPYRUM.

TRITO'RIUM, (from *trito*, *to beat small*). See DEPURATIO.

TRITURA'TIO, (from *triturare*, *to rub* or *grind*). TRITURATION. The reducing a solid body ito a subtile powder, or grinding with some liquid. Powders are united by trituration with a view to their subsequent division into doses.

TRO'CAR. The name of an instrument used to discharge the water in an ascites; from the French words *un trois quart*, *a three quarters*, expressive of the triangular point of the instrument. It is furnished with a canula for the fluid to pass through; but as this, whatever be its tenuity, must furnish some resistance in passing through the integuments, it is now constructed to sink into a circular shoulder, and room is made for withdrawing it by the elasticity of the canula, slightly divided a little way from its extremity.

TROCHANTE'RES, (from τρεχω, *to run*, because several muscles that move the thigh are inserted into them). Two processes of the thigh bone, of unequal size. See FEMORIS OS.

TROCHI'SCI, (a dim. of τροχος, *a wheel*), *artiscus*, *tabella bacilli*, *pasta regia*, *pastillias*, *cyclisci*, *dactylios*, *morsellus*, *morsulus*; TROCHES also called tablets and cakes, are made by mixing the medicine with a proper quantity of sugar, and the mucilage of gum tragacanth; and when formed into a stiff paste it is cut into proper portions, and dried. This form is adapted

for medicines designed to be slowly swallowed, as demulcents, which chiefly sheath the epiglottis, and the remedy for the bronchocele. Modern refinement has extended their use, and we have peppermint, cinnamon, ginger, paregoric, and even ipecacuanha drops, since it has been fashionable to take small doses of ipecacuanha for indigestion. These lozenges are of easy conveyance, and ready when suddenly wanted. The chief objection to this form is when an antacid is required, since the sugar sometimes creates more acid than the absorbent neutralises. See COLLIX.

TROCHI'SCI CY'PHEOS. See CYPHI.

TROCHI'TÆ. See ENTROCHUS.

TRO'CHLEA. Τροχιλεα, *a pulley*, (from τρεχω, *to run*), a cartilaginous pulley, through which the tendon of one of the muscles of the eye passes.

TROCHLEA'RES, (from *trochlea*). See PATHETICUS.

TROCHLEA'RIS MU'SCULUS. See OBLIQUUS MAJOR OCULI, or SUPERIOR AMATORIUS.

TROCHOI'DES, (from τροχος, *rota*, and ειδος, *forma*, similar to a wheel); *axea commissura*, an epithet of an articulation, or juncture of bones, when one is inserted into the other like an axletree, which has the motion of a wheel. The first and second vertebræ of the neck are articulated in this manner.

TROI'SIEME, LE, MU'SCLE DU TRI'CEPS. See ABDUCTOR FEMORIS, TERTIUS and MAGNUS.

TRO'MPA. See CETE ADMIRABILE.

TSI'AM PA'NGAM. See CAMPECHENSE LIGNUM.

TSIANAKU'A. See COSTUS.

TSJE'RU-CA'NSJAVA. See BANGUE.

TU'BA EUSTACHIA'NA, (from *tubus, a hollow pipe*); *aquæducus, aquæductus Fallopii, meatus cæcus, ductus auris palatinus, meatus a palato ad aurem*, was first discovered by Alcmenon, a disciple of Pythagoras, who called it the auditory passage; but Eustachius claims the honour, and from him its present name is derived. Fallopius calls it the aquæduct; others *ductus auris palatinus*. This tube passes from the fore-part of the drum of the ear to the back part of the nose, above the root of the velum pendulum palati, and allows the air to pass inwards. See AUDITUS, SONUS and SURDITAS.

TU'BÆ FALLOPIA'NÆ, *parastatæ varicosæ* of Rufus Ephesius, rise from the uterus, and are there large enough to receive a hog's bristle; they then proceed in a tortuous course, and terminate near the ovaria, in an irregular fringe, where their diameter is about a third of an inch. This fringe is called *morsus diaboli*, or *foliaceum ornamentum*, and is hung upon a membrane like the mesentery, between the doublings of which the vessels run to the tubes. Their use is to supply a passage for the ovum, from the ovarium into the uterus, subsequent to impregnation. These tubes are sometimes found cartilaginous, sometimes a fœtus has been found in them, so that the animation of the ovum precedes its escape from the ovary. In one instance it has been found ossified, and frequently from different causes imperforated. (Sandifort Observationes Anatomico-Pathologicæ; Weitbrecht in Comment. Petropolitan, iv. 261). It has prolapsed through a fissure in the vagina. See GENERATIO.

TU'BÆ NO'VUS VALSA'LVÆ MU'SCULUS. See CIRCUMFLEXUS PALATI.

TUBERA. (from *tabur*, Hebrew). Tumours of the solid parts, not containing a fluid. See AMANITA.

TUBE'RCA CERVI'NA, (from *tuber, a round ball*). See AMANITA.

TUBE'RCULA MAMILLA'RIA. See PAPILLÆ MAMILLARES.

TUBE'RCULA QUADRIGEMINA, CORPORA QUADRIGEMINA, EMINENTIÆ QUADRIGEMINÆ, four white oval tubercles of the brain, two of which are situated on each side over the posterior orifice of the third ventricle and the aquæduct of Sylvius. See NATES and TESTES.

TUBE'RCULUM, (a dim. of *tuber*); *epanastasis; phyma*; a hard superficial tumour, circumscribed, and permanent, or proceeding very slowly to suppuration. See VOMICA.

TUBE'RCULUM LOWE'RI. See COR.

TUBE'RCULUM ANNULA'RE. See MEDULLA OBLONGATA.

TU'BULI LACTI'FERI, (a dim. of *tubus, a pipe*). See LACTIFERI DUCTUS.

TUBULO'SUM FO'LIUM. See FARCTUS.

TU'BULUS DENTA'LIS. See DENTALIUM.

TU'BULUS MAR'INUS. See ANTALIUM.

TU'GUS. See AMOMUM.

TUMIDO'SI, (from *tumeo, to swell*). See INTUMESCENTIÆ.

TU'MIDUM, (from the same). See BRONCHOCELE.

TUMOR, (from the same). BOTHOR, Arab. q. v. *epanastasis*. The morbid enlargement of a particular part, without being caused by inflammation. This definition, though plain and simple, is not, however, unexceptionable; for dropsical swellings, from their extent, would be excluded, and yet hydrocele must be introduced, unless it be alledged that in this case the tumour extends above the organ affected. Mr. Abernethy limits, on the contrary, the meaning of the word too strictly, confining it to such swellings as arise from new productions; yet he is compelled to admit enlarged glands, as their contents may be such, though it will be obvious that extirpation or death must take place before it be ascertained whether any given disease is in reality a tumour. With all these difficulties before our eyes, we may have erred in our arrangement (see NOSOLOGY): but this is now of little importance; nor shall we stay to defend it.

The only other classification we have met with is in a work which seems to have rarely reached this country, since Mr. Abernethy has not seen it, Plenck's. The first part was published in Latin, at Vienna, in octavo, 1767, and about three afterwards, in the German language, at Dresden and Leipsic. He divides tumours into sixteen genera, inflammatory, purulent, gangrenous, indurated, watery, bloody, encysted, excrescential, bony, earthy, airy, salivary, bilious, milky, spurious herniary, and organic. As the work is rare, we shall mention a few examples of the more important classes. The inflammatory tumours are the true *erysipelatous* ones without fever; the indurated the *strumous*; the aqueous the *lymphatic*, which is a smooth, round, white, indolent, and elastic swelling, arising from a ruptured lymphatic. Among

the *cystic* tumours he mentions *lipoma*, which differs from teatom in containing fat only, though there is a species whose contents are different, referred to sarcoma. An instance of the excrescential tumours is the *cercosis*, a polypus from the uterus or vagina; of the bony, *exostoses*, *tophi*, or *gummata*; of the earthy, *arthritic tophus*, and the *sublingual calculus*. *Pneumatosis* is a species of aëreal tumours; but, when general, is called *emphysema*; *ranula* of salival: *sparganosis*, a painful swelling of the mammæ, and the *milky abscess*, are species of the lacteal tumours. All enlargements of the scrotum or umbilicus, if not organical, are styled by Plenck *herniary*. The *liparocele*, which Morgagni calls *steatocele*, a fatty swelling of the cellular membrane which surrounds the scrotum and testes; and the *lipomphalus*, a fatty hernia of the umbilicus, are of this kind. The organic swellings are *gibbosity of the vertebræ*, *herniæ*, &c.

Other authors divide tumours into watery, fleshy, cystic, flatulent, fungous, humoral, milky, stony, lymphatic, menstrual, metastatic, salival, phagadenic, polypous, bloody, schirrous, wormy, and solid; but such minutenesses must not at present detain us.

Mr. Abernethy, considering tumours as new parts, chiefly confines himself to the sarcomata. His first species is the common vascular or organised sarcoma; the next the *adipose*, followed by the *pancreatic*, the *cystic*, the *mammary*, the *tuberculated*, the *medullary*, and the *carcinomatous*. The encysted tumours conclude.

Our author seems to think that tumours possess an independent life. A clot of blood first effused, suspended against any membrane by a short pedicle, is soon supplied with vessels passing through the pedicle, and these deposit the peculiar substance of the tumour, gradually enlarging it till the coats can no longer resist the distending power. They then crack, the substance of the tumour sloughs off, and, though at first a tendency to cicatrisation is perceivable, it soon becomes a foul ulcer, and the discharge, with the debilitating power of the attending fever, proves fatal.

This short abstract of the pathology is sufficient to explain our author's system, and we shall add a few observations on it, as it militates against what we consider a fundamental principle in physiology, the identity and unchangeableness of the primordial germ. With this view we remarked, that the deviations in bulk were limited. When, however, the continuity of the containing membranes is broken, and blood exudes, the exposed vessels will probably shoot to some distance, though no considerable one. In cases of tumours these vessels may be found in the neck; but very few contain vessels in their substance, which the most dextrous anatomist can inject. Mr. Abernethy, too, injures his own system, by remarking that the coats of the tumour are the thickened cellular texture around, from which they are supplied with vessels, and the whole hypothesis becomes unnecessary; for the substance of the tumour, if gradually deposited at its base, will impel the former depositions, and proportionally distend it at its fundus: we know, from observation, that such tumours really increase from their base. The position, that such tumours are not organised bodies, does not rest wholly on the failure of injections; for the gradual changes of the tumours prove that all the effects are produced from the coats, which are confessedly not new productions. The coats inflame, suppurate, and burst; the contents, no longer confined, melt into a curdly mass, and the patient sinks from debility. Thus the whole system seems to totter; for the containing coat is the condensed cellular texture of the patient, and as there is little evidence of the vessels extending far into the substance of the tumour, these also have apparently no addition. The tumour itself is seemingly secreted from them, or the vessels permeating the coats, by what mechanism we cannot pretend to explain, as the whole mystery of secretion is involved in obscurity. If we consider the remedies, we shall find them applied to the coats to prevent increased action of their vessels: to these also our astringent and discutient applications are directed. The rest of the mass has no life; for when the coat is destroyed, the whole melts as it would do out of the body by the action of heat, air, and moisture.

The first tumour mentioned by Mr. Abernethy is the *common vascular or organised* SARCOMA, a swelling which more particularly merits the name of a new formation, as vessels pass through it, and the veins on its surface are peculiarly large. It seems to consist of coagulable lymph, covered with the red globules; but so far from possessing independent life, when the coat is removed, the contents slough away, in other words dissolve, or portions separate without sloughing. The substance of the tumour itself is insensible, and has consequently no nerves: we cannot, therefore, admit of its being a living matter.

The *adipose sarcoma* is a fatty tumour, yet its contents differ somewhat in appearance from fat; but it acquires its capsule from the cellular membrane; and, if any vessels pass into its substance, they are so small, that, on turning out the tumour, they afford neither resistance nor pour out blood.

The *pancreatic sarcoma* resembles, in its lobated appearance, the pancreas, and is apparently a congeries of lymphatic glands, though sometimes a single one only is affected. We adopt this opinion from these being the only instances of sarcoma where the coats of the gland swell, are affected with lancinating pains, and become foul ulcers; for they scarcely ever are cancerous. It occurs most frequently in the breast nearest the axilla, a part where the lymphatic glands are numerous; and we have seen it in the inguen, when we have distinctly traced the formation of distinct lobes before they coalesced. A malignant parotid, before it breaks, has sometimes assumed this appearance.

A *cystic sarcoma* consists of distinct cysts, formed evidently by an enlargement of the natural cryptæ, and this tumour chiefly occurs in the testis, the ovary, occasionally in other parts. The cysts sometimes contain an unctuous matter of the consistence of cheese. See Baillie's Morbid Anatomy, fasc. viii. pl. 8, fig. 2.

The *mastoid or mammary sarcoma* resembles the mammary gland. It is peculiarly rare, and seems to approach a fungus, by the diseased part extending far below what appears to be the tumour, and becoming the source of a fresh deviation from the healthy state.

The *tuberculated sarcoma* can scarcely be styled a separate tumour; for it consists of enlarged lymphatic glands, which run together in one part, but are found

distinct over the whole body, and, on dissection, on the viscera. The skin breaks; but the glands do not slough: the pain and irritation are so considerable and extensive that the patient soon sinks. We doubt whether this species is properly distinguished from the pancreatic.

The *medullary sarcoma* is chiefly found in the testis, and it is filled with a pulpy substance not unlike that of the brain. It is a destructive complaint, and has been styled the soft cancer, though it differs from the true carcinomatous tumour. The case related by Mr. Abernethy proved fatal by an enlargement of the lymphatic glands of the groin, which were greatly distended and inflamed the skin, terminating in suppuration. Their substance was tender, and it appeared that the substance of the original tumour had been absorbed in a softer state, since in the higher glands, within the abdomen, it had almost the consistence of cream. This tumour is neither, like cancer, hard, disposed to ulcerate, or to spread to contiguous parts; but it is continued along the absorbents with great rapidity, wherever it may first appear; for it is not confined to the testis. The contents of the tumour are sometimes darker, being of a hue between a brown and a blood colour; but the consistence is the same, and the difference seems to arise only from the accidental mixture of some blood. The blood-vessels of the parts diseased are always highly irritated, and the veins peculiarly full, so that some effusion may be expected. Mr. Cooper's observation, quoted by our author, from his paper on obstructions of the thoracic duct, in the Medical Records and Researches, seems to confirm the suggestion.

The last species is the *carcinomatous sarcoma*, in its incipient state a *schirrus*; but of cancer we have already spoken at length. Mr. Abernethy distinguishes this kind by the communication of the irritation to contiguous parts, and by the white bands, described by Dr. Adams, sometimes enlarging into white firm partitions, and giving the idea of an animal nature. It agrees with the mastoid sarcoma in the disease extending below the apparent base of the tumour.

Encysted tumours are distinguished by a regularity of surface and shape, and a pulpy feel. Their contents are different in consistence, sometimes in colour, and from these they have been divided into steatomatous, atheromatous, and meliceritous, to which Mr. Abernethy adds a horny substance (Home in the Philosophical Transactions), and occasionally hairs, particularly in encysted tumours of the ovary. Other authors, but of no very good authority, mention flatus, bones, worms, lice, eggs, and even frogs, in encysted tumours (Ephemerides Naturæ Curiosorum). The vessels of the cyst are apparently minute; for our author acknowledges that, when they burst, they do not suppurate, but become flabby, and are not disposed to heal. Mr. Abernethy gives a short account of some other cysts, containing serum, hydatids, or granular substances, not unlike pearl barley.

We might perhaps rest the confutation of our author's pathology on his own facts. We see indeed new formations, as every exuded fluid capable of concreting may be styled such, but no independent life; no new creation of vessels; but the minute branches derived from the cellular substance which forms the capsula; no nerves.

The mass of matter contained in the cyst does not resemble, in any respect, the fluids of the body in any form, to which heat, stagnation, and absorption, can alone reduce them. Even in the case of scrophulous glands, where we have reason to think that the substance is the gluten of the blood, it is apparently changed by a secretion from the cavities of their cells. In every instance, except the first species, the substance of the tumour is equally different from any of the fluids, or any portion of the more compounded ones. The common, vascular, organised sarcoma seems only an effusion of the gluten, into which vessels undoubtedly pass, but which seems never to attain any considerable size; or at least before it does so, the character is lost. What the cause of this new secretion may be, we are unable to ascertain; but Mr. Abernethy very properly observes, that its nature is not connected with that of the adjoining part; but it is not admissible to conclude that this is a new embryo introduced with its own peculiar powers, till we know why, from arteries nearly contiguous, serum and mucus, the perspirable and sebaceous matter, are evacuated.

To conclude, at once, with the volume before us, we shall mention Mr. Abernethy's very judicious plan of cure. As the irritation of a tumour contributes undoubtedly to its increase, we must endeavour to lessen it by taking away its two principal causes, the blood and the heat: the first is attained by the repeated application of leeches, the second by the application of folded linens, wetted with sedative and refrigerant lotions. If we thus suspend the growth of the tumour, other measures may be afterwards pursued. These are stimulants, such as friction with mercurial ointment, gentle pressure, and electricity; and from the views we have offered in different parts of this work relative to the means of removing obstruction, this part of the author's plan will appear to be by no means at variance with the former. Those means which excite a counter irritation, such as rubefacient plasters, solutions of salts, blisters, and issues, are often of service. Abernethy, Classification of Tumours.

Other applications of rather a sedative than a stimulant nature are, the colchicum (acetum colchici, Storck), hemlock, beladonna (de Meza in the Copenhagen Transactions), dulcamara (Carrere), lead (Aikin and Goulard), and galbanum. If the irritability of the cyst is destroyed, there will be little apprehension of its increase; but we often find, that though by these means we can arrest the progress of the disease, we can seldom remove it. Extirpation, either by a knife or ligature, is, if practicable, the only certain remedy.

See Recueil des Pieces qui ont concouru, &c. de l'Academie de Chirurgerie, vol. i.; Astruc Traitè des Tumeurs; Bang in Act. Societ Med. Havniensis; Sauvages' Theoria Tumorum; Parey's Works; Bell's Surgery; Becket's Chirurgical Tracts.

On encysted tumours, see Morgagni de Sedibus, &c. lxviii. 12; Boyer in Fourcroy Medecine eclairée; Memoires pour le prix de l'Academie, vol. x.; Heister de tumoribus cysticis singularibus apud Halleri Disputationes Chirurgicæ, vol. v.; Richter's Bibliothecæ, vol. vi. and x.

TUNBRIDGE WATER contains steel, with the assistance of the carbonic acid, but no uncommon solid contents. It is chiefly used as a corroborant in the

diseases from relaxation, to which females are usually subject.

TU'NGSTEIN, one of the newly discovered metals, whose oxide is acid. It is usually found in union with calcareous earth; but its affinities are little known, and it has never been used in medicine.

TU'NICA, (*à tuendo corpore*). A SKIN, COAT, or MEMBRANE. See CARYOPHYLLUS RUBER.

TU'NICA FILAMENTO'SA. See DECIDUA.

TU'NICA VAGINA'LIS TE'STIS. See TESTES and ELYTHROIDES.

TU'NSTAS, (from *tungstein*); TUNSTATS; salts formed by the combination of the tungstic acid with different bases.

TURBINA'TA O'SSA, the superior and inferior portions of the ETHMOIDES OS, q. v.

TURBINA'TUM, (from *turbino, to sharpen at the top*). SHAPED LIKE A SUGAR-LOAF. See CEREBRUM.

TU'RBITH; *turpethum* and *turpetum*, the cortical part of the root of a species of convolvulus indicus, *convolvulus turpethum* Lin. Sp. Pl. 221. It is in oblong pieces, of a brown or an ash-colour on the outside, and whitish within. The best is ponderous, not wrinkled, easy to break, discovering to the eye a large quantity of resinous matter. The bark is cathartic, but so unequal in strength that it is now neglected in practice. See Neumann's Chemistry; Lewis's Materia Medica. The name also of some kinds of seseli.

TU'RIO, *quasi terio quia facile teratur*; the first tender shoots of plants which appear in spring, as those of the asparagus and hop. Ray.

TURPE'THUM, and TURPE'TUM, (Indian). See TURBITH.

TURPE'THUM MINERA'LE. MERCURIUS EMETICUS FLAVUS, MERCURIUS VITRIOLATUS. See HYDRARGYRUM.

TURUNDÆ, *offæ trita et manibus subacta*, from their being rolled up; TENTS, usually made of lint, and introduced into deep wounds. They serve to convey medicines to the bottom of a wound; to hinder the external part of a wound from healing before the lower portion; and to clean wounds from what should not be retained in them. They should be very soft, that they may neither obstruct the discharge of matter, nor hinder the healing of the wound in general. Tents are made of sponge, for dilating the orifices of wounds; they are also made of the dried roots of gentian, turneps, comfrey, calamus aromaticus, &c. but these harsher materials are now disused. See Le Cat dans les Memoires pour le prix et Morand Opuscules de Chirurgerie, ii.

TUSSILA'GO, (from *tussis, a cough*); *bechium, calceum equinum, chamæleuce, filius ante patrem, farfara, calliomarcus*, COLT'S-FOOT, *tussilago farfara* Lin. Sp. 1214, is a low plant, producing, early in the spring, single stalks, each of which bears a yellow flosculous flower, followed by several seeds winged with down: the leaves, which succeed the flowers, are short, broad, angular, slightly indented, green above, and hoary underneath. It is perennial, and grows wild in moist grounds. The leaves and flowers are mucilaginous, and bitterish, with little or no smell: infusions of the leaves are sweetened with liquorice or honey for a common drink, when a troublesome cough attends; but if any considerable advantage is expected, a strong decoction should be made, and used freely. The leaves have been held in high estimation, as possessing demulcent and pectoral powers; consequently esteemed efficacious in pulmonary consumptions, coughs, asthmas, and in various catarrhal complaints. Every writer on the Materia Medica might be cited as speaking in its favour, except Dr. Cullen, who suspects that this plant has little virtue, as he has often employed it, but never found it either evidently demulcent or expectorant. In scrofulous cases he has given it with seeming success. Some ounces of the expressed juice of the fresh leaves were taken every day, and seemed to assist the healing of scrofulous sores: even a strong decoction of the dried leaves, employed as Fuller proposes, has seemed to answer the same purpose; but both have occasionally failed. See Cullen and Lewis's Materia Medica.

TUSSILA'GO MA'JOR. See PETASITES.

TU'SSIS, from its noise, or from the Hebrew *gnatishah*); *bex*, A COUGH, is a violent expulsion of some matter from the bronchiæ of the lungs, by means of a convulsive and a violent expiration. See CATARRHUS.

The seat of every cough is generally in the breast, but the remote cause is variously situated. The principal parts diseased are the aspera arteria, and the bronchiæ; these are irritated by inflammation, obstruction, or foreign bodies introduced; but the morbid irritation may be in an adjacent part, as the diaphragm, the stomach, the œsophagus, the pleura, the external surface of the lungs, &c. Thus coughs attend pleurisies, wounds about the neck, inflammation of the liver, &c.; acrid matter in the stomach, or in the duodenum. Spasmodic disorders are often attended with a cough, the lungs suffering either by consent from the source of the spasm, or becoming in their turn the seat of that which produced the spasm in some distant part. The most frequent cause, however, is suppressed perspiration.

Coughs are generally at first dry; but at last expectoration comes on, and a hectic fever is the consequence (see PHTHISIS); but it sometimes happens that a cough continues during a long life without inconvenience, and though it does not lead to phthisis, induces at last asthma or hydrothorax.

So far as coughs are connected with the state of the lungs, they have been already considered under the articles CATARRHUS and PHTHISIS, so that we shall here chiefly speak of the symptomatic coughs. These frequently arise from the stomach, and are dyspeptic symptoms, often from diseases in the liver; and if the facts recorded by the American practitioners be true, that salivation has even cured hectics, it must have been those which arise from schirrus in that viscus. This circumstance must be constantly kept in view, when we consider the coughs of those who have long resided in the East or West Indies, particularly the former; for they very generally proceed from the liver, and we have much reason to suspect this organ to be a more frequent source of coughs even in this climate than has been suspected. Those which attend cancers are, according to Mr. Abernethy, more probably from the affection of the liver, which usually takes place in the latter stages, than from the irritation communicated from the diseased part.

Symptomatic coughs are also excited and kept up by foreign bodies accidentally formed, or introduced into the trachea. Calculi, we have said, are formed in the bronchial glands (Morgagni de Sedibus, xv. 21, 22); beans, nails, the splinters of a fractured rib, and a little bone (Morgagni, xxii. 24), have produced continued coughs: Hildanus, as well as Tulpius, describe coughs as arising from fragments of tents, introduced into wounds of the thorax. Worms are mentioned as the causes of irritation by Bartholine, sometimes hydatids (Medical Observations and Inquiries, vi. 15), and polypous masses (Tulpius, iv. 9).

We know that the use of the ear-picker will bring on a cough; and we shall not, therefore, be surprised to find it occasionally produced by acrid cerumen, by dentition, or swollen tonsils; but it is singular to find cough excited by affections in the head, and water in the ventricles of the brain. Morgagni, xix. 54; Bonetus, lib. ii. sect. iii. 33.

Some coughs are styled purely nervous, and such are described with great fidelity and judgment by Dr. Whytt, in his treatise on nervous diseases. In this, as in other convulsions, increased irritability, with a less evident stimulus, or sometimes with a stimulus which escapes observation, induces a violent degree of the complaint. It is then constant and almost unconquerable. This is the kind of cough which attends dyspeptic, chlorotic, and hysteric habits; which has been described by authors as owing to metastasis of fevers (Stoll Ratio Medendi, i. 282); repelled eruptions or gout, and the irritability left after peripneumony. Merten's Observationes Medicæ, ii. 1, 3.

The remedies of the symptomatic coughs are those of their causes, which, when there is no real disease of the thorax, should be anxiously investigated. The nervous coughs alone require attention. In what Stoll styles the metastatic coughs, he advises the arnica, and in the gouty ones, though attended with copious expectoration, we have given the bark with advantage: Home (Facts and Experiments) mentions the success of the same remedy in febrile coughs. The ammoniated copper is mentioned by Bell in the Medical Commentaries, and warm bathing, with occasional venæsection, by Whytt. The fetids have sometimes succeeded, and mercury in more than one instance. We remember a case of incessant and unconquerable cough of this kind, in which, from recollecting the good effects ascribed to mercury, we gave it in small doses. These were, for a time, ineffectual; but a salivation suddenly came on, and from that moment the cough rapidly declined, and soon ceased. It returned after about two years, and yielded to the same remedy. Of the narcotics, the hyoscyamus, the hemlock, and the polygala amara, have been recommended: of the diaphoretics, ipecacuanha in small doses, and the mezereum.

TU'SSIS CATARRHA'LIS. See a CATARRH from cold, in CATARRHUS.

TU'SSIS CONVULSI'VA, RHEUMA'TICA, et FERINA. See PERTUSSIS.

TU'SSIS EPIDE'MICA. See CATARRHUS EPIDEMICUS and INFLUENZA.

TUTENAG. A name for zinc, also for a white compound metal, called Chinese copper. See ZINCUM.

TUTIA, (Persian). TUTTY, *pompholyx cadmia factitia, et fornacum, alfusa, capnitis*, an impure ore of zinc, found in Persia, formed in cylindrical moulds into tubulous pieces, and baked to a moderate hardness.

It is generally brownish, full of small protuberances on the outside, smooth and yellowish within, sometimes whitish, or blueish from metallic particles. It is frequently found collected in the chimneys after smelting other ores.

When tutty is finely levigated, it is sedative and astringent, used in collyriums to repel slight inflammation in the eyes, and in healing wounds.

TUTSAN. See ANDROSÆMUM.

TYLO'SIS, (from τυλος, *callous*). See TRACHOMA.

TYLLO'MA. A CORN. See CLAVUS.

TY'MPANI MEMBRA'NA. See AUDITUS.

TYMPANI'TES, (from τυμπανον, *a drum*). *Meteorismus*, and FLATULENT DROPSY. Dr. Cullen defines it a tense, elastic, sonorous intumescence of the abdomen; the habit costive, with an emaciation of the other parts. The species are; *t. intestinalis:* a tumour, often irregular, of the abdomen, and frequent rejection of air, alleviating the tension and pain; and *t. abdominalis:* the sound more evident, the tumour more regular, the emission of wind more rare, and less alleviating. In the former the wind is confined to the intestinal canal; in the latter to the cavity of the peritonæum. Authors have not, in general, distinguished these two kinds in their description, and we wander in great obscurity when we endeavour to trace the causes or the method of cure adapted to the second species.

The *t. intestinalis* need not detain us; for every cause of dyspepsia, indeed every cause of weakness, produces flatulence. (See APEPSIA, DIGESTIO, and HYSTERIA.) The remedies are already noticed at some length, and we need only repeat, on the present occasion, that clysters of asafœtida, with warm carminative seeds, often give immediate relief.

The *t. abdominalis* certainly attends the last stages of enteritis and hernia; but it then arises from the evolution of air, in consequence of putrefaction. Authors have spoken of a secretion of air, which we dare not deny, since it apparently takes place in the air-bladders of fish. We see, however, no analogous secretion in the human body. One source of air may be suspected, viz. the decomposition of the watery fluids; but we know no probable means of effecting this change, except by electricity or galvanism, which are never experienced to so great an extent without proving fatal. Air has been sometimes found mixed with blood in the circulating system; but when thrown into the arteries it is soon fatal, so it seems to have been separated in articulo mortis.

We might accumulate a respectable list of authorities in support of the opinion that the abdominal tympanites has no existence; but this would be carrying scepticism too far, especially as we have respectable authority for occurrence (Bell on Tumours, &c.; Morgagni de Sedibus, xxxviii. 24); and its being relieved by an abscess of the umbilicus (Guisard Pratique de Chirurgerie, i. 134; Storck Annus Medicus, ii. 123). Trnka proposes exhausting the air by an air-pump applied to the intestines, perhaps to the rectum; for we have not been able to peruse this work. See Bell on Ulcers; Collectiones Medicæ Havniensis, ii. 73; Dusseau Journal de Medecine, 1779; Lieutaud Historia Anatomico Medica, i. 432.

TY'MPANUM, (τυμπανον). See AUDITUS.

TY'PHA AROMA'TICA, (from τιφος, *a lake*, because it grows in marshy places). See CALAMUS AROMATICUS.

TYPHO'DES, (from τυφω, *to inflame*); *helodes, lactica*, a fever attended with colliquative sweats, while the tongue continues dry and hard.

TYPHOMA'NIA, TYPHO'NIA, (from τυφω, *to burn*, and μανια, *delirium*.) "A disorder complicated of a phrensy and a lethargy, in which the patient is delirious, and labours under a sleepy coma." (Galeni Exegesis.) It may be called a lethargic madness, or a delirious lethargy, according to Gorræus.

Dr. Cullen considers it as a symptomatic apoplexy, occurring in intermittent and continued fevers, sometimes arising from worms. The species consequently are, *febricosa*; *continua*; *agrypnocoma*; *verminosa*. See Synopsis Nosologiæ Methodicæ, vol. ii. p. 184, 191, 192.

TY'PHUS, (τυφος, from τυφω, *to inflame*). The first species of this complaint, according to Hippocrates, is a legitimate continual fever, which reduces the strength, attended with pains in the belly, heat in the eyes, which hinders the patient from looking steadily on any object. The pain prevents him from answering any questions, though he begins to speak, and fix his eyes on any object, when at the point of death. The *second* is a tertian or a quartan, succeeded by pain in the head; saliva and worms are copiously discharged by the mouth; the eyes suffer great pain; the countenance and feet are pale, and the whole body is sometimes affected with soft swellings; the breast and back are occasionally painful; the belly rumbles; the eyes are fierce; the saliva adheres to the throat, and renders the voice hoarse. In the *third* species there are intense pains in the joints and sometimes all over the body: the blood is hot, and stagnates in the limbs; some bile retained in the joints becomes indurated, and produces lameness. In the *fourth* there is violent tension, elevation, and heat of the belly, succeeded by a diarrhœa, which sometimes terminates in a dropsy, and is sometimes attended with fever. In the *fifth* there is a paleness and a sort of transparency of the whole body, as if it was a bladder full of water, though without any inflation; on the contrary, the body is weak and extenuated. The patient winks his eyes, and feels the bed-clothes as if he wanted to catch something on them, &c.

These are all symptoms of violent fevers at different periods, and the passage would have scarcely merited selection, but to show with how little real discrimination diseases were sometimes described even by those who have attained the highest credit as observers. The term has now become fashionable, and it may require a little discussion.

We have contended that fever is a simple disease, differing only as more or less perfectly intermitting and exacerbating. Those in which the remissions and exacerbations are indistinct, authors have styled *continued fevers*. In all the various appearances of these in the different epidemics, we have not yet been able to discover any other difference than arises from the degree and duration of inflammatory diathesis, the early appearance or degree of debility, except those accidental symptoms which, arising from habit, idiosyncracy, and climate, will give a peculiar hue to every complaint.

Dr. Cullen has, therefore, with great propriety, included the greater number of continued fevers under the title *typhus*, distinguishing the milder typhus, the common nervous fever, from the severer asthenic or putrid fever. He has introduced, with propriety, the inflammatory fever, which, though generally symptomatic, yet often appears when no original disease can be traced. The synochus also has been admitted as the common type of epidemics in this climate. All these diseases have been considered under their appropriate heads; for ready reference is the great and most important object in a dictionary. See SYNOCHA, SYNOCHUS NERVOSA, and PUTRIDA FEBRIS.

TYRO'SIS, (from τυροω, *to coagulate*). A disorder in the stomach proceeding from milk coagulated in it.

U.

U'LA, (ουλας). See GINGIVÆ.

U'LCERA SERPE'NTIA O'RIS. See APHTHÆ.

U'LCUS, (ελκος, *an ulcer*). *Cambuca, cambuca membrata, helcosis, exulceratio,* a solution of continuity in a soft part, with loss of substance, and usually a discharge, often the consequence of wounds. A loss of substance in the bones, from erosion, is called a CARIES; though, when an abscess is opened for the discharge of its contents, it is usually styled an *ulcer*. External ulcers are discerned by the eye, but internal ones by their discharges, which are often mixed with the excretions. The degree of danger will be estimated by the quality of the ulcer, the part affected, and the strength of the patient.

The causes of ulcers are wounds and inflammations. A solution of continuity by a wound, if complicated with a diseased constitution, produces a compound ulcer; but in firm habits often heals without inconvenience. Incised wounds, without loss of substance, seldom produce ulcers, but heal by the first intention; in other words, the divided edges unite, and no suppuration follows. Inflammation is the most general and frequent cause of a solution of continuity from an excess of action, which changes the state of the arteries, so as to render them capable of secreting purulent matter, for true pus is not secreted without inflammatory action. The inflammation may be from a general or a local cause, and this distinction should be kept in view in the treatment of ulcers. There is little doubt, for instance, but that Dr. Rowley's medicine, nitre joined with camphor, will cure the ulcer of an active young man, who lives freely, and is subject to inflammatory complaints, which exacerbate the inflammation; but the same remedy will be injurious to the ulcer of an emaciated old woman, or to that of an exhausted arthritic. General inflammation is also a cause of a critical, or more properly a metastatical, abscess, subsequent to fever, and this will also require particular attention, according to the state or circumstances of the fever, which cannot be the object of consideration at present. See ABSCESSUS.

Local causes of inflammation are numerous. Of these the most frequent, and the most unsuspected, is debility, whose action will not appear to be easy of explanation. Yet when it is recollected that from debility the balance of the circulation is disturbed, that the foundation of inflammation rests on accumulation, in consequence of atony, the influence of this cause will be obvious. We thus find ulcers most common in cachectic persons, who are constantly on their feet; and such ulcers are the most difficult of cure. To a certain extent the action of the vessels may be restored, but beyond they will seldom proceed.

The local causes of a different kind are topical stimuli. Thus a carious bone produces an ulcer, the vena medinensis shows itself in the skin by a slight ulceration, and needles, received at a distant part, work, in common language, their way through the skin, exciting inflammation. The stories of worms in ulcers may perhaps have some foundation, but they are more probably the effect of negligence than the cause of the complaint. Foreign bodies, introduced from without, are indeed often causes, and the common sources of the factitious ulcers, formed to impose on the humane and charitable. Bodies of various kinds have been the cause of ulcers, and produced them after remaining with little inconvenience for many years; but the only substance, formed in the body, which can occasion them are calculi, chiefly arthritic ones.

It has been usual to blame an acrimonious state of the blood as the cause of these complaints; but, except in scorbutic ulcers, there is little evidence of its existence or of its producing this disease; and in scorbutic ones the lax texture of the solids is a more immediate cause than acrimony. This is of more consequence, as it has led to a variety of medicines to correct that acrimony which, however, act in a different way. Mercurials and antimonials give tone to the whole system, and determine to the surface; a circumstance so essential to the general health. The sarsa and mezereon are similar to mercurials; and both are sometimes successfully superseded by the nitrous acid.

One undisputed cause of ulcers from this source is the poison of copper, which sometimes erodes the hands of the workmen, and, as has been alleged, gives a greenish hue to the purulent matter; and perhaps the venom of a wasp, which, Hildanus observes, produced an incurable ulcer on the cheek. We must return, however, to these subjects after we have examined the particular species of ulcers.

The symptoms which attend and retard the healing

of ulcers are inflammation, pain, a flow of morbid humours, a spongy flesh, &c. The callous tumid lips of ulcers, or ulcers which are difficult to heal, are termed *ochthodes*.

Mr. Bell divides ulcers into two classes, viz. those which are merely local, not depending on any disorder of the system; and those which are the consequence of, or connected with, any disorder of the constitution.

The species belonging to the first class are, the simple purulent ulcer; the simple vitiated ulcer; the fungous; the sinuous; the callous; the carious; the cancerous; and the cutaneous ulcer.

The species belonging to the second class are, the venereal; the scorbutic; and the scrofulous ulcer; to which we may add the arthritic.

Ulcers of long continuance, or which have succeeded in carrying off or preventing any disorder to which the constitution may have been liable, are not, we are told, to be hastily cured; but in a situation highly troublesome a vicarious discharge, by means of a pea issue, or of a cord (see FONTANELLA and SETACEUM), may be gradually produced, and the ulcer slowly healed.

If an ulcer is the consequence of a critical abscess, the drain may be allowed to continue for a short period, and the sore may then be safely healed; but if apoplectic or paralytic attacks have yielded to the formation of an abscess, such an ulcer should not be wholly dried. In such cases, nature will be contented with a slight discharge, and it is the surgeon's object to relieve the patient with as little inconvenience as possible. We have seen relief obtained by an ulcer not a quarter of an inch in diameter: if it spread, no advantage was obtained; but, if contracted farther, apoplexy was the consequence, relieved only by applying a blister to the former cicatrix. We shall find a similar inconvenience from healing old arthritic drains, and asthmatic persons have experienced considerable exacerbation of their complaints when former drains have been checked.

The long continuance of a drain has been considered as an argument against stopping it, and every physician who has been accustomed to observe the effects of habit must have imbibed some prejudices on the subject. Whether facts combating with prejudice or particular instances have occasioned a contrariety of sentiment we cannot determine; but there is considerable weight of evidence on each side. The balance in point of authority undoubtedly rests on the danger of healing old ulcers; but the gradual improvements of practice have taught us, in a great degree, to disregard it. Were the inconveniences very striking, the former opinion would not have been, for a moment, shaken. We would willingly, if possible, draw the line, and point out what ulcers may or may not be healed with safety; but beyond the facts already adduced we find no firm footing for our steps.

Except the callous and the sinuous ulcer, and the ulcer with a caries in the bone, the cure of all the other kinds depends, according to Mr. Sharpe, chiefly on that of the morbid habit of the body. If the body is untainted, the healing of an ulcer is the work of nature, and topical applications only maintain the due degree of tone which enable her to carry on this operation. While an inflammatory hardness exists, an emollient poultice laid over the dressings will relieve, after which dry lint generally suffices, or at the most it may be moistened in some mild astringent, to give a tone to the new flesh. When a too great laxity, or a sponginess, is observed in ulcers, gently stimulating and bracing applications are more useful.

The three kinds of ulcers which Mr. Sharpe mentions as more particularly depending on external management, so frequently arise from a morbid habit of body, that this must be first corrected. When removed, emollients to the callus on the edge of the ulcer may be applied; or in many instances unguentum resinæ flavæ, with a little finely-powdered precipitate, will succeed. See Heister's Surgery; Sharpe's Operations, in the introduction.

The *simple purulent* ulcer is a local affection, with pain and inflammation, in a very considerable degree, while the discharge afforded is always of a mild purulent nature, and of a proper consistence; and the granulations which arise in it are of a firm, fresh, red, healthy appearance. This ulcer is the most simple that can occur, and to its state all others must be reduced before a permanent cure can be expected. As there is very little inflammation, and no preternatural swelling supposed to take place, but merely a vacuity, either from a real loss of substance, or from a retraction of parts simply divided, if the discharge be of a mild purulent nature, no peculiar treatment except to guard against the air and external injuries is necessary. Pledgets of lint spread thinly with the ung. cereum Ph. Edin., Pott's soap cerate, or the unguentum e lapide calaminari, may be applied, every twelve or twenty-four hours, to the surface of the sore. If inflammation attends the ulcer, warm fomentations or warm emollient cataplasms may be necessary while it continues. If fungous flesh appear to rise above the surface as soon as the inflammatory state is over, slight compression, by means of a roller, may be applied, and continued during the remainder of the cure. The roller should be applied so as not only to act as a gentle pressure upon the parts immediately surrounding the ulcer, but likewise to support the skin, and other teguments, so as to prevent their retraction, which in large ulcers often happens. *The formation of a cicatrix* is frequently effected by nature alone; but when every deficiency appears to be supplied, the cure is sometimes still tedious, the surface of the sore remaining raw, and discharging considerable quantities of thin matter. In such cases, more astringent applications must be substituted, and occasionally more stimulating ones, as the precipitate; or more drying ones, as the bole powder, either with or without opium according to the irritability of the sore. If the cicatrisation is prevented by spongy granulations rising above the skin, they may be checked by dry lint, a gentle compress, or in obstinate cases a slight application of the vitriolum Romanum may be necessary to check the luxuriancy. It is very rare that a caustic is required. Bell on Ulcers, edit. 3. p. 161, &c. White's Surgery, p. 29.

The *simple vitiated ulcer* differs from the former, chiefly in the appearance and nature of the discharge. The most common appearances of such deviations are, sanies, ichor, or sordes. From the acrimony of these fluids, the parts, instead of filling up with firm granulations, waste, and instead of a reddish hue, have either a dark brown, or a blackish, rough, sloughy appearance. The pain in all is greater in proportion to the acrimony

of the matter. As the simple purulent ulcer happens most frequently in the fleshy parts, so the simple vitiated ulcer is most common near the tendons or aponeurotic expansions of the muscles, as these parts seldom afford a salutary pus. Accidental inflammation of the ulcer, or a general ill habit of body, may also occasion this species of ulcer in every part. The principal endeavour in such cases must be to ease pain, and abate irritation, by warm emollient fomentations and cataplasms, continued until all appearances of inflammatory tendency are removed. The part may be fomented three or four times a day, for half an hour each time, with an emollient decoction; and a pledget spread with the unguentum cereum (Ph. Ed.) applied. Opiates inwardly will be necessary to remove irritation. If the habit be too full and inflammatory, it must be lowered; if too low, supported; and in the latter case these ulcers most often occur. A free but prudent use of the cortex Peruvianus is sometimes useful, but in plethoric habits and in inflammatory constitutions this medicine must be avoided. The previous removal of any general disease is indispensably necessary. Sometimes more difficulty attends the cicatrisation of these ulcers, when long continued, and an issue, inserted in a proper situation, will be generally necessary to finish the cure. Nitre has been highly commended in this species of ulcer. Bell on Ulcers, edit. 3. p. 216, &c.

The fungous or spongy ulcer is distinguished by preternatural risings of parts, more soft and spongy than sound, healthy, granulations; but which sometimes by continuance acquire an extraordinary hardness, and are generally painful. In young and healthy habits the new granulations often advance too quick, and rise above the surface of the neighbouring parts; and in others, for want of care, wounds and ulcers are permitted to fill up without being firm at the bottom, whence the fungous ulcer generally arises. If the fungous appearance is owing to luxuriance of health, its surface may be slightly touched with the argentum nitratum, once in two or three days; and a pledget of dry lint immediately applied. If the basis of the fungus is narrow, it may be removed by a ligature. When the fungous appearance is owing to the insecure basis, it rises quickly, and is not so firm as the former kind, and having given free vent to the impacted matter, we must attend to the progress of healing from the bottom. This fungous flesh is soft, and wastes without requiring escharotics. Bell on Ulcers, edit. 3. p. 232.

The SINOUS ULCER. See FISTULA.

The CALLOUS or VARICOUS ULCER, supposed to be nourished by the fluid of the swelled veins, apparently opening into them. An ulcer is said to be callous, when its edges, instead of contracting, and diminishing the size of the sore, acquire a preternatural thickness, and are ragged, often rising considerably above the level of the neighbouring parts: the discharge afforded by them is commonly a thin vitiated matter; and these ulcers are most commonly varicous, especially when in the lower extremities, owing chiefly to the stricture occasioned by the callosities on the different veins. Escharotics have generally been used to destroy callosity on the edges of ulcers; but as they tend to increase the disease by continuing the inflammation, emollients, with the assistance of warmth, are substituted in their stead. By the use of a warm emollient poultice, and a reclined posture, the most unpromising ulcers have been healed. Yet sometimes the callosities are so hard as to require the knife or the caustic; and if the last is preferred, the argentum nitratum is the best. With this the hardened parts may be touched, every two or three days, and when they are duly wasted, the ulcer will probably be reduced to the simple purulent one. To strengthen and restore the veins that were rendered varicous round the callosities, a tight stocking or a spiral bandage will be useful, but not before their having been continued for a long time. Callosity frequently attends venereal and cancerous ulcers; but in these cases the morbid state of the constitution must be corrected. Bell on Ulcers, edit. 3. p. 254.

The CANCEROUS ULCER. See CANCER.

The CARIOUS ULCER, that which is connected with a local affection of a bone. Bruises, lacerations, and injuries of the periosteum, sometimes terminate in a caries; and in about four, or five days, the bone begins to lose the natural healthy appearance, turns of a pale white, with a slight tinge of a yellow; and whenever the latter begins to appear, there will be little doubt of the consequence. Sometimes it will continue in this state for many days, and by degrees acquire a more deep sebaceous appearance, remaining in this state for a time, proportioned to the violence of the cause, and afterwards going through the subsequent stages, until it hath acquired a deep blackness. The discharge from such ulcers is never of the consistence of good pus; but generally thinner, and from the first appearance of caries acquires a most disagreeable fœtor, which increases as the disorder advances, and at last it appears blackish, as well as the bone underneath. As the several degrees of blackness go on, small holes are formed in the diseased parts by the acrimony of the discharge, and by degrees increase considerably, until even the most solid bones acquire a spongy appearance. In this situation, the mortified portion is generally loose; and, on pressure, an oily matter, with a most disagreeable fœtor, is forced out, which gives the whole discharge such a peculiar smell as to prevent its being again mistaken. In these ulcers also the fleshy parts are soft and more flabby than in their natural state, of a darker brown and a glassy appearance, the granulations sprout up in irregular clusters, advance too quickly and too far, if not prevented, which is always necessary until the diseased part of the bone is either cast off or separated by art. When neglected, these soft productions in carious ulcers frequently increase so as to form very large and troublesome excrescences, though even a portion of the bone only is carious. When the whole bone is affected, the progress and symptoms are more rapid, and the whole must be removed; but in more partial affections, the diseased portion alone requires to be separated. When a probe can be introduced so far as the bone, the roughness of its surface will discover the caries; but though the bone cannot be reached by the probe, the appearances of the ulcer, and the fœtor of the discharge, will rarely fail to discover it; and before this ulcer can be cured, the carious parts must be removed. To separate the carious parts, the surgeon must make a number of small holes by a pin or perforator over the surface of the diseased

bone, to such a depth as to give the patient a little pain only, and repeat this operation in different parts, every third or fourth day. In this way the diseased portion of the bone soon loses the cohesion of its own parts, and a gentle inflammation is excited so as to produce free suppuration. If the caries goes deeper than the second lamella of the bone, a head of a small trepan may be used, and carried so deep as to give some pain. We thus convert a large caries into many smaller diseased parts. and their separation from the sound bone is more easily effected. When any of the parts loosen at the edges, their final separation may be hastened, by daily insinuating below them the end of a spatula, so as to raise their edges a very little upwards. While any of the carious bone remains, the fœtor of the matter demands attention; and it is moderated by a strong decoction of bark and walnut-tree leaves, or by a solution of camphor in weak brandy. The carious part of the bone should be dressed with soft lint soaked in either of these, while the rest of the sore is treated as a simple purulent ulcer. Lime-water powerfully corrects the putrid discharge from carious ulcers, and the exfoliation of bones is much promoted by bathing with it. The bark is almost the only medicine which in cases of caries should be given internally; but in some instances the soft parts which cover the carious bone are so swelled and painful, that opiates are necessary. After the removal of the carious bone, the remaining sore must be treated in the same manner as directed for that species of ulcer to which, at the time, it appears to belong. See CARIES; Bell on Ulcers, edit. 3. p. 262.

The CUTANEOUS ULCER. See HERPES and TINEA.

There are other kinds of cutaneous ulcer more nearly allied to our present subject, and which may be comprehended under this head. The first of these which we shall mention are those ulcerations of the epithelium from mercury. These, like all other cutaneous ulcers, are highly irritable, and are distinguished from syphilitic ulcers by their bright red colour, by their not containing sloughs, and by their sides imperceptibly uniting with the teguments. If these appearances do not distinguish them, the quantity of mercury previously used will show that they are not syphilitic, as well as their spreading while this mineral is employed. In such cases soft mucilaginous and slightly astringent washes, omitting the mercury, will soon relieve. If danger is apprehended from the original disease it may be suspended for a time, by the decoction of mezereon, with the nitric acid.

There are some slight cutaneous sores attended with great irritability and excruciating pain; but, as the same irritability attends also deeper ones, we had designed to have placed them in a separate class, would authority have supported us. The pain usually arises from some subcutaneous nerve, and is felt in the neighbourhood as much as in the ulcerated part. Moderately warm fomentations, frequently repeated, and sprinkling the ulcer with fine powder of myrrh, will often relieve the patient; but occasionally the bole powder with opium of the former pharmacopœiæ, is more effectual. When the discharge from such ulcers is not thick or laudable, even a small proportion of the precipitate may be borne. If simple ointment be slightly coloured by precipitate, so as to give the palest red hue, we have often known it remove pain instantaneously.

The VENEREAL ULCER. Hunter on the Venereal Disease; Swediaur, 120; Plenciz Acta et Observationes Medicæ 14. See LUES VENEREA.

The SCORBUTIC ULCER. See SCORBUTUS.

The SCROPHULOUS ULCER. See SCROFULA.

ARTHRITIC ULCER demands particular attention. It is a highly irritable sore, produced by chalk-stones, with difficulty healed, and generally diminishing fits of gout during its discharge. All ulcers in gouty habits must be healed with the utmost caution; for they are often salutary, and the suppression of the discharge is generally injurious.

An ULCER in the BLADDER is often suspected from a slimy discharge, of a yellowish colour, proceeding from weakness. When an ulcer is really formed in this organ, there is a discharge of fetid matter, or blood, and occasionally scales, or a membranous pellicle on the urine. A continual dysuria, and a pain in the urinary passages also attends. For the distinction and cure, see ULCER IN THE KIDNEYS.

An ULCER in the KIDNEYS. Though the kidneys are often wasted, they are rarely found ulcerated: and, according to Cheselden, an ulcerated bladder is very uncommon in the bodies obtained for dissection. When the bladder is affected, the pain is felt in the pubes and the bottom of the belly; but when the kidneys suffer, the pain is in the back part of the loins. In the former case, there is a difficulty if not a suppression of urine; but in the latter the urine passes freely. From the bladder there are voided membranous scales, from the kidneys fibrous pieces of flesh; and a violent pain is felt in the bladder when ulcerated: the pain from an affection of the kidneys is dull and inconsiderable.

The urine looks like milk when first made from an ulcerated kidney, though not fetid; but, on standing, the white matter falls: when the pain is considerable in the kidneys, which usually arises from calculi, it occasions a nausea, and sometimes a vomiting. When an ulcer is suspected in the kidneys, the patient should abstain from acrid, sour, and salt diet: he should live on mild mucilaginous aliments, such as the broths of young animals, whey, milk, butter-milk, &c. Violent exercise must be avoided, chalybeate waters drank, and solutions of the mildest balsams occasionally taken.

To connect the discordant ideas of authors respecting the cure of ulcers is a difficult, and would be, we fear, an useless task. Yet it will afford some gratification to find them concurring in the outlines with the principles laid down.

By far the larger proportion of applications to ulcers are stimulants and tonics, though we often find the narcotic bitters and sedatives nearly allied to tonics employed. The lead which is of this kind is connected with the more refrigerant applications, which are often used both externally and internally, and the carbonic acid air, in all its varied forms, certainly belongs to this class.

Stimulants and tonics are always indicated when the inflammation is insufficient, the discharge thin or sanious, the edges of the ulcer pale and languid. Their kinds and forms are innumerable, and we find in our list

of the stimulants, mercurials, internally, with the nitrated quicksilver externally, nitrated silver, cantharides, flammula jovis, vinous and spirituous embrocations, scarification, the actual cautery, sedum acre, the leaves of the persicaria, pisselæum, petroleum, vegetable balsams, lime-water, electricity, and heat, applied by hot coals, hot water, or even the rays of the sun, collected in the focus of a burning glass. Histoire de la Societe Royale de Medecine, Ann. 1776: Aitken in the Medical Commentaries.

The tonic applications are the bark, zinc, copper, iron, arsenic, the arnica, alum, rhubarb, willow and oak-bark, and the amara calida, with which are connected the narcotic bitters, as the nux juglans and nux vomica, phellandrium, aquaticum, and myrrh, but these are apparently better adapted to the painful irritable sores. The use of the more direct sedatives and narcotics has not been limited, but camphor, opium, hemlock, foxglove, belladonna, tobacco, and similar vegetables have been employed. Lead has certainly not been used with any discriminated views, and as a tonic as well as a sedative may be generally applicable. We fear, however, that it is too generally employed, and a work of no inconsiderable utility may be written on the abuse of lead.

The refrigerants are carbonic acid air in all its variety of forms, the vegetable acids, and fruits, nitre with camphor internally, cold applications, which might perhaps with more propriety be classed among the tonics. A miscellaneous list still remains of little real utility, but we must mention separately the gastric juice, saliva, carrots, and the charcoal. The first and last are said to be antiseptics; and may probably correct fœtor, as well as the carrot poultice.

These remedies are chiefly external applications; and internally mercury, either alone or joined with antimony, bark, and the sulphat of iron, are the principal remedies, assisted by the sudorific decoctions, which act in the manner already explained. When the ulcer is foul, the edges thick, and the whole circulation languid, the most active stimulants are required; and, instead of the cautious use of the mercurius nitratus ruber, which we mentioned under the irritable sore, the whole ulcer must be often filled with it. This may appear a severe remedy, and we start with horror at the directions of the older surgeons, who recommended hot turpentine, &c.; but when pain, as often happens, arises from an inefficient force to propel the fluids, whatever assists their action gives a pleasing, salutary warmth. It is only necessary, in such cases, to proportion the degree of stimulus to the state of irritability. Thus calomel to a languid syphilitic sore will give ease, and a patient can walk, even when a large proportion of the red precipitate has been applied to an ulcer, who could with difficulty rest on his leg before.

It will now, we think, be sufficiently obvious, that the frequency of ulcers in the lower extremities, and their obstinacy in resisting the best concerted plans, most commonly depends on debility of the vessels. If we look at the other directions for their cure, we shall find that they coincide in the same intention. Rest has been usually enjoined; and it was urged more strongly as it facilitated the action of mercury internally, which was always considered as the chief source of relief. Rest was undoubtedly proper in inflammatory and irritable sores; and in the other kinds it will be obvious that it assisted the circulation in the lower extremities, and obviated one cause of debility, turgescence. The result, however, was, that though the ulcer healed, on returning to an active life it again recurred, and the relapse was rendered more certain by the extent to which the mercurial course was carried, and the debility which was the necessary consequence. To cure ulcered legs while the patient was permitted to walk, was apparently a solecism; and, if we recollect rightly, Mr. Underwood was the first English author who suggested this plan. It was a very simple one, viz. the free application of escharotics, even the argentum nitratum, and a firm equable support by a steady bandage. There is no doubt of its being frequently successful, and no stronger proof can be afforded of the principles laid down in this article. We have not the means of readily ascertaining the priority of different authors' claims to this discovery; but we find it recommended by Mr. Else in the Medical Observations and Inquiries, iv. 29; Richter's Bibliotheca Chirurgica, viii.; Theden Neue Bemerkunden, i. 18. The laced stocking was first employed, and is always useful; but to succeed more perfectly a roller must be applied to the foot, and the spiral turns on the leg receive a firm basis by first repeatedly crossing it round the heel and over the instep. In passing up the ancle, and small of the leg where the ulcer is usually situated, the folds must be firmly fixed, and full one-third of the former turn covered by the succeeding one. The tightness must be regulated by the tenderness; but it should generally be so considerable as to be felt at first slightly inconvenient. When the surgeon arrives at the wound, he should press the edges as much as possible together, and endeavour to retain them in this state by the roller. Nature is thus saved considerable exertions in pushing forward the new granulations. We have been thus full on the subject, because it appears of the utmost importance; and we have little doubt in saying, that the most dextrous bandager will be the most successful practitioner in this branch. If any irritable pimples surround the ulcer, these must be removed previous to the application of the bandage by proper exsiccatives and astringents, or the union of the lead ointment, with the zinc, or a mild mercurial.

Mr. Baynton's method does not differ in principle from that just described. He advises us to bring the edges of old ulcers gradually together by strips of sticking plaster. This method not only diminished the discharge, but corrected the fœtor, and brought the callous edges to a level with the middle of the sore. The strip of plaster must be two inches in breadth, fixed on the side of the leg opposite to the sore, and each extremity drawn over it with as much firmness as the patient can easily bear. We thus obtain an equable pressure, bring the edges of the wound nearer, and by the tension give a support to the new vessels, as well as prevent accumulations, in the contiguous ones. By the pressure the callous edges are destroyed. Different slips are afterwards applied above and below, covering the edge of the former, and giving it support. Mr. Baynton advises the leg to be covered at least one inch below, and two above, the diseased part. We have found it convenient to reverse the direction. To secure the success of this method the leg should be previously

shaved, that the plasters may be removed with little irritation, as the discharges, which are at first considerable, may not be retained and become injurious from their acrimony. From this cause it is sometimes necessary to remove them twice in 24 hours; but, in general, one dressing in that period is necessary. The whole foot and leg are then covered with the bandage already described. If the parts are much inflamed, refrigerant applications, with rest, may precede this plan, and the part affected may be bathed around with cold water during its employment.

The great advantage of Mr. Baynton's plan is, that by the strip of plaster the edges of the sore are more accurately approximated and retained in their situation; the disadvantages, that the discharges are retained. The former method we have, therefore, adopted, till the sore is brought into a more manageable state, and the cure is evidently assisted afterwards by the strips of plaster. It is more convenient, however, to spread the adhesive plaster only within about two inches of each extremity of the cloth, as it is thus more easily renewed, and on calico, as it possesses elasticity. The bandage should be always of calico.

In either plan, walking may be permitted, and each is assisted by it. If the pain be at first considerable, it soon passes off; for, while the general circulation is assisted, accumulations are prevented.

For the pathology of ulcers, see Hoffmanni Opera Supplementum, ii. 2; Hamberger Ulcerum Pathologia; Juncker de Abscessuum et Ulcerum indole diversa; Faustell de Ulceribus præcipue Chronicis; Geach's Tracts; Recueil des Pieces pour le Prix de l'Academie; Pott's Works; Heister's Surgery; London Medical Observations and Inquiries, iv. 347, &c.; Rowley, on the Cure of ulcerated Legs; Underwood's Treatise on Ulcers of the Legs.

Ulcer on the tongue. Ulcers in different parts of the nose, nostrils, &c. have been so foul and obstinate as to be mistaken for cancers, yet they have been cured by repeated emetics and saline purgatives. They have therefore been attributed to irritations in the præcordia; nor is this surprising, when we reflect how frequently eruptions of the lips and soreness of the tongue accompany stomach complaints. Richter has related a striking case of this kind, where the ulcer of the tongue was highly fetid, and the edges swelled and hard; but it was effectually cured by purgatives, assisted by the topical application of astringent washes.

Ulcers in the tonsils are by no means frequent, for as their excretory ducts are numerous, the mucus white, and the surface irregular, there is often on inflammation the appearance of ulceration, when in reality there is none. When ulcers are really formed, they may be seen after the use of an active gargle, and may be touched with mixtures of honey, alum, borax, muriatic acid, &c. according to their cause or attending circumstances. See Tonsillæ.

Ulcers in the womb. Whilst a viscid or yellow fluid is evacuated, the ulcer is in a mild state; but when it becomes sanious, fetid, and attended with pain, a cancer has come on or is impending, and palliatives only can be proposed. In the milder kind the bowels must be kept lax with manna, tamarinds, and similar purgatives, an infusion of elder flowers in milk and water injected. In worse cases a strong decoction of hemlock, with opium, may be used as an injection, and opium given freely to relieve pain.

Ulcus depascens. See Herpes.

U'LE. See Caoutchouc.

ULMARIA, (*quod uliginosis gaudet locis*). *Regina prati, barba capræ,* meadow-sweet, *spiræa ulmaria* Lin. Sp. Pl. 70?. The leaves are slightly astringent, the flowers highly fragrant. As cattle refuse it, some dangerous qualities have been suspected; but they also reject many innocent plants if their fragrance is offensive.

U'LMUS, (from the same). The elm tree, *ulmus campestris* Lin. Sp. Pl. 327, is a tall tree covered with a rough, chapt, brownish, brittle bark, under which lies a white, smooth, tough, coriaceous one. In the spring, before the leaves appear, it produces imperfect flowers, followed by flat roundish capsules, containing each a single seed. The inner tough bark hath no smell, but on being chewed discovers a copious mucilage; the outer brittle bark is less mucilaginous. The elm bark has been given, in decoction, in herpetic and leprous eruptions; but, though it seems occasionally to assist the action of mercurials, it is alone unequal to the cure of either complaint.

The inner bark is chiefly employed, and if two ounces are boiled in a quart of water to a pint, it is agreeably mild and astringent. The bark in the spring is most advantageously stripped from the small, but not the smallest, branches; and in autumn from the branching roots. Half a pint is to be taken every evening and morning; but on the first use of this medicine the disorder may appear to be aggravated, as is often the case with mercurials and the most successful medicines. Nitre may be occasionally joined with it, if the eruptions have an inflammatory irritable base, and gentle purgatives must be frequently interposed.

Banau proposes the use of the elm bark in fluor albus, rheumatism, old ulcers, cancerous and scrofulous affections, tinea capitis, scurvy, &c. See London Medical Transactions, vol. ii. p. 302; Medical Memoirs, n. 152; Journal de Paris, 1783, n. 255; and Lepra ichthyosis, in this work.

U'LNA, (from ωλενη, *the cubit*), *cubitus, focile,* one of the bones of the fore-arm. At its upper extremity are two processes, of which the posterior, called olecranon, is the larger. Its concave surface moves upon the trochlea of the os humeri, and into its upper part all the extensors of the cubit are inserted. The anterior process is not so large, nor reaches so high, but is sharper at its extremity, and therefore named coronoid. Between these a large sigmoid cavity is left, adapted to the trochlea of the os humeri; and on the other part is a cavity, where the extremity of the radius moves. The lower extremity of the ulna terminates in a very small head, which internally is received into the semilunar cavity of the radius, while, on its external side, there is a process called the styliform, from which a strong ligament is extended to the os pisiforme and unciforme of the carpus.

ULNA'RIS. The ulnar nerve. See Cervicales.

Ulna'ris arteria. See Cubitalis arteria.

Ulna'ris exte'rnus. See Externus carpi radius.

Ulna'ris gra'cilis. See Palmaris longus.

ULNA'RIS INTE'RNUS is a long muscle situated on the outer part of the ulna, fixed by its upper part on the back side of the long or internal condyle of the os humeri, in that part of the olecranon next the condyle, along the upper half of the ulna very nearly, and to the middle common tendon of the profundus: it ends by a long tendon on the os pisiforme of the carpus, reaching also to the os unciforme.

U'LON, (ουλον, from ουλος, *soft*). See GINGIVÆ.

U'LVA. See ALGA.

UMBE'LLA, (a dim. of *umbra, a shadow*). A receptacle producing many equal foot-stalks from one centre, and forming a plain surface. This is styled an universal umbel; but when it sustains others, the latter are called partial umbels.

UMBELLI'FEROUS. Plants whose flowers are disposed in umbels, as fennel, hemlock, parsley, &c.

UMBILICA'LIA VASA, (from *umbilicus, the navel*). UMBILICAL VESSELS, consisting of four ligamentary ropes: the uppermost running from the navel to the fissure between the two lobes of the liver, is the remains of a vein, which, in the fœtal state, anastomosed with the vena cava hepatica, covered with the falciform process. The next is the supposed urachus, and the other two are the extremities of the umbilical arteries, which at the top of the bladder approach each other, and join the urachus. In the fœtal state these vessels form the umbilical cord, by which the fœtus is attached to the mother by means of the placenta. See PARTURITIO, and PREGNANCY.

UMBILICA'LIS RE'GIO, the middle external region of the belly on its fore part, reaching from an imaginary line drawn betwixt the lowest false ribs, to another imaginary line drawn between the two cristæ of the os ilium. It is divided into three parts, viz. the middle, strictly the umbilicalis, and the two lateral, called flanks.

UMBILICA'LIS ARTE'RIA, a continuation of the HYPOGASTRIC ARTERY, q. v. ascending on the side of the bladder, and from thence to the navel. It is shrivelled in the adult state, as only useful in the fœtal.

UMBI'LICUS. The NAVEL, (*quasi umbo ilicis, the knot of the flank*); *omphalos*, the remains of the umbilical vessels in the middle of the belly.

Through the navel sometimes the urine in the case of calculus has been discharged; and water in cases of ascites, which seems to have suggested the idea of introducing the trochar through it in the operation of the paracentesis. In newly-born children it is often destitute of skin, sometimes inflamed; and Dr. Gartshore (Medical Communications, ii. 5) describes an epidemic erysipelas of this part, appearing at birth, and yielding to the bark. It sometimes suppurates and discharges pus; but the purulent discharges from the navel are more commonly owing to internal suppurations. Excrements, worms, hair, bones formerly swallowed, the menstrual blood, and even milk, have been discharged through it. Of its HERNIA we have already spoken, vide in verbo.

UMBI'LICUS MARI'NUS, *operculum cochleæ cœlatæ, cotyledon marina, acetabulum marinum, androsace Mathioli, fungus patraus marinus*, a small oval shell, resembling the human navel; but properly the operculum of a shell-fish, serving to close up the aperture in the shell of the buccinum, and for that purpose fixed to the anterior extremity of the body of the animal. It is convex on one side, and flat on the other: the convex side is plain, and white; the flat yellowish or reddish, and marked with a spiral line. It has been considered as an absorbent and astringent, sometimes as a diuretic, but not in present use. See ANDROSACE, and COCHLEÆ.

UMBI'LICUS VE'NERIS. See COTYLEDON.

UNCIFO'RME OS, (from *uncus*, and *forma*). The fourth bone of the second row in the wrist: it hath an apophysis shaped like a claw, from which its name is derived. See CARPUS.

UNE'DO PAPYRA'CEA, (from *unus*). See ARBUTUS PAPYRACEA, and AMATZQUITL.

UNGUENTA'RIA. See NUX MOSCHATA.

UNGUE'NTUM, (from *ungo*). An OINTMENT, differs from a plaster only in consistence. The fresh leaves of plants are usually boiled in lard; but the extract retains little of their virtue, with a very few exceptions, as, for instance, the Sabine ointment. The names are most commonly taken from the substances.

UNGUE'NTUM LILIORUM. See CRINOMYRON.

UNGUE'NTUM APOSTOLORUM. See APOSTOLORUM UNGUENTUM.

UNGUE'NTUM MARTIATUM. See MARTIATUM UNGUENTUM.

UNGUE'NTUM AD VESICATORIA. See CANTHARIDES.

UNGUE'NTUM HYDRARGYRI NITRATI. See TRACHOMA.

U'NGUES, (from ογκος, *a hook*). The NAILS are continuations of the cutis vera, or rather of the nerves, which supply it. While connected with the cutis they are acutely sensible; but, on the connection being destroyed, they become a dead animal matter, wholly insensible. In this, as in their substance, they resemble horns of animals, and are composed of several planes of longitudinal fibres united together, which end at the extremity of each finger, and are all nearly of an equal thickness, but of different lengths. The principal use of the nails is to give a support to the arteries and nerves, in which the sense of touching resides.

The nails, like the hair, are said to grow after death, but with as little foundation from observation. They partake of the diseases of the vital rather than the simple solid, and are weak and brittle in cachectic habits, long and bent in phthisical ones. Their growth is often irregular, and, in some instances, they have been elongated to an immoderate extent, while in hæmiphlegia their growth is said to have been wholly checked. A singular and almost incredible instance is recorded in the Journal de Medecine of a nail growing on the second phalanx after the first had been separated, xxvii. 177. Gooch has recorded an habitual decay of the nails, and they have been separated after malignant fevers and by terror from the hand with the cuticle, the fact which has led to the supposition that they are derived from it; but the cuticle is insensible, and the nail is acutely sensible, like the horns of animals, at its origin, independent of the subjacent skin.

U'NGUIS, and U'NGULA, a collection of matter in the pupil of the eye, in the shape of a nail. It is described as a film formed on the external part of the eye, extending over the pupil, which, when red, is called *pannus*, when white, *albugo*. When pustules appear on the cornea of the eye, it is not called *unguis*.

but PHLYCTÆNÆ, q. v. When red the vessels are divided near the great angle of the eye, and the film in consequence shrivels, and may be easily removed. See also PTERYGIGION and ALBUGO. Bell's Surgery, vol. iii. p. 300.

The name of that kind of articulation now called suture. In botany it is the white and inferior part of the leaves of roses, &c. sometimes called the claw.

U'NGUIS O'SSA, (from the resemblance to a nail), *lacrymalia ossa*, are two thin bones, very brittle, placed at the inner canthi of the eyes, covering some of the sinus ethmoidalis, and properly part of the os ethmoides.

Their surface is smooth and hollow, divided by a ridge; the hind cavity forms a portion of the orbit, and the fore part is a perpendicular canal which contains the lacrymal sac and duct.

U'NGULA. See UNGUIS.

U'NGULA CABALLI'NA. See TUSSILAGO.

UNICO'RNU, *ceratitis, cornu unicornu, cornu et ebur fossile, monoceros*. The existence of the unicorn is highly problematical, though Sparmann has collected some traditions which seem to rescue it from the class of unfounded fables. What is generally styled the horn of the supposed beast belongs to a species of chetodon, a cetaceous animal; but the name is more commonly given to the fossile bones of some large animal, either the mammoth or the megalatherium. They were formerly employed as sudorifics and astringents, and more lately on the continent as absorbents, internally and externally, in the troublesome tettery eruptions of children, for which flour and ceruse are more commonly used.

UNIFLO'RUS, (from *unus*, and *flos*); bearing but one flower.

UNIFO'LIUM, (from *unus*, and *folium*); bearing but one leaf. See MONOPHYLLON.

UNILOCULA'RIS, (from *unus*, and *loculus*); a capsule with one seed-shell.

UNISPE'RMUS, (from *unus*, and *sperma*); bearing but one seed.

UNIO'NES, (from *unus*); because only one is found in a shell. See MARGARITÆ.

UPMINSTER WATER, rises near Brentwood in Essex, about twenty-two miles from London. It is clear, bright, and sulphureous, retaining, according to Dr. Rutty, its strong sulphureous smell after being carried to Dublin in bottles. From a gallon of this water he obtained 132 grains of solid matter, composed of insoluble earth, vitriolated magnesia, and natron. It is purgative and diuretic in its operation, and is administered in a morning, from one pint to two quarts.

UPOSTA'SIS. See EPISTASIS.

UPSILOI'DES, (ὑψιλοειδης). See OS HYOIDES.

U'RACHUS, (from ουρον, *urine*, and εχω, *to contain*). In the fœtal state the urine was formerly supposed to pass from the bladder into the allantois, through the urachus, which after the birth shrivelled and became a ligament. See INVOLUCRA.

URANOSCO'PUS, (from ουρανος, and σκεπτομαι), *cœli spectator*, sometimes *priest*, and improperly confounded with the callionymus. It is the *u. scaber* of Linnæus, and the name of a sea-fish, whose eyes are placed so upon the head that it looks directly to the sky. Its bile is said to be more plentiful than that of any other fish, and by Galen recommended in affections of the eyes and ears. Castelli.

URCE'OLA, URCEOLARIS, URCEOLUS VITREUS, (from *urceolus, a small pitcher*); so named from its uses in scouring glazed vessels. See PARIETARIA.

UREA; URIC ACID. See CALCULUS and URINA.

URE'DO, (from *uro*). A BLAST. Also the name of a particular headach, an instance of which is related in the Philosophical Transactions, June 1668. See URTICARIA.

URETE'RES. URETERS, (from ουρον, *urine*). See RENES.

URETE'RICA. A suppression of urine from inflammation in the ureter. See ISCHURIA.

URETEROLI'THICA, (from *ureter* and λιθος). A suppression of urine from a stone in the ureter. Videatur idem.

URETEROTHROMBOI'DES, (from *ureter*, θρομβος, and ειδος). A suppression of urine from grumous blood in the ureter. Vid. idem.

URETEROPHLEGMATI'CA, (from *ureter*, and φλεγμα, *phlegm*). A suppression of urine from pituitous matter in the ureter. Vid. idem.

URETEROPY'ICA, (from *ureter*, and πυον, *pus*). A suppression of urine from purulent matter in the ureters. Vid. idem.

URETEROSTOMA'TICA. ISCHURIA, (*ureter*, and στομα, *mouth*). A suppression of urine from obstruction in the lower orifice of the ureter. Vid. idem.

URE'THRA, (from ουρον, *urine*), *meatus urinarius*, a membranous canal running from the neck of the urinary bladder, through the prostate gland, where it is styled *urethra prostatica*, after which it is much dilated, and this portion is its *bulb*. A cutaneous eminence called *caput gallinaginis* or *verumontanum* is placed in the bulb, and in it are the apertures from the prostate gland and testis, so that the fluids from each are here united. It then passes between the cavernous bodies of the penis, so far as its extremity, where it ends by a longitudinal orifice in the anterior part of the glans. The inner membrane of the urethra, or passage for the urine from the bladder, is a continuation of that which lines the bladder, very smooth and sensible, in which are several lacunæ, the mouths of the mucous glands, the seat of gonorrhœa. In women the urethra is wider than in men, and its length is only from an inch to an inch and a half. A stone fixed in some part of the urethra (see CALCULUS) produces great pain, inflammation, tumefaction of the parts, always a partial, frequently a total, suppression of urine. When long neglected, the suppression and tumefaction terminate in a rupture of the urethra, and the urine escapes into the contiguous cellular substance, producing very troublesome swelling in the body of the penis, as well as in the scrotum, and through the whole course of the perinæum. When a stone has been long fixed at one part without yielding, and when the pain and inflammation produced by it are considerable, a chirurgical operation is necessary for removing it; but in the incipient stages more gentle means may be first employed. We have rendered it highly probable that the urethra is subject to spasm, and to relieve it general or topical bleeding, according to the patient's strength and habits, will be necessary. A quantity of warm oil should be repeatedly injected

into the urethra, to lubricate the passage; the patient should be immersed in a warm bath, anodyne liniments rubbed in on the canal, and a full dose of opium at the same time given. When the parts are thus relaxed, some attempt should be made for extracting the stone. To this end, the surgeon should at first endeavour by very gentle pressure to push the stone forward along the course of the urethra; and in this manner large stones may be brought off, which might otherwise require a very painful operation. When the stone fills up the urethra, or will not pass, it will be necessary to proceed to the operation, which is performed by cutting upon the stone, and extracting it either with a scoop, or with a pair of small forceps, as in the original operation of lithotomy by cutting on the gripe. When the stone is fixed in the urethra near the neck of the bladder, the patient, laid on a table, must be secured as for the operation of lithotomy; an assistant suspending the scrotum and penis. The surgeon, after oiling the first and second fingers of his left hand, should introduce them into the anus, in order to press firmly upon the parts immediately behind the stone, which will not only enable him to lay it bare with more ease, but prevent it from being pushed into the bladder by the pressure of the knife. An incision ought to be next made through the common integuments and urethra, so as to lay the stone completely bare, which may now be turned out by a due degree of pressure applied by the fingers in the rectum, with a scoop or a pair of forceps. The subsequent treatment is the same as after the operation of lithotomy. When the stone hath passed further into the urethra, in order to extract it, the skin should be drawn as much as possible behind it, and the stone being now secured in its situation by pressure, a longitudinal cut must be made directly upon it through the urethra, of a sufficient size to allow of its easy extraction with either instrument mentioned. The edges of the wound should be completely cleared of sabulous particles, and the skin replaced in its natural situation, which will completely cover the wound in the urethra which thus usually heals by the first intention. If the stone fixes near the point of the penis, as is sometimes the case, if so near as to be observed by the eye, it may be frequently taken out with a pair of small forceps: and to facilitate the extraction, when it cannot be otherwise effected, the urethra may be somewhat dilated from its extremity with the point of a scalpel. But if we fail in this attempt, an incision must be made upon the stone where the urethra is covered with skin. Soft dressings should be applied to the wound, and, when the cure is nearly completed, a hollow bougie, a short silver tube, or a small catheter of the elastic gum, introduced into the urethra, to preserve it of a proper size. The worst situation of a stone is just below the scrotum, for if it makes its way into the scrotum, or it be necessary to make an opening into it, the collections of urine which accumulate occasion considerable distress. When a stone therefore is discovered in this situation, it must be carried farther if possible into the urethra, or pushed back into the perinæum by means of a staff. If either attempt is impracticable, and it is necessary to extract the stone, an incision must be made into the urethra, beginning the wound at the under part of the scrotum immediately to one side of the septum, and continuing it upwards till the stone is distinctly felt, when it may be laid bare and extracted as above directed. The dressings after the operation must be conducted so as that the sore may heal first at the bottom, for otherwise the parts below will be filled with matter, perhaps with urine, and very troublesome sinuses formed. In females, the urethra is short, and dilates readily, so that stones are rarely detained in it, or may be turned out by passing the end of a blunt probe behind them, and pulling them forward. If this does not succeed, the end of the urethra may be divided a little way so as to admit the introduction of a pair of forceps. See STRICTURÆ, &c.

The urethra in new-born children is sometimes imperforated, and requires an operation: it is sometimes obstructed by caruncles and excrescences, independent of stricture, though the existence of caruncles has been denied, particularly by Camper (Demonstrationes Anatomico Pathologicæ, ii. 11) and by Saviard (Nouveau Recueil de Observations, 74). In general, however, it is admitted, and they must be treated like strictures. There are sometimes considerable hæmorrhages from the urethra, and inflammation is no uncommon attendant, not only from gonorrhœa, but from the means employed to destroy caruncles and strictures. Little bones, coagula of blood, fragments of a bougie, and even needles, have occasionally obstructed it, and the means of removing these will be obvious from what we have said respecting calculi. Spasm is also relieved by the means described in that part of the article, to which we may add, ether, camphor, and often wine in a large quantity. Spasm frequently arises from increased sensibility of the urethra after gonorrhœa, and is then relieved by opium, hemlock, often by electricity. See Bell's Surgery, vol. ii. p. 140—188.

URETHRELMI'NTHICA, (from *urethra*, and ελμινς). A suppression of urine from worms in the urethra. Seh ISCHURIA.

URETHRI'TICA, (from ουρεθριτις, *an inflammation of the urethra*); from inflammation in the urethra. Videatur idem.

URETHROHYMENO'DES, (from *urethra*, ὑμην, *a membrane*, and ειδος, *likeness*); from a membrane obstructing the urethra. Vid. idem.

URETHROLI'THICA, (from λιθος, *a stone*); from a stone in the urethra. Vid. idem.

URETHROPHLEGMA'TICA, (from φλεγμα, *phlegm*); from mucus obstructing the urethra. Vid. idem.

URETHROPY'ICA, (from πυον, *pus*); from pus. Vid. idem.

URETHROTHROMBOI'DES, (from θρομβος, *grumous blood*, and ειδος, *likeness*); from grumous blood. Vid. idem.

URI'NA, (from ουρον). The URINE, *adsamar*, *albor*, *alcolita*, is a fluid secreted from the blood by the kidneys, conveyed by the ureters to the bladder, and discharged through the urethra. When suppressed, a portion is usually absorbed, and often passes through the pores of the skin. The sudden discharge of some fluids after swallowing them hath led to a suspicion, which anatomy does not countenance, that there is a shorter passage to the bladder than through the kidneys. Of the appearance of the urine as a source of prognostic, particularly at the crisis of diseases, we have already spoken (see PROGNOSTICA), and need now only add,

that when after standing a cloud is diffused in the urine, it was usually styled *nubes*, or *nubecula*; when the cloud sinks a little, leaving the urine above somewhat transparent, *enæoremata*, *sublimationes*, *suspensa*, or *sublimia*; and when the whole cloud falls to the bottom, in a thick sediment, *subsidentia*, *subjecta*, and *sedimenta*. When it drops a white mucus, or purulent sediment, it is named *puotaria*.

The recent urine of a healthy person is a clear, yellow fluid, varying in specific gravity from 1.005 to 1.033, according to the quantity of its solid contents, or to the proportion secreted. Its smell is peculiar and well known; its taste saline and slightly acidulous, so as to redden the blue vegetable juices. After standing for some hours, it becomes slightly turbid, depositing a red matter, which is chiefly the *uric acid*; the *uric oxide* of Dr. Pearson. When exposed to a gentle heat, the urinous odour is increased, the urine is covered with a pellicle, in which many globules of carbonic acid gas are entangled; the colour gradually becomes a dark red, and a whitish flocculent coagulum is soon deposited, the steam becoming more decidedly ammoniacal in its smell. It now turns syrup of violets green; for, as may be expected from its smell, a quantity of ammonia is formed or developed, and the phosphat of lime, held in solution by the excess of acid, is deposited with some albumen in a flocculent form. If the evaporation is continued till the fluid has acquired the consistence of a syrup, decanted from its sediment, and set in a cold place, brown, dirty crystals are deposited. These may be purified in the usual ways of repeatedly dissolving, filtering, and crystalising; but more quickly by digesting with alcohol, which will dissolve the extractive matter, and the urea, without the saline impregnation.

The salts, thus formed, are the muriats of potash and soda, phosphats of soda, and of soda with ammonia, formerly styled *microcosmic* or *fusible salt*. If the evaporation is slowly and carefully conducted, the salts separate nearly in the order mentioned. The simple phosphat of soda may be distinguished by the form of the crystals, which are four-sided prisms, by efflorescing and running into an opaque glass, when melted. Mr. Cruikshanks finds, that thirty-six ounces of healthy urine yield about one of solid contents; of which the muriatic salts are estimated at about three drams, the alkaline phosphats at three drams and fifty grains; the phosphat of lime and uric acid, deposited, at twenty-five grains, and the extractive matter or urea at three drams forty grains.

Urine also contains, according to Proust, a resinous matter, and a small proportion of sulphur, which is chiefly discovered by the urine blackening a silver dish in which it is evaporated. Minute chemistry has detected some other acids, particularly the *benzoic*, and the pink-coloured sediment, styled the *rosaceous acid*; but these are of little importance in our present views.

The urea requires a more particular attention. We have styled it, with modern chemists, an extractive matter, slightly acidulated; and it yields, on distillation, carbonated ammonia. With nitrous acid, a nitrous gas is separated, and crystals deposited of a flat rhomboidal shape, and a greasy feel, resembling the acid of borax. On examination, it appears to be neither oxalic nor phosphoric acid. This salt when heated melts, and evaporates in white smoke, and a reddish flame, similar to nitrat of ammonia.

When the urea is separated by its solution in alcohol, it takes up a small portion of benzoic acid, though too small to affect its properties. The first crystalisation is in imperfect quadrangular plates, of a brilliant yellowish white, containing a little muriat of ammonia. In this state it is hard, granular, highly fetid and deliquescent. When distilled alone, the benzoic acid first rises into the neck of the receiver. Carbonate of ammonia, and nothing else, follows. The smell in the vessels resembles highly putrid fish, and the residue is blackish and dry. In a higher temperature, white fumes of muriated ammonia rise, and the coaly residuum resembles, in smell, the prussic acid, when moistened. Urea is soluble in water, and continues for a long time without any change, unless some albuminous matter is added, when it ferments, and acetite of ammonia is produced. This solution, on distillation, is almost wholly changed into carbonat of ammonia. Caustic fixed alkalis dissolve the urea, disengaging a large portion of ammonia, and leaving the benzoic, acetous, and carbonic acids. It changes the forms of the crystals of other salts, so that muriat of soda crystalises in octoedra, and muriat of ammonia in cubes.

The urine of a horse contains no phosphoric and no separate benzoic acid; but benzoat of soda only: that of the cow contains no soda, phosphoric salts, or benzoats; that of the camel, carbonat, sulphat, and muriat of potash only with the urea; that of the rabbit, sulphur, without phosphoric or benzoic salts; that of the Guinea pig contains no urea.

In diseases the urine is sometimes of a black colour; but this is not always a dangerous symptom. The colour has been attributed to eating grapes, or damascene plums; sometimes, as by Hippocrates, to black bile. The greater number of authorities are certainly in favour of the little danger to be apprehended from black urine, and unless in fevers of the asthenic kind, with highly putrid symptoms, we have not found it formidable. The urine is sometimes calcareous when discharged, like the urine of a horse, after hard riding, and sometimes milky, or, as it is styled, chylous. The first seems to have occurred after long fits of gout, and sometimes in cases of rachitis or mollities ossium. The second is often purulent, sometimes a mucous discharge, though occasionally said to be an admixture of chyle. Theden mentions white urine "from mucous hæmorrhoides of the vesica." Urine, however, often contains a very extraordinary proportion of gelatin and albumen, which frequently attend the dropsies that follow scarlatina or putrid diseases. We have seen that this portion of the blood is chiefly affected in severe fevers, and probably from its altered qualities, is thrown out, while the attenuated fluids pass more freely through the exhalents. In dyspeptic cases also the urine is said to contain a large portion of albumen combined with it, which may be precipitated by tanin, while, in diseased liver, there is no albumen, and the urine is highly coloured, depositing a rosaceous sediment. Highly red urine usually attends inflammatory fever and inflammation of every part of the urinary organs.

Pale urine is a common attendant in hysteria, and Berthollet has observed that previous to a fit of gout the urine contains a smaller proportion of the urea, and

often none. We have seen urine of this kind attend low fevers, and the fever has diminished on the return of water possessing the usual colour and smell. We have discovered the amendment by looking at the water in the window above, before we had seen the patient; but were unfortunately unable to produce it until nature chose to determine the urea, &c. to the kidneys. In gout the urine is pale, and the conclusion of a fit is determined by a very copious discharge of the red matter.

De Haen mentions a case of fetid urine (Ratio Medendi, pars. xii. 170), which was highly putrid, and "did not effervesce with acids." It is sometimes scaly or branny from weakened vessels, sometimes oily, occasionally of a violet smell, which, in one instance, followed after taking Peruvian bark; but is a general effect of eating asparagus. It is coloured occasionally by rhubarb, by mithridate and by bile (Bianchi Historia Hepatis, 136). We have already mentioned that we have seen the urine green from the bile, when it has contained an excess of acid.

The numerous stories of foreign bodies found in the urine are calculated rather to excite our wonder than command our assent. We can admit, that substances introduced into the urethra may appear to be discharged with the urine, that hydatids may be formed in the bladder or kidneys, or that worms, occasionally solid substances, forming abscesses between the rectum and bladder, may find their way into it. Portions of decayed kidney may also be sometimes discharged in this way; but bones, pills, pieces of iron, stones of fruits, seeds of various kinds, leaden balls swallowed, parsley roots, needles, ants, little fish, &c. cannot be formed in the bladder, nor pass through the minute vessels of the kidneys. In fact, except in the modes just mentioned, no such substances can reach the bladder, and, however, respectable the authority of the relater, we must arrange them with St. André's rabbit woman. As this censure was to follow, we have avoided mentioning the names of the authors.

When the urine is retained by any obstacle in the bladder, it sometimes passes out by unaccustomed passages, which we shall notice in the following article (UROPLANIA); but, when no escape is obtained, the load is gradually lessened by a portion being taken up by the absorbents, and carried generally to the skin. After some time the distension gives little pain, and the patient sinks in a comatous state subsequent to a slight delirium, from a mortification of the vesica. The delirium and the coma have been attributed, with little reason, to the effusion of the absorbed urine in the ventricles of the brain. There is no evidence of such effusion, and the distended bladder, pressing on all the branches of the descending aorta, will sufficiently account for all the effects.

The *urine casters*, a sect of quacks almost within our own recollection, had a peculiar jargon, which it is not necessary to attend to, and, in our references, we shall confine ourselves to the more judicious observers of ancient and modern times.

For the analysis of urine, see Fourcroy and Vauquelin, Annales de Chimie, xxxi. xxxii.; Cruickshank's Experiments apud Rollo on Diabetes; and Philosophical Magazine, vol. ii. Proust Annales de Chimie, xxxvi.; Fourcroy Connoissances Chimique, x. 181.; Pearson's Experiments in the Philosophical Transactions for 1798.

Willisii Opera i. 223; Bellinus de Urinis; Stahl de Uromantiæ et Uroscopiæ abusu tollendo; Alpinus de Præsagienda vita vel Morte; Boerhaavii Institutiones cum Commentariis Halleri.

BLOODY URINE. *Hæmaturia*, (from αἷμα, *sanguis*, and οὖρον, *urina*). Hippocrates observes that if pure blood is copiously and suddenly discharged without pain, it flows from the kidneys; but when the quantity is small, of a blackish colour, with pain, or heat, or both, during or after the discharge, its source is the bladder. The symptoms of vessels ruptured in the bladder are intense pains, fainting, difficulty of breathing, a low, small, frequent pulse, nausea, anxiety, and cold sweats. A stone in the bladder is sometimes the cause: and in the Edinburgh Medical Essays, vol. vi. it was produced by a worm. Cœlius Aurelianus speaks of a species of hæmorrhoids discharging blood with the urine; and it is sometimes observed that, on their cessation, blood passes by the urethra. Indeed Hoffmann describes vessels around the sphincter of the bladder opening as hæmorrhoidal ones, and Theden speaks a similar language, when he mentions the source of mucous discharges with the urine. Strong purges and highly stimulating diuretics are often the reputed causes; but this hæmorrhage rarely happens from the former, and indeed not frequently from the latter, unless the management has been rash and indiscreet. It most commonly proceeds in old persons from debility, sometimes, in full habits, from plethora. In each case it is a troublesome and obstinate, but not a dangerous, disease; and, as it flows slowly and in small quantities, it is not easy to say from what part of the urinary tract it proceeds. Florid blood has been supposed by modern authors to come from the bladder, what is dark and grumous from the kidney. As a symptom, it frequently attends calculus in the bladder. Bloody urine sometimes also arises from poisons, sometimes from the rupture of a vessel, in consequence of a strain, a blow, or concussion.

The most dangerous hæmaturiæ are from ulcers and from wounds of the kidneys or bladder; but those from the kidneys, or the sphincter of the bladder, are sometimes critical and salutary, returning at certain intervals: yet, though at first salutary, from their supplying other evacuations, they are not without danger from the debility induced.

Bleeding is only requisite in the young and plethoric, when attended with pain, and arising from a strain, &c. In these circumstances, rest, cooling saline purgatives, camphor with nitre, and, after the bowels are cleared, with Dover's powder, are the most effectual remedies. The drink should be diluting and mucilaginous, the diet low, the laxatives repeated every day, or every other day, according to their effects. When the bloody urine proceeds from suppressed hæmorrhoids, we are told to bleed, and give aloetics: but we thus establish two injurious habits instead of one, and it will be better, by a judicious plan of diet and medicine, to destroy the original accumulations in the rectum.

Even in old people, nitre with camphor will be found useful; and, if combined with, or originating from, fulness, regular evacuations by stool, a regulated diet,

and steady moderate exercise, should constantly be employed. With these assistances we have never found such hæmaturiæ dangerous; on the contrary, they have sometimes appeared salutary. We have not found in any instance the bark or the uva ursi particularly advantageous. See Hoffmanni Rationalis Medicinæ Systema; Cullen's First Lines, vol. iii. p. 67, edit. 4; London Medical Journal, vol. iv. p. 282; Sydenhami Opera.

INCONTINENTIA URINÆ, *enuresis*, (from ενουρεω, *urinam non contineo*); "an involuntary flux of urine without pain," arises from the weakness of old age, from palsy, a relaxation of the suspensory ligament of the bladder, from hard labour, the abuse of acidulous mineral waters, excess of venery, accumulations in the head occasioning insensibility, narcotic poisons, difficult labours, lithotomy, violent straining to make water, coughing, epileptic paroxysms, diseases of the medulla spinalis, or the sphincter vesicæ. These are causes of the atonic species.

When from irritation, it is often produced by a stone in the bladder, by the pressure of a child's head in the latter months of pregnancy, a schirrus of the prostate, "a bagpipe singing in the nose;" or the sound of a lyre, which we add in support of Shakspeare's pathology, from the Ephemerides Naturæ Curiosorum, Dec. 1. i. 134.

The means of relieving the latter species depend almost wholly on the causes. When the disease proceeds from pure debility, the bark, the catechu, and the Peruvian balsam have been employed, though seldom with considerable effects. Blisters to the sacrum, cold bathing, cold water dashed against the sacrum, are more useful; but the most serviceable medicine is the cantharides. Twenty drops of the tincture slowly, but daily increased, until some pain is felt at the neck of the bladder, frequently relieve, and often check the disease for some years (Smyth in the Medical Communications, ii. 34). This author, however, directs the cantharides in substance. Lange recommends the application of the tincture of cantharides to the perinæum; and a blister, to this part, is often an excellent auxiliary. See Hoffmanni Opera; London Medical Observations and Inquiries, vol. ii. and iii.; Bell's Surgery, vol. ii. p. 163; London Medical Journal, vol. vi. p. 417, vol. vii. p. 416; White's Surgery, p. 378.

URI'NÆ STIMULATO'RES. See ACCELERATORES URINÆ.

URINA'RIA, (from their diuretic qualities). See LINARIA; DENS LEONIS.

UROPLANIA, (from ουρον, *urine*, and πλαναω, *to wander*). A discharge of urine through unaccustomed passages.

Urine, when retained, finds a way through many neighbouring organs, and the orifice, originally formed by inflammation and suppuration, soon becomes callous at its edges, in medical language *fistulous*. The abscess is most frequently formed in the perinæum, at the root of the penis; sometimes at the bulb, or in the course of the urethra; through the loins, the rectum, and almost every part around. It can only be cured by opening the natural channel, the urethra, by bougies, either simple or armed, catgut, &c. The edges of the fistulous sore, in that case, if touched with a caustic, or cut off by a knife, soon unite, and the patient is cured. The urine, we have said, also sometimes passes through the skin, or the want of secretion is imperceptibly supplied, as there are instances of persons not discharging any for six weeks; one case of which occurred within our own observation, and another is described by Dr. Senter in the Philadelphia Transactions.

Urine has certainly sometimes passed through the umbilicus, as has been said, through a pervious urachus (Act Eruditorum, an. 1700, 265, Blanchard Collectiones Physico Medicæ, cent. iv. 19); has been effused into the cellular substance of the scrotum, been collected in the peritonæum, and discharged by the vagina, and even by the mouth (Valisnieri Opera, iii. 338). In the monsters who exhibit themselves, as shows, the ureters terminate abruptly, with open mouths just below the navel.

URORRHŒ'A, (ουρον, and ρεω, *to flow*). The urine passing from the urethra through some erosion of the perinæum. See UROPLANIA.

U'RTICA, (*ab urendo*). The COMMON NETTLE, *acalephe*; *adice*; *cnide*; *urtica dioica* Lin. Sp. Pl. 1396, has been styled an astringent and diuretic, useful in calculous complaints, hæmorrhages, scurvy, gout, jaundice, &c. In spring the young shoots are boiled and eaten by the common people as antiscorbutic; the reason of which we have endeavoured to assign (see SCORBUTUS). When applied to the skin their stings produce strong irritation, and they have consequently been used externally to stimulate paralytic limbs, and in other cases of torpor or lethargy.

U'RTICA ALBA, INERS, MORTUA. See LAMIUM ALBUM.

U'RTICA INERS MAGNA FŒTIDISSIMA. See GALEOPSIS.

U'RTICA LACTEA. See LAMIUM MACULATUM.

U'RTICA MARI'NA. SEA-BLUBBER. A round compressed pellucid substance, resembling jelly, with red veins interspersed; the *medusa* of naturalists, which derives its present name from the pricking pain felt on handling it. The animal has no sting; but the caustic juice seems discharged at will. It is singular also that this animal can apparently render itself heavier at pleasure. It is the ortia de mer de Dicquemaire, not used in medicine, but probably poisonous. See Journal de Physique, 1784.

U'RTICA ROMANA, *urtica pillulifera* Lin. Sp. Pl. 1395. The seeds were formerly used in hectics, but are now neglected.

URTICATIO, (from *urtica*). Whipping with nettles, a remedy in palsy.

URTICA'RIA, URTICA'TA, (from *urtica*); *febris urticata*; *uredo*; *purpura urticata*, the ACUTE NETTLE-RASH, an *exanthema* defined by Dr. Cullen febris amphemerina, in which red spots resembling the stinging of nettles break out on the second day, commonly disappearing in the daytime, and returning at night with fever, and after a few days wholly falling off in very minute scales. It is the *species altera erysipelatis* of Sydenham, the *scarlatina urticata* of Sauvages. Dr. Cullen observes that there is a disease called by the English the nettle rash, supposed to be the *urticaria*; but that described by Dr. Heberden, in the London Medical Transactions, and such as he has often seen, is totally

different, he adds, from the urticaria of nosologists; for it is chronical without fever, and rather belongs to the class of impetigines. In a former edition of the Synopsis he had asserted that the urticaria was contagious; but that opinion he finds, from experience, is erroneous. It is a troublesome but mild disease, seldom requiring the use of remedies, but an antiphlogistic regimen, in a moderate temperature. The itching is sometimes relieved by bruised parsley, by camphorated vinegar or tincture of opium. Opium internally removes irritability. When acute, as it sometimes is, the eruption appears to be critical. Cullen's First Lines, edit. iv. vol. ii. p. 252; Heberden in the Medical Transactions; Saalman Descriptio Febris Urticatæ; Chemnitz de Essera Arabum; Koch Febris Urticata.

U'RUCU. See ACHIOTL.

U'STIO, (from *uro, to burn*). See CALCINATIO.

UTERA'RIA, (from *uterus, the womb*). UTERINE OF HYSTERIC MEDICINES. Medicines suited to cure diseases of the uterus; a term much too general, and now rejected.

UTERIFO'RMIS ABSCE'SSUS, (*uterus*, and *forma, likeness*). See ŒDAMASARIA.

U'TERUS, (from *uter, a bottle*). The WOMB, *gone, ager naturæ, hysteria, matrix, metra, utriculus, delphys, gaster, & eugeos*; situated between the bladder and the rectum, covered with the peritonæum, which comes from the back part of the bladder, ascending over the fore part of the uterus, and its fundus, down the posterior side, and thence to the rectum. On each edge of the uterus, this position of the peritonæum forms a broad duplicature, which is extended on each side, more or less directly, to the adjoining lateral parts of the pelvis, forming a sort of membranous partition between the anterior and posterior parts of the cavity of the pelvis, and then is continued loosely with the peritonæum on its sides. These two duplicatures are called the ligamenta lata, the laminæ of which are connected by a cellular membrane, and contain the tubæ Fallopianæ, the ovaria, part of the spermatic vessels as well as those which go to the uterus, the ligamenta rotunda, and the nerves. The uterus is somewhat triangular in its shape; the fundus is almost a straight line, and the two sides approaching toward the cervix: it then grows larger, and is narrower again at the os tincæ, which is received *into* the vagina. Where the uterus grows broad beyond the neck, Moschion calls it *omos*. In the unimpregnated state it is thicker at the cervix than at the fundus, as at the former it exceeds and at the latter usually falls short of half of an inch. The inside of the uterus is smooth; at the upper part very vascular, and below, white. The cervix uteri, on each side, is divided into two lateral parts by a ridge, from whence the fibres go off in a pinnated manner. At each angle of the fundus we may introduce a bristle into the beginning of the Fallopian tubes, which proceed in a tortuous direction to the ovaria. (See OVARIA and TUBÆ FALLOPIANÆ.) The uterus is furnished with blood-vessels from the hypogastrics and the spermatics. The spermatics rise as in the male, and when they reach the psoas muscle, they pass between the duplicatures of the ligamenta lata, to the tubæ Fallopianæ, the ovaria, and the uterus. On the sides of the uterus, the hypogastric branches of the iliacs pass to the vagina, in a serpentine direction anastomosing with the spermatics, which are mostly above; the hypogastrics below.

The veins of the uterus are large, and admit of considerable distension; but in the impregnated state, and in the intervals of menstruation, they are of the size of the arteries. They accompany and anastomose with the arteries, bearing the same respective names: the former proceed to the vena cava on the right, and to the emulgent vein on the left; the latter to the internal iliac. The lymphatics of the uterus are particularly large and numerous: those which follow the course of the hypogastric vessels pass into the gland of the iliac plexus; the spermatic to the glands near the origin of the spermatic artery.

The nerves of the uterus arise from the lower mesocolic plexus, and from two single, flat, circular ganglia behind the rectum: the ganglia are joined by branches from the sacral nerves. The nerves of the ovaria are from the venal plexus. From its intimate connection with the ganglionic system it is in no instance subservient to volition.

The uterus is lined by an acutely sensible membrane, derived from the villous coat of the vagina, which, when it arrives at the uterus, is beautifully corrugated in longitudinal rugæ, which lessen as they approach the fundus, and at last disappear.

The muscular fibres of the uterus are compact in their unimpregnated state, and loose in the pregnant. From the expanded vessels they seem to lose their cohesion. Their direction is seldom regular; but in general, as in all hollow muscles, circular, and more distinct, often more regular about the fundus,

The diseases of the uterus almost elude enumeration. The *inverted*, the *reverted*, and the *retroverted* uterus have occurred in the obstetric arteries, particularly PREGNANCY and PARTURITIO, q. v. Polypi, schirri, and cancers of the uterus do not differ in their treatment from the same diseases in other parts, except that the first may be removed by ligatures, which are dexterously conveyed by means of an instrument round their neck. Of *cancers* and *schirri* we have already spoken, and the gloomy prospects held up in these articles are still more so when the disease occurs in the womb. The uterus, when *prolapsed*, is secured by pessaries; and when this takes place in a slight degree, rest, with tonics, particularly the cold bath, will often prevent its increasing. Rest is, however, particularly necessary. Resinous and balsamic vapours received into the vagina are very ineffectual remedies, and now neglected, and still more ridiculous are the cataplasms on the abdomen, to draw the uterus upward, some of which Vogel has admitted into his Materia Medica. Numerous cases are related where extirpation of the prolapsed uterus has been practised with safety. We can easily conceive that it may be so when a gangrene has come on; but that in other circumstances it would be, as is often reported, fatal. The most singular case of this kind is related by Wrisberg, in a dissertation published at Gottingen, in 1787, where the uterus was extirpated, *soon after a natural birth*, and the woman recovered.

Inflammation of the uterus is more uncommon than authors have represented it. We have never seen but two decided instances of it, and in neither was there

any symptom of puerperal fever: both recovered by fomentations, camphor, and, above all, by active laxatives. Abscesses of the uterus are mentioned by many authors, but, except the cancerous ulcers after schirri, they appear to be very rare. *Dropsy* and *emphysema* of this organ seem also to have occurred, as they are sometimes mentioned; yet each, we believe, has seldom been observed in this climate; and the authorities we have been able to discover, after some search, are not such as we can venture to adduce as satisfactory. Dropsies, from *hydatids*, may undoubtedly occur, and *air* may be separated by the putrefaction of a dead child, or from the matter of foul ulcers; but, beyond such cases, we do not find that the diseases have occurred.

The uterus is sometimes *callous*, *cartilaginous*, containing little *bones*, *calculi*, *concretions* of different kinds, usually imperfect conceptions, or fœtuses, confounded by compression. Numerous instances of a *double uterus* are recorded, and Callisen has described a case of a double uterus and vagina (Collectiones Societatis Medicæ Havniensis, i. 18): in such a person superfetation would not be surprising. See also Eisenmanni Tabulæ Anatomicæ quatuor Argentorati, 1752; and Haller de Renibus Monstrosis et Utero duplici.

The *obliquity of the uterus* was first pointed out by Deventer as the cause of protracted labours; but subsequent authors have considered this cause as visionary. The course of our inquries into the diseases of the uterus has shown, however, that it is not wholly without foundation, though it may be so in the view which he has given. Sandifort (Observationes Anatomico-pathologicæ, i. 107) mentions this deviation from nature, in consequence of the pressure of tumours, and from a different length of the *broad* ligaments. Morgagni speaks of it as rising from lameness, and from the disproportioned length of one of the *round* ligaments (Morgagni de Sedibus, xlviii. 31, 36). Other authors describe it as arising from different causes; but sometimes as the source of difficult labours.

Ruptured uterus is very frequently fatal, and has been represented as constantly so. There is, we suspect, not the slightest chance of escape if it occurs in the fundus; yet we perceive a case quoted from Saviard, whose work upon this subject we have not been able to procure, that, from a rupture in the uterus, the fœtus escaped into the abdomen, and was afterwards discharged by an abscess of the navel. The rupture must, in this instance, have been considerably near the fundus, and the mother have survived. In general, ruptures in the more membranous part of the womb are not fatal, and Dr. Douglas, some years since, collected a number of cases in which women had escaped after such an accident; but, if we recollect rightly, by far the greater number were near the neck. In general, fainting, cold sweats, and a rapid prostration of strength, close the scene in a very few hours.

See De Graf de Mulierum Organis Generationi inservientibus; Winslow's Anatomy; Haller's Physiology, lect. 34 and 35.

UTRICA'RIA, (*uter, a bottle*, from the spherical appendages at the ends of its leaves). See BANDURA.

UTRI'CULUS, (dim. of *uter*). See UTERUS and VAS.

UTRIFO'RMIS ABSCE'SSUS, (from *uter*, and *forma*). See ŒDEMOSARCA.

U'VA, (quasi *uvida*, from its juice) AN UNRIPE GRAPE. See also STAPHYLOMA.

U'VA GRUI'NA. CRANE BERRIES, *vaccinium oxycoccus* Lin. Sp. Pl. 500, are brought from New England, and are reckoned antiscorbutic.

U'VA U'RSI. BEAR'S WHORTLE BERRY, WHORTS, or BILBERRIES, *vaccaria vaccinia, arbutus uva ursi* Lin. Sp. Pl. 566; the BEAR-BERRY STRAWBERRY-TREE, or TRAILING ARBUTUS, is an evergreen, trailing, shrubby plant, with many small, oblong, oval leaves, monopetalous white flowers, with a flesh-coloured border, cut into five sections, and red berries. It greatly resembles the common red wort-bush, from which it may be distinguished by the leaves being more oblong, by the flower having ten stamina, and the berry five seeds. It is found on the snowy hills in Austria and Styria; in Scotland; more plentifully in Sweden, and cultivated in gardens in England.

The leaves are bitterish and astringent, without any remarkable smell, at least when dry. They are celebrated by Dr. Haen in nephritic and calculous complaints, and ulcers in the urinary passages. It sometimes moderates the pain in calculous complaints; but does not appear peculiarly serviceable in any other respect. It has also been recommended in cystirrhœa, diabetes, &c. and almost every other complaint to which the urinary organs are liable, and is sometimes useful in increased sensibility, suppuration, or chronic inflammation of the neck of the bladder. But to secure its efficacy the dose should not be less than two scruples, and sometimes even exceed a dram, though commonly given from fifteen grains to thirty, two or three times a day. The decoction or infusion are trifling and inert. Cullen's Materia Medica; Medical Museum, vol. i. n. 13.

U'VA PA'SSA MA'JOR, a RAISIN, *astaphis, passulæ.* When the grapes dry on the vines they are called *patetæ, patetheisæ uvæ*, the fruit of the *vitis vinifera* Lin. 293. See VITIS.

U'VA PA'SSA MI'NOR. CURRANTS, the fruit of the *vitis vinifera* Lin. 293, var. β. Grapes and currants are supposed to be both demulcent and expectorant.

U'VA CRISPA. See GROSSULARIA.

U'VA LUPINA. See HERBA PARIS.

UVE'A, (from *uva*), *aciniformis*, or *acinosa tunica;* the posterior lamina of the iris, resembling in animals, which the ancients chiefly dissected, *an unripe grape.* The choroides is sometimes called by the name of uvea, and the term iris is affixed to the coloured part.

U'VERO. See GUAIBARA.

U'VULA, (a dim. of *uva*), *cion, gargareon, columella, columna oris, gurgulio interseptum, pinnaculum fornicis gutturalis, plectrum, caruncula.* From the middle of the palatum molle, the uvula hangs down into the throat, acting as a valve, by means of whose different actions we can breathe either through the mouth or the nose. It is of an irregular conical shape, and in part apparently glandular, though a small vermicular muscle, rising from the union of the palate bones, seems to descend to its tip. It is sometimes double, occasionally bifid,

deficient either naturally or from syphilitic affections; frequently relaxed and inflamed, exciting from its increased length a troublesome cough, or, on laying back, a sickness. It is sometimes swollen, apparently from a scrofulous habit, and Hildanus describes it as schirrous; Bartholine as ulcerated. For these reasons, we represented it as in part glandular. In inflammation and relaxation the strongest astringents are occasionally necessary, and sometimes fail, and in such cases the uvula may be punctured, in part, or wholly cut off. Hildanus has described an instrument by which a strong astringent powder may be thrown on it, which may, we think, be occasionally useful. Cent. ii. obs. 20. See Eyselius de Præcipuis Uvula Morbis. See CRASPEDON.

UVULA'RIA, (from its resemblance to the *uvula*). See LAURUS ALEXANDRINA.

U'XOR. See ADAMUS.

U ZIFUR. See ADROP.

V.

VA'CCA MARI'NA, (from the Hebrew *vakar*). See MANATI.

VACCA'RIA, (from *vacca*, agreeable to cows). See UVA URSI.

VACCI'NA, (from *vacca*, a cow), the COW-POX, a disease originally of the cow, and conveyed by inoculation to the human subject, for the purpose of preventing infection from small-pox.

This disease first attracted attention in the county of Dorset, about thirty years since, as a pustular eruption derived from infection, chiefly affecting the hands of milkers, who had milked cows similarly diseased. It had been found to secure persons from the small-pox, and such was the general opinion, that the inoculator who attempted to convey the small-pox to one who had been previously infected with vaccina was treated with ridicule. It was found, on trial, that the attempt was impracticable. At this time a farmer had the sagacity and courage to try the effects of what may be styled artificial inoculation on himself, and succeeded, it is said, completely. Many facts of this kind were communicated to sir George Baker, who, not long before, engaged in an unpleasant controversy respecting the cause of the endemial colic of Devonshire, was unwilling to tread again its thorny paths. Gloucestershire, another dairy county, had witnessed the same disease with similar consequences, and the same opinion generally prevailing in distant counties, affords some proof that it was not wholly visionary. Dr. Jenner of Gloucester, with great judgment, pursued the hint, at first, foiled by not distinguishing the true vaccina; but, after some time, learning by experience the distinctive characters of the genuine pustule, he, in 1798, ventured to publish the discovery, and to recommend the inoculation of vaccina as a substitute for variola.

It is difficult to say whether the eagerness of the friends of vaccination, or the violence of its enemies, on the first appearance of his work, were most blameable, and those, who did not range among the former, were quickly included in the latter class. The more temperate inquirers have generally filled the ranks of the friends of vaccination, while some of its earliest and most violent supporters appear willing to forsake their banners. Such changes are not uncommon in all disputed questions.

Vaccination soon made a rapid progress in every quarter of the world. The new disease was conveyed from the arctic circle to the extremes of Asia and Africa, and the substitute was adopted by the hardy Fin, as well as the blameless Hindoo, and filthy Hottentot, with equal ardor. It is highly probable that, within seven years, more persons have been vaccinated than ever received the variolous infection within six times that period, perhaps within the period of its actual practice. To America it was conveyed with the zealous care of a missionary, and carried along the vast extent of its coast from Newfoundland to the straits of Magellan, and again to that island or continent, the stepping-stone between the old and new world, New Holland, in modern language Australasia. If then vaccination has failed, it is not from the deficient zeal or activity of its partizans. While Dr. Jenner, having produced the babe, waited for events, and seemed for a time unconscious of its improvements, and unwilling to superintend its progress, Dr. George Pearson cherished and eagerly introduced it to the world. To this very able and intelligent physician, the second parent of vaccination, we are greatly indebted for much information respecting this communicated disease, and the distinguishing characteristics of the true vaccine pustule; and the Jennerian Institution, since Dr. Jenner has taken a more active part in the subject he first introduced, has contributed, by careful inquiries and anxious investigation, equally to establish truth, and avoid the errors which may obscure it. Vaccination has, however, continued to excite controversy; but its enemies have appeared uncandid and illiberal in their statements and language; the friends, too warm and zealous. The latter are advocates, often displaying a varnished tale; the former the porter, who abuses those whom he cannot convince. Among the enemies there are, however, careful, candid inquirers, who perhaps receive too credulously unfounded tales; but who are neither obstinate in error, nor deaf to conviction; neither uncandid nor illiberal: unfortunately these are few.

The disease, if it may be called such, is slight and transitory. It is unnoticed by the milkers, except as the pustules interrupt their labours. When conveyed by inoculation the appearances are peculiar and discriminated. We require no apology for selecting the description of Dr. Willan.

"Vaccination has been accounted perfect when recent

lymph has been carefully inserted beneath the cuticle, in a person free from any contagious disorder, and has produced a semi-transparent, pearl-coloured vesicle, which after the ninth day is surrounded by a red areola, and afterwards terminates in a hard, dark-coloured scab.—The form and structure of this vesicle is peculiar. It's base is circular, or somewhat oval, with a diameter of about four lines on the tenth day. Till the end of the eighth day, it's upper surface is uneven, being considerably more elevated at the margin than about the center, and sometimes indented by one or two concentric furrows, but on the ninth or tenth day the surface becomes plane, and in a very few instances the central part is highest. The margin is turgid, firm, shining, and rounded, so as often to extend a little beyond the line of the base. The vesicle consists internally of numerous little cells, filled with clear lymph, and communicating with each other. The areola, which is formed round the vesicle, is of an intense red colour. It's diameter differs in different persons from a quarter of an inch to two inches, and it is usually attended with a considerable tumour and hardness of the adjoining cellular membrane. On the eleventh and twelfth day, as the areola declines, the surface of the vesicle becomes brown in the center, and less clear at the margin. The cuticle then begins to separate, and the fluid in the cells gradually concretes into a hard rounded scab of a reddish brown colour. This scab becomes at length black, contracted, and dry, but it is not detached till after the twentieth day from the inoculation. It leaves a permanent circular cicatrix, about five lines in diameter, and a little depressed, the surface being marked with very minute pits or indentations, denoting the number of cells of which the vesicle had been composed.

"During the progress of the vesicle some disorder takes place in the constitution, and there is frequently on the arms and back a papulous eruption resembling some forms of the lichen and strophulus. These circumstances we should by analogy judge desirable; but they do not always occur, nor are they deemed requisite to ensure the full effect of vaccine inoculation,—that effect, which, as ascertained and announced by Dr. Jenner, is allowed to be more important than any event which the history of medicine can furnish."

We may add to these remarks that, in a few very rare instances, the fever, though short, has been smart, and that in children subject to convulsions, a fit has sometimes occurred. But we have neither seen nor heard of the slightest appearance of danger. It is of more consequence to notice the symptoms of imperfect vaccination, and we shall employ the same authority.

"Vaccination is imperfect, or insufficient, I. When the fluid employed has lost some of it's original properties. II. When the persons inoculated are soon afterwards affected with any contagious fever. III. When they are affected, at the time of inoculation, with some chronic cutaneous disorders.

"I. The qualities of the vaccine fluid are altered soon after the appearance of an inflamed areola round the vesicle: and the fluid, although taken out of a vesicle in the best possible state, may be injured by heat, exposure to air, moisture, rust, and other causes.

"When scabs are formed over variolous pustules, and vaccine vesicles, the matter they afford is often acrid and putrescent, and, if inoculated, it perhaps neither communicates the vaccine-pock, nor the small-pox, but produces a fatal disease, with symptoms similar to those which arise from slight wounds received in dissecting putrid bodies. Should the pustules of small-pox remain entire till the twentieth day of eruption, matter taken from them, even at that period, will sometimes communicate, by inoculation, the disease in it's usual form, though perhaps with considerable virulence. We are, however, now assured on good authority that matter improperly kept, or the thick matter taken from collapsed and scabbing variolous pustules, and used for the purpose of inoculation, does not always produce the small-pox, nor prevent the future occurrence of that disease, although the persons inoculated may have had inflammation and suppuration of the arm, and pains in the axilla, with fever and eruptions on the ninth or tenth day. In like manner if the vaccine fluid employed be taken at a late period, as from the twelfth to the eighteenth day, it does not always produce the genuine cellular vesicle, but is in some cases wholly inefficient, while in others it suddenly excites a pustule, or ulceration, in others an irregular vesicle, and in others erysipelas. Similar appearances are observed, when fluid taken from a perfect vesicle on the sixth, seventh, or eighth day, has been injured, before it's application, by some of the causes above enumerated. In addition to them, I may observe that if the vesicle be ruptured, at an early period, by friction or scratching, the inoculation sometimes proves imperfect. Failures may have also been occasioned by repeatedly puncturing, or draining the vesicle, on two or three successive days. The fluid, which is afterwards secreted into the cells thus exhausted, may, by a difference of properties, or by too much dilution, be rendered incapable of acting fully, either on the person from whom it is taken, or on those to whom it is communicated. Some of the early failures in persons inoculated at different public institutions are perhaps referable to this cause, the demands for vaccine fluid in 1799 and 1800 having been very numerous, the cases to supply them comparatively few.

"II. Eruptive fevers, and other febrile diseases, interfere with the progress of the vaccine vesicle. The measles, scarlatina, varicella, typhus, and influenza, appearing soon after vaccination, either render it ineffective, or suspend the action of the virus, so that, in some cases, the progress of the vesicle is very slow, and the areola is not formed till the fourteenth day or later, and sometimes not at all. Dr. Jenner has recorded the case of a child, on whom the scarlatina, with a sore-throat, appeared on the ninth day of vaccine inoculation. The vesicle enlarged as usual, "yet there was a total suspension of the areola, until the scarlatina had retired from the constitution." In a sister of this patient, the fever and scarlet efflorescence took place faintly on the same day, but suddenly disappeared, the areola having been formed round the vesicle. Four days afterwards, on the decline of the vesicle, the scarlatina anginosa returned with its usual symptoms.

"III. The cutaneous diseases which sometimes impede the formation of the genuine vaccine vesicle, are herpes (including the shingles and vesicular ringworm), dry and the humid tetter, and the lichen, but especially

the porrigo (or tinea) comprising the varieties denominated crusta lactea, area, achores, and favi, all of which are contagious. To these perhaps should be added the itch and prurigo.

"Imperfect vaccination is not characterized by any uniform sign or criterion, but exhibits, in different cases, very different appearances, as pustules, ulcerations, or vesicles of an irregular form. The vaccine pustule is conoidal; it increases rapidly from the second to the fifth or sixth day, when it is of the appearance and size represented, being raised on a hard inflamed base, with diffuse redness extending beyond it on the skin. It is usually broken before the end of the sixth day, and is soon after succeeded by an irregular yellowish brown scab. The redness disappears within a day or two, and the tumour gradually subsides. According to Dr. Jenner, 'It's commencement is marked by a troublesome itching, and it throws out a premature efflorescence, sometimes extensive, but seldom circumscribed, or of so vivid a tint as that which surrounds the pustule (vesicle) completely organized; and (which is more characteristic of it's degeneracy than the other symptoms) it appears more like a common festering produced by a thorn, or any other small extraneous body, sticking in the skin, than a pustule (vesicle) excited by the vaccine virus. It is generally of a straw colour, and when punctured, instead of the colourless transparent fluid of the perfect vesicle, it's contents are found to be opaque.'"

The chief nicety and difficulty of vaccination consists in distinguishing the irregular vesicles, and we shall here apply to the same source.

"I have observed three sorts of these irregular vesicles. The first is a single pearl-coloured vesicle, set on a hard dark-red base, slightly elevated. It is larger and more globate than the pustule above represented, but much less than the genuine vesicle: it's top is flattened, or sometimes a little depressed, but the margin is not rounded or prominent.—The second appears to be cellular like the genuine vesicle, but it is somewhat smaller, and more sessile, and has a sharp angulated edge. In the first the areola is usually diffuse, and of a dark rose-colour: in the second it is sometimes of a dilute scarlet-colour, radiated, and very extensive, as from the sting of a wasp; at other times it has the form and colour exhibited. The areola appears round these vesicles on the seventh or eighth day after inoculation, and continues more or less vivid for three days, during which time the scab is completely formed. The scab is smaller and less regular than that which succeeds the genuine vesicle; it also falls off much sooner, and, when separated, leaves a smaller cicatrix, which is sometimes angulated.—The third irregular appearance is a vesicle without an areola.

"The vaccine pustule, and ulceration, may sometimes arise from the insertion of effete or altered virus; but they mostly occur in persons labouring under the eruptive complaints formerly mentioned.

"The irregular vesicles are produced by some of the causes already enumerated.—The vesicle without an areola, takes place if the person inoculated have previously received the infection of the small-pox, or if he be affected with some other contagious fever, during the progress of vaccination."

These irregular vesicles are sometimes a security from small-pox, and the matter which they produce will occasionally excite a genuine vesicle, but they should in no instance be depended on.

It was for a time supposed that vaccina and variola were similar diseases, but that from accidental circumstances the former was the milder. It was cutting the knot rather than explaining the source of the susceptibility being destroyed, but the very existence of this susceptibility, not called into action for four thousand years, is a problem of much greater difficulty. It was found, however, on examination, that, when each disease was introduced at the same time, the one did not check the other; both proceeded in their own way, but the vaccina modified a little the appearance of variola; and it seems, from Dr. Willan, that it modified the pustule in the manner which variolous eruptions, after vaccination, sometimes assume.

The great point, however, in dispute is, whether the most perfect vaccination is, in every instance, a complete security against variolous infection? We must in justice reply that it is not. The question will recur, to what extent then is it so? The general popular opinion in distant counties is, we have said, a strong presumption of the dependance to be placed on the security; and the immense number vaccinated, particularly in the army, where exposure to variolous contagion is so frequent and unavoidable, would, we think, have given a considerable shock to the fabrick, if its foundation was *very* insecure. Another presumption in favour of the security of vaccination is, that those who have comparatively inoculated the fewest, have had the greatest number of succeeding variolæ; while in the great public institutions, where the numbers are often estimated by ten thousands, the failures appear to have been few. Great stress has been laid on the number and character of its supporters, compared with those of its antagonists; but this argument would have merited more attention had not these gentlemen appeared so early in its support, when the merits of the discovery must have been equivocal. We shall endeavour, however, to state this question in its different views, with all the impartiality in our power.

Cow-pox is certainly a security to a very considerable extent, and for some, though an indefinite, time. Small-pox has occurred within a few months, but most frequently, if we can say "*frequently*" respecting the few undisputed cases which have occurred, within about three or four years. From the number of recorded cases of subsequent variolæ, we must detract considerably in consequence of the suggestions of prepossession, of ignorance, and, we fear, designed misrepresentation. We must detract too a large proportion from the careless report of the appearances of the vaccination, when the genuine vesicle had not been distinguished, or when it was incuriously observed. If we would establish the position that vaccination secures from a *disease*, and not from a *name*, we must still deduct those cases where the variolæ are inconsiderable in their number, unimportant from the mildness of the inflammation or the attendant fever. We shall still find some authentic cases of small-pox as a violent disease, after the most perfect vaccination; and we are very much inclined to suspect, that some circumstances essential to the security, have

yet escaped the attention of the most sagacious observers. But let us for a moment examine our present circumstances in this respect.

Had we been offered, twenty years since, an easy means of guarding against small-pox for an indefinite period, though the security might not in one half of the instances have been unexceptionable, would it not have been received with avidity? would not the pregnant woman have seized on it in her emergency? would not the mother have caught at it while her child was exposed to variolous infection during dentition? would not the hypochondriac, secluded for years from an imaginary apprehension of variola, have gladly accepted a few months only of emancipation? would it not have been a temporary security for the scrofulous infant, till the disease by advancing years had lost a portion of its virulence? If we could gain no more, we should have considered mankind as having received an inestimable boon. We have now more. We possess a substitute, which, admitting every possible claim, secures one in 800, and which, within moderate computation, secures from a violent and dangerous disease, one in 20,000. Yet we eagerly continue a contest, because it is not an infallible security.

Supposing we gain only this temporary safety, we do not purchase it at the expence of the child's health, of pain, or of danger. In itself it is the most trifling of complaints; it is not pustular, and conveys no infection. In its consequences it is harmless; for, after all that we have heard of the cow-faced boy, of cow-pox mange, the ridiculous (we ought to use a harsher term) narratives of dreadful consequences, the records of public institutions offer no increase of cutaneous diseases, and no new species. Every person may be in possession of the facts; there can be no delusion; and though anomalous cutaneous complaints have sometimes, though very rarely, occurred after vaccination, every practitioner of experience is too well accustomed to such appearances as, at once, to accuse the preceding disease. Of three children inoculated in one family, two with variolous and one with vaccine matter, the two former were affected with anomalous cutaneous eruptions, and the last escaped. Yet one of the former had experienced the small-pox in a very severe degree. That it is an exciting cause of scrofula we now know to be wholly without foundation.

But we think the advocates for the cow-pox may assume a higher tone, and assert that the variolous disease is, in a great degree, conquered by its substitute. Prevented in a large proportion, disarmed of its violence in a still larger, and in a certain (indeed no inconsiderable) degree a perfect security, its supporters may justly claim a title to the civic crown, *ob servatos cives*; nor will it require any very strong arguments to show, that, admitting the degree of security which its enemies are willing to allow it, could vaccination be universally practised, small-pox must be soon unknown. If actually introduced at a subsequent period, it would spread no more than a putrid epidemic under a well-regulated police. A nurse or an attendant may be affected, and it would then be heard of no more. In a proper place this argument may be more strongly urged, and those who oppose it called on to account for the mischief they are unconsciously and inadvertently guilty of. It may be said that we are now advocating the question, but we are conscious only of having reasoned fairly from undisputed premises, or at least from premises whose foundation have been generally admitted. If we have erred, it is from no violent, no *early* prepossession in its favour.

Respecting the source of the vaccine poison we need say little. Dr. Jenner has unfortunately attributed it to the greasy heels of the horses, which the milkers had been dressing. We say "unfortunately," since the nauseous idea, which it conveys, disgusts us with the purest of beverages. The question was, at least, unnecessary, and had it the smallest foundation, those who had handled the greasy heels, without milking, would have been affected; and in dairies, where women only are employed, it would be unknown. Neither is the case, and every attempt to produce the cow-pox, from this matter, has failed, except in a solitary and an equivocal instance. Whence then does it proceed? May not the poisonous drop be infused into the vaccine as well as into the human constitution? or to adapt ourselves to the pathology of others, may not the susceptibility of the vaccine teats require as much modification as the human skin? But it is idle to pursue a subject which must mock our investigation, and which certainly admits of no practical application. We know how to obviate the consequences, and this is sufficient.

The inoculation of vaccina is an operation of more delicacy than was at first suspected, and should never be considered as safe, except under the almost daily inspection of a man of experience. The virus is easily deteriorated, and then becomes a common poison, capable of producing a foul sore, an axillary tumour, fever, and its consequences. The same changes appear to have taken place in a less degree at an advanced period of the disease; and though we have the testimony of very respectable authors that it succeeds from the tenth to the twelfth day, it should generally be taken before that period. It is injured by even a slight degree of heat, so as to be in danger from the burning wax with which the packets are sealed, very certainly by being carried in the breeches pocket. To be certain of success the child, from whom it is to be taken, should be present, and the cuticle raised by a clean lancet before introducing the infected one. If on glass, it should be diluted in the minutest drop of cold water, and mixed by the point of the lancet itself. By these precautions failure is very uncommon. In this way we have succeeded at once in a child who had resisted six former attempts, and in another who had not received the infection from five. The puncture should be in a single point, that the round distinguishing form of the vesicle may not be most slightly modified.

Mr. Bryce has offered a satisfactory method of ascertaining whether the constitution is affected when the fever is inconsiderable. This is to inoculate a second time after five or six days, when this second wound if the constitution is affected, will hasten to maturity, and arrive at it as soon as the first inoculation. Mr. Hugo, a very intelligent and judicious apothecary at Crediton, has followed the same plan with equal success. If this second inoculation is performed later, about the seventh day, the pustule, we are informed by Mr. Pearson, will begin to die away as soon as the efflorescence comes on around the first. A second vaccine infection after the

disease has passed, produces either a spurious pustule or only a common inflammation.

See Dr. Jenner's Enquiry and farther Observations; Woodville's Series of Inoculations, and on Cow-pox; Willan on Vaccine Inoculation; Moor's Reply to the Antivaccinists; Dr. Pearson's Statement of Evidence; Medical Review; Medical and Physical Journal, passim, in every number, and almost in every page.

VACCI'NIA, (quasi *baccinia*, from its berries). The appellation of several sorts of the *vitis Idæa*, and *uva ursi*.

VACCI'NIA NUBIS VULGARIS, VACCINIUM LANCASTRENSE NUBIS. See CHAMÆMORUS.

VACCI'NIA PALUSTRIS. See OXYCOCCUS.

VA'GA, (from *vagus, irregular*). A wandering intermittent, returning at more than ten days from each fit. Its existence is now denied.

VAGI'NA. A SHEATH; *caulis*: the passage from the external pudenda to the mouth of the uterus, about five or six inches in length and two in diameter, though in its contracted state scarcely exceeding three inches. Its direction is upward and backward; its inside very vascular and villous, and the villi full of vessels and nerves, contracted at its orifice, as is said, by a sphincter, and in its whole length by the levator ani. Each side of the anterior portion of the vagina is covered externally by a thin broad expansion of vessels called the plexus retiformis; and these two planes run down on each side of the clitoris behind the nymphæ, covering the urethra like a collar before they are spread on the vagina. This plexus is capable of being erected, and in coition is necessarily compressed. In substance it is a membranous tube, lying immediately before the rectum, collapsed and compressed between it and the bladder. The structure of the vagina is not only very vascular, but on the inside it is very rugous, particularly at the fore and back parts; though by frequent parturition these rugæ are in a great degree obliterated. Some authors have described muscular fibres in it, but we perceive no irritability, and it seems never subject to spasm; even those which have been described as forming its sphincter are not strictly circular. The peritonæum covers only the upper and posterior part. The vagina passes beyond the os uteri, which hangs into it, and is joined to the cervix, but when the latter is dilated the uterus and vagina form a continued canal. It is sometimes too narrow, from conformation, or in consequence of a laceration after severe labour, of ulceration, erosion, or the use of styptic applications. The cure may be attempted by emollient fomentations, the steams of warm water, and by introducing a small tent of compressed sponge. If these fail, recourse must be had to the knife: though in the simple contraction of the cavity of the vagina, this expedient is seldom necessary, often dangerous; and should never be attempted until every other method hath failed. The dilation has very often been accomplished by labour pains. Sometimes from a natural defect the vagina is either imperforated altogether, or a foramen only remains sufficient to transmit the menstrual blood. If, from a coalition of the parietes of the vagina, the passage be entirely shut up, an attempt to force it would be vain. The orifice, in the latter case, will afford a proper direction for the knife; but the operator must be cautious not to mistake the urethra for the passage into the vagina. When the vagina is impervious altogether, the uterus has been sometimes found wanting, when double it has led to a double uterus.

Fleshy, steatomatous, fungous, or polypous tumours arise from all parts of the vagina. They happen to women at every period, but most frequently towards the decline of life; and are more difficultly discovered or removed as their origin is high in the vagina. They sometimes are tender and mucilaginous, like those in the nose; at others firm and solid; occasionally their bases are large, but they generally adhere by a small neck. Like schirri, they sometimes continue indolent for many years, and degenerate often into cancer. In their mildest state they are attended with a leucorrhœal discharge, and sometimes with profuse and dangerous floodings. They are sometimes confounded with hernial tumours and prolapsus uteri, errors which should be carefully guarded against. Polypi, when curable by an operation, are most safely removed by ligature, as they are often supplied with large blood-vessels; and for fixing the ligature the fingers of the operator will be sometimes sufficient. In other cases, Dr. Hunter's needle, or Mr. Levret's double canula, for applying and fixing the ligature over the tumour, are the most simple and successful expedients. The latter is a piece of flexible gold or silver wire, passed through a double hollow probe in the form of a noose, conveyed into the vagina, and carried over the tumour, till it reaches the base. The ends of the wire must be gently drawn, or it must be twisted round as tight as the patient can easily bear: the canula must afterwards be fixed to the thigh, and the wire tightened every day as it grows slacker. From the stoppage of the circulation in two or three days the polypus will drop off. In fixing the ligature the operator must be cautious not to mistake the tubercle of the os tincæ for the polypous tumour. See Hamilton's Outlines.

The vagina is sometimes inverted, in consequence of a relaxation of the upper portion, which consequently falls through the strait at its extremity. A case is mentioned in which this organical disease impeded delivery, when the stricture was dilated with a knife, and the wound healed. A similar relaxation, from dropsy, is recorded in the Medical Communications, i. 12. Morgagni has observed the same disease in brutes (De Sedibus, &c. xlv. 89 and 11). The vagina is sometimes ruptured from labour, and Dr. Goldson has published an extraordinary case of its laceration. Smellie, in his Collection of Cases, mentions its separation from the uterus; and it is recorded that it has been ruptured in coition (Plazzoni de Partibus Generationi inservientibus). The sides are sometimes concreted, either naturally, or from wounds, from scalds, and difficult labours. We remember a case where the mother of a large family had a tumour at the bottom of the abdomen of a peculiar kind, whose nature was not suspected till she informed us that she had had a hard labour, and not menstruated since. On further examination it appeared that a part of the symphysis of the pubis was exfoliated and the vagina accreted. On cautiously perforating in the direction of the canal, a large quantity of fluid blood was discharged, and the tumour subsided. The blood was *fluid*, though it was the accumulated menstruation of several months. The vagina is sometimes in-

flamed, suppurated, and gangrened, but true abscesses are not common in it, and cancer of the vagina peculiarly rare. We have, however, seen an instance of it, which from the pain, the discharge, and the peculiar ragged feel of the sore, could not be mistaken.

Contracted vaginæ are relieved by sponge tents, or bougies, gradually enlarged. Cicatrices yield in time of labour, and though they delay, do not impede the birth.

The appellation is given to the capsula Glissonii, called *vagina portæ*; to a coat of the testis, *vaginalis tunica* (see Testes); to a coat of the œsophagus, of the spinal marrow, and of the nerves when it appears to be a production of the dura as well as the pia mater. The *vagina* of tendons is a loose sheath, formed of cellular membrane, secreting an unctuous fluid, which sometimes hardens and forms the tumour styled a *ganglion*.

Vagi'na. In botany, the sheath or covering of a bud; or a membrane investing a stem; hence

VAGINA'LES. The name of the 27th order in Linnæus's Fragments of a natural method in his Philosophia Botanica.

VAGI'NA PO'RTÆ. See Capsula communis Glissonii.

VALA'NIDA. See Fagus.

VALERIA'NA, (from *Valerius, its supposed discoverer*). Valerian. In warmer climates the *setwall*, or *great garden-valerian*, is preferred; but in colder the *valeriana sylvestris major* of Bauhine, *great wild valerian*, *valeriana officinalis* Lin. Sp. Pl. 40. This is a plant with channelled stalks, the leaves in pairs; each leaf composed of a number of long, narrow, sharp-pointed segments, indented about the edges, of a dull green colour, set along a middle rib, and terminated by an odd one; producing on the tops of the stalks umbel-like clusters of small monopetalous flowers, which appear in May, June, and July, each followed by a single naked seed, winged with down. The root consists of tough strings, with numerous small threads matted together, issuing from one head, of a dusky brownish colour approaching to olive. It is perennial, and grows wild in dry mountainous places.

Valerian roots when dry have a strong, and to many an ungrateful odour, a warm, bitterish, subacrid taste; the degree of each marking their genuineness. The roots have often a disagreeable smell from the urine of cats: and sometimes the roots of a species of crowfoot are mixed with them, which may be discovered by a caustic taste on chewing. The roots if not taken up at a proper season and properly preserved become inert.

The powdered root impregnates both water and alcohol strongly with the smell and taste; water distilled from it smells strong of the root, but no essential oil separates, whatever be the quantity employed. The watery extract is strong, disagreeably sweetish, and a little bitter; the spirituous extract agreeable, and nearly resembles the root.

As a medicine, these roots are excellent antispasmodics, and rank amongst the mildest of the fetids. The powder hath been extolled in epilepsies, and from ℈i. to ʒi. are given three times a day; but it hath been given to the extent of two ounces in the day by the sceptics in the powers of this medicine, without effect.

Dr. Cullen has found it useful in epileptic, hysteric, and other spasmodic affections, and most so when given in substance, and in large doses. It has been most successful in cases proceeding from increased mobility, and irritability of the nervous system. We have found it in such cases most successful when combined with bark; and, having relieved fits by their combination, we have found them to return when either separately was given.

Valerian is said occasionally to procure sleep when opium has failed. It is also supposed to be diaphoretic, diuretic, an emmenagogue and anthelmintic; but has little claim to these virtues.

When the flavour disgusts, a little mace renders it more agreeable; and next to the powder, a strong tincture made with proof spirit is most effectual.

The tincture of valerian of the college is made by digesting four ounces of the root of wild valerian, coarsely powdered, in two pints of proof spirit, with a gentle heat for eight days. The dose two to four teaspoonfuls in nervous languor and flatulence. If to ℔i. of this tincture, ℥ij. of the diluted vitriolic acid be added, it proves an useful remedy in those headachs which affect the studious, strengthens the stomach, relieves flatulence and spasm.

In the volatile tincture of valerian the menstruum is the compound spirit of ammonia, in the same proportions. If made doubly strong, it is an excellent remedy in similar cases, acting more suddenly and effectually: the dose is from forty to eighty drops. See Neumann's Chemistry; Medical Musæum, vol. i. n. vii; Lewis' and Cullen's Materia Medica.

Valeria'na campe'stris inodo'ra major, et valerianella. See Lactuca agnina.

Valeria'na ce'ltica. See Nardus celtica.

Valeria'na phu of Dioscorides and Linnæus Sp. Pl. 46, supposed to be useful in sciatica and epilepsy.

VA'LGUS, (quasi *falcus, crooked*). Bow or bandy-legged; *blæsus*. Some children are bow-legged from their birth, others become so if set on their feet too early, while still weak. The tibia is sometimes crooked; the knees often distorted from a fault in the ancle; the feet turned inwards *(vari)*; and in others outwards *(valgi)*. The best method of preventing these disorders in weakly children is to exercise them regularly, but not violently, by dancing in the arms, and setting them on their feet, for a short period only, while they are supported by the arms. Boots of strong leather, with supports between the knee and ancle, so that the weight presses but lightly on the tibia, have been used; but cold bathing, carefully and duly regulated; exercise, with a moderately strengthening diet, will enable nature most effectually to repair the error. Hildanus, Le Clerc, Solingen, and Heister's Surgery. See Cyllos.

VA'LLUM, (*vallus, a hedge-stake*, from the regular disposition of the hairs). The supercilium, or eyebrow, the most prominent part of which is called *geison*, a term applied to the eaves of houses. Also a species of bandage.

VA'LVA, (from *valvæ, folding doors*). A valve, whatever opens and shuts over the mouth of a vessel.

In anatomy, a membrane which opens to admit the blood, and shuts again to prevent its regurgitating. See Valvula.

VA'LVULA, (dim. of *valva*). A small valve, a kind of doubling of the internal coat of red or lym-

phatic veins, which, when the flow is in the proper direction, is applied to the sides, but when the fluid regurgitates is filled. As they are in pairs, opposite each other, they close the cavity of the vessel.

VA'LVULA. The outer coat, shell, or covering of a capsule, or the several pieces which compose it. An entire pericarp is said to be univalve; if divided bivalve, trivalve, &c. The leaflets, composing the calyx and corolla in grasses, and the substances or scales which close the tube of some flowers, are also styled *valves*. See CAPSULA.

VA'LVULÆ CONNIVE'NTES, are loose circular folds, productions of the villous coat, chiefly in the small intestines towards the stomach. They increase the secreting and absorbing surfaces, as well as retain the food till the digestion is completed.

VA'LVULA EUSTACHII, the semilunar valve, which separates the right auricle from the inferior cava.

VA'LVULA MA'GNA SY'LVII. See CEREBELLUM.

VA'LVULA MITRALES; SEMILUNARES; TRICUSPIDALES; et TRIGLOCHINES. See COR.

VA'LVULA NO'BILIS. See COR.

VA'LVULA CŒ'CI; CO'LI; I'LII; et TULPII. See COLON.

VA'LVULA PALA'TI. See PALATUM MOLLE.

VAMPYRI, VAMPARISMUS. A VAMPYRE is a large bat, which sometimes insinuates its teeth through the skin of those who sleep insecurely, without awakening them, assisted, it is said, by the refreshing coolness which it conveys by the fluttering of its wings. This circumstance has suggested the strange story that men are sometimes permitted to wander near tombs and suck the blood of those who are buried. We perceive that, within these twenty years, this ridiculous idea prevailed in Germany, even among those who assumed the title of philosophers. Jason a Pratis supposed that the vampyres might return to their wives and claim the privilege of husbands; but it is a work of a dark æra, 1531.

VANI'LLA; *banilia, aracus aromaticus, epidendrium vanilla* Lin. Sp. Pl. 1347; VANELLOES; are the fruit of a climbing plant in the Spanish West Indies, used to give an agreeable flavour to chocolate; extolled as imparting cheerfulness and hilarity. See Medical Musæum, vol. iii. p. 342, &c.

VAPORARIUM, (*à vapoure*). A VAPOUR-BATH. (See BALNEUM.) We repeat the term to mention the proposal of a late author, who thinks the vapour more effectual if the pressure of the atmosphere be removed. The vessel therefore containing the limb is previously exhausted by an air-pump. The invention, which was published by Dr. Blegborough, is claimed, we apprehend, by Mr. Smith of Brighton, who first employed it for sucking poison from wounds. We have given no plate of the machine, for those who have tried it do not speak very warmly in its favour.

VAREN. A disease first described by Henry a Bra, afterwards by Forestus and Heurnius. It was styled a new one; but seems to have been only a lumbago with obstinate costiveness.

VARICE'LLA, (a dim. of *variola, the small-pox*); the CHICKEN-POX; *variola lymphatica*. Dr. Cullen places this disease in the order *exanthemata*, defining it a synocha. After a slight fever of short continuance spots break out, which somewhat resemble the pustules of the small-pox, but hardly advance to suppuration; and after a few days dry away in scales, without leaving any mark. The pocks break out in some cases without any previous illness, in others are preceded by a slight chilliness, lassitude, cough, broken sleep, wandering pains, loss of appetite, and feverishness for two or three days. On the first day of the eruption they are reddish; but on the second, on the top of each is usually a very small bladder, about the size of a millet seed, sometimes full of a watery and colourless, sometimes of a yellowish, liquor. On the second, or at the farthest on the third, day from the eruption, those pustules which are not broken seem arrived at maturity; and those which are fullest of the yellow liquor resemble the genuine small-pox on the fifth or sixth day, especially when a larger space than usual is occupied by the extravasated serum. In general soon after the vesicle rises, its tender cuticle is burst by accidental rubbing, or to allay the itching; and a thin scab is formed at the top of the pock without maturating. In those which escape, the drop contained in the vesicle grows yellow and thick, and dries into a scab. On the fifth day of the eruption almost all are dried and covered with a slight crust.

The chicken-pox may be distinguished from the small-pox by the early appearance of the vesicle, full of serum upon the top of the pock, their incrustation on the fifth day, and the slight inflammation which surrounds them. The fluid appears to be only a serous exhalation. As the variolæ, which have occurred after vaccination, resemble the chicken-pox, and in turn the varicella has been mistaken for subsequent variola, we shall select a more particular description from Dr. Willan's work.

"There are three varieties of the varicella, which, from the different forms of the vesicles, may be entitled the lenticular, conoidal, and globate, distinguished in different counties by the names of the *chicken-pox*, the *swine-pox*, and the *hives*. In the south, both the latter varieties are called *swine-pox*.

"1. The lenticular varicella exhibits, on the first day of eruption, small red protuberances, not exactly circular, and having a flat shining surface, in the centre of which a minute vesicle is soon formed. This, on the second day, is filled with a whitish lymph, and it then somewhat resembles a miliary vesicle, but is not so prominent, so tense, or so regularly circumscribed; its diameter is about the 10th of an inch. On the third day, the extent of the vesicles continues the same, but the lymph they contain becomes straw-coloured. On the fourth day, many of the vesicles are broken at the most prominent part; the rest begin to shrink, and are puckered at their edges. Few of them remain entire on the fifth day, but the orifices of several broken vesicles are closed, or adhere to the skin, so as to confine a little opaque lymph within the puckered margins. On the sixth day, small, thin, brown scabs appear universally in place of the vesicles. The scabs, on the seventh and eight days, become yellowish, and gradually dry from the circumference towards the centre. On the ninth and tenth days they fall off, leaving, for a time, red marks on the skin, without depression.

The eruption is generally first observed on the breast and back, and afterwards on the face and extremities. As fresh vesicles arise during two or three successive

days, and go through the same stages as the first, the duration of the disease is sometimes longer than I have stated above.

"2. In the conoidal varicella the vesicles rise suddenly, and have a hard inflamed border. They are, on the first day of their appearance, acuminated, and contain a bright transparent lymph. On the second day, they appear somewhat more turgid, and are surrounded by more extensive inflammation than on the preceding day; the lymph contained in many of them is of a light straw-colour. On the third day, the vesicles are shrivelled; those which have been broken exhibit, at the top, slight gummy scabs, formed by a concretion of the exuding lymph. Some of the shrivelled vesicles, which remain entire, but have much inflammation round them, evidently contain on this day purulent fluid. Every vesicle of this kind leaves, after scabbing, a durable cicatrix or pit. On the fourth day thin dark-brown scabs appear intermixed with others, which are rounded, yellowish, and semitransparent. These scabs gradually dry and separate, and fall off in four or five days.

"A fresh eruption of vesicles usually takes place on the second and third day, and as each set has a similar course, the whole duration of the eruptive stage in this species of varicella is six days; the last formed scabs, therefore, are not separated till the eleventh or twelfth day.

"3. In the swine-pox or hives, the vesicles are large and globated, but their base is not exactly circular. There is an inflammation round them, and they contain a transparent lymph, which, on the second day of eruption, resembles milk-whey. On the third day, the vesicles subside, and, as in the two former species, become puckered or shrivelled. They likewise appear yellowish, a small quantity of pus being mixed with the lymph. Some of them remain, in the same state, till the following morning, but, before the conclusion of the fourth day, the cuticle separates, and thin blackish scabs cover the bases of the vesicles. The scabs dry and fall off in four or five days.

"The eruption is usually completed in three days, but I have sometimes observed a few fresh vesicles on the fourth day; in which case, therefore, the eruptive stage occupied eight days."

See Medical Transactions, vol. i. art. xvii; Cullen's First Lines, edit. 4. vol. ii. p. 171.

VARICIFO'RMES PARASTA'TÆ, (from *varix, a distended vein*, and *forma, likeness*); are convoluted vessels contiguous to the epididymides, appearing tortuous like varices.

VARICOCE'LE, (from *varix, a distended vein*, and *κηλη, a tumour*). See CIRCOCELE.

VARI'CULA, (a diminutive of *varix*). An intumescence of the veins in the tunica adnata of the eye, when caused by black blood. Severinus.

VARI'ETAS; in botany means the changes produced in plants raised from the same parcel of seeds, from climate, situation, or soil; and the difference of their appearance is either in magnitude, plenitude, shape, colour, taste, or smell. In nosology a disease somewhat varied by accidental circumstances, is styled a *variety*.

VARI'OLA, (*quia variat corpus*). The SMALL-POX; *bothor*; placed by Dr. Cullen in the order *exanthemata*, who defines it a contagious inflammatory fever attended with vomiting, and pain upon pressing the epigastric region. On the third day an eruption of inflammatory papulæ begins, and is finished on the fifth, which in the space of eight days run into suppuration and at length form scabs, often leaving behind them depressed cicatrices, or pits in the skin.

The *variola discreta* is that kind where the pustules are few, distinct, round, circumscribed, and turgid; the fever ceasing on the eruption. In the confluent kind the pustules are numerous; running together; irregular at their bases; flaccid; slightly elevated; the fever continuing after the eruption. In general it is an acute, eruptive, infectious disease, of a peculiar kind, accompanied with inflammation of cuticular pustules, terminating in suppuration. This disorder was first described by Rhazes, about the end of the ninth or the beginning of the tenth century, in a manner so complete that little or nothing was added for five hundred years after: he also used the cool method in the management of it. Rhazes quotes as his predecessor Aaron, an Alexandrian physician, who wrote A. D. 622. Sydenham, the next author who merits notice, observed that the slower the eruption the more favourable the disease. He greatly improved the management in the early period, that is, to the sixth or seventh day. At this period he observed that the pulse became regular, and all the pustules were full over the whole body; the urine was of a proper colour, or thick, the eyes cool, and free from the fiery lustre before observable; that the secondary fever came on at first slowly, but soon the eyes were inflamed and watery, a delirium supervened, the urine was pale, the pulse quick and hard, throat sore, &c. In this state the patient is taken out of bed, the air kept cool, the feet put into warm water, an opiate given, and repeated if necessary till the delirium abates.

Helvetius observed the utility of purging when the dangerous symptoms came on, which Sydenham had remarked in the last stage; and Dr. Freind introduced the practice in England. Boerhaave ventured to restrain the too sudden eruption of the pustules, and commends the attempt to cure the small-pox without permitting the suppuration to come on. Many other useful observations have appeared, but they are almost superseded by the practice of inoculation: we trust they will be wholly so, by more general vaccination.

When the small-pox is epidemical, it usually begins about the vernal equinox. Sydenham observes, that when irregular and dangerous it begins sooner, as in January or February. Boerhaave thinks that if the disease arises in a place where it hath been six years absent, and appears in January or February, the following summer will be distinguished by a fatal kind; but if it first appears in May, it will be of a gentle kind.

The distinct small-pox begins with a chilliness and shivering, immediately followed by extreme heat, violent pain in the head and back, vomiting in adults, though not in children, a tendency to sweat, pain just under the scrobiculus cordis, if but gently pressed, sleepiness and stupor, sometimes convulsions, particularly in children; and if they happen after dentition is completed, small-pox may be always apprehended, if the child has not been previously affected with such complaints. If, for instance, a convulsion fit attacks in the evening, the small-pox often appears on the morn-

ing following; and the small-pox immediately succeeding such fits are usually mild.

The distinct eruptions of the small-pox usually appear on the fourth day, inclusive, from the beginning of the illness; sometimes a little later, but seldom sooner, and the febrile symptoms then usually abate, or even disappear; but adults are subject to violent sweats, however lightly they are covered; and this disposition continues until the pustules begin to ripen, when it vanishes spontaneously: this sweating prognosticates a distinct sort. The eruptions are at first of a pale red, as large as the head of a small pin, appearing here and there on the face, afterwards on the neck, breast, and body: and, during this stage of the disease, the throat is often affected with a soreness that increases as the pustules arise. These grow every day fuller, and inflame the skin; for about the eighth day from the beginning of the disease, the spaces between the pustules begin to grow red, and swell in proportion to their number, with a throbbing pain, which continually increases, and, in the progress of the disease, the eyelids are so filled and distended as to close the eyes, and this tumour looks like a shining inflated bladder drawn over them. The blindness comes on sooner if many pustules fix on the eyes at the beginning of the eruption. Immediately after the face, the hands, the fingers, the body, and the feet swell, in proportion to the number of eruptions. The pustules on the face now begin to grow rough and whitish, the first sign of a commencing suppuration, and they gradually discharge a yellow matter in colour resembling a honeycomb. The inflammation of the hands and face, in the mean time, comes to its height, the spaces between the eruptions are of a pretty florid colour, when mild and genuine nearly resembling that of a damask rose. As the pustules in the face appear rougher and yellower as the suppuration advances, so those of the hands and other parts appear smoother and less white. On the eleventh day the inflammation and swelling manifestly abate; and the eruptions, both of the face and the rest of the body, now mature, and nearly the size of a pea, dry and scale off, and, in this kind of small-pox, wholly disappear on the fourteenth or fifteenth day; but the eruptions on the hands remain a day or two longer, and, instead of scaling, burst. The pustules on the face are succeeded by a scurf, or branny scales, and those sometimes by pits or marks; for it is a distinctive character of a small-pox pustule to have a slough in the middle.

The confluent small-pox, *vesiculæ Divæ Barbaræ, variola Japonica*, is attended with similar but more violent symptoms, particularly fever, anxiety, sickness, vomiting, and pain in the head and back. The patient does not readily sweat, but a looseness sometimes precedes, and continues a day or two after the first appearance of the eruption. The confluent sort often comes out on the second, generally on the third, day, and the sooner they appear the more confluent they are; nor are they ever retarded but by some other violent topical inflammation. Nausea, a more violent pain in the back, drowsiness, and great debility, are constant symptoms of this variety.

The eruption often comes out like an efflorescence, without any distinguishing marks; and, when the pustules can be distinguished, they soon fill at the top, with a yellowish serum. This must not be confounded with maturation, for the confluent variola seldom suppurates regularly or properly. The fever does not go off, on the eruption, as in the former variety, but frequently continues so mild as to give little intimation of danger for some days. The head is loaded, and the eyes red, but often with little delirium or coma. As the distemper increases, the pustules of the face do not rise so high as those of the distinct kind, but, running together, appear at first like a red bladder, and this swelling comes on more early than the salutary swelling of the distinct sort: at last they appear like a thin white pellicle, closely adhering to the face, and rising a little higher than the surface of the skin. In the milder kinds of confluent variola we can distinguish innumerable pustules rising above this pellicle, assuming a yellow hue, and maturating, though imperfectly; but they are small, and the tops are not only flatted but often concave. After the eighth day, the usual pellicle grows gradually harder, and inclines to a brown, and not to a yellow colour, as in the distinct kind. The roughness and colour of the skin daily increase, until at length the pellicle falls off in large scales; but when the disease hath been severe it usually sticks to some parts of the face till after the twentieth day. The more violent the disease, the nearer the eruptions, as they ripen, incline to a dark-brown colour, and the longer they continue, if untouched; but in proportion as they are distinct the yellower is their hue, and the sooner they scale off. When the pellicle first falls off, no roughness is left; but the whole surface is ulcerated, and the cicatrices are proportionally numerous and contracted. The whole features are changed, and the perspiratory organs experience some modification, which leaves an unpleasant smell during the remainder of life. In the confluent small-pox, the eruptions on the hands and feet are larger and less numerous than those of the other parts, and are gradually less as they approach the body, and head, where they are chiefly confluent. Peculiar to the confluent small-pox is a salivation in adults, and a looseness in children; the former always attends, the latter more rarely. The spitting begins as soon as the eruption appears, and sometimes a day or two after; the matter is at first thin, and easily and plentifully expectorated; but towards the eleventh day the saliva becomes viscid, and is voided with difficulty; the patient is thirsty, and from this time the salivation generally stops; though sometimes, but very rarely, it again returns. On the same day the swelling of the face begins to abate, and in the more favourable cases the swelling of the hands begins. The looseness of children, however, continues.

The period of danger in the confluent small-pox is when the saliva becomes viscid, viz. on the eleventh day. The patient then becomes comatous and sinks apparently from debility, or purple spots come on, with hæmorrhages from dissolved blood, terminating the disease from the violence of the discharge.

The danger of this disease is proportioned to the number of the pustules on the head, and particularly on the face. If the pain in the head and eyes, which usually goes off on the appearance of the eruption, continues through the several stages of the disease, it leaves some complaint in these organs, in young children, terminating in hydrocephalus. A stoppage of the salivation, irregular and unexpected rigors, bloody

urine, and a discharge of blood from the lungs, are usually fatal symptoms; but a convulsion fit preceding the eruption in children, and a sweating coming on at the proper time in adults, are tokens of the distinct and mild sort.

The confluent small-pox often leaves the most dangerous and disagreeable complaints. The constitution is in general greatly debilitated, the tendency to scrofula excited to action, lurking vomicæ in the lungs inflamed, and viscera either infarcted, or suppuration brought on in previous infarctions. It can scarcely be said that it ever leaves the constitution without at least the seminia of violent disease.

It was for a time doubted whether the child in the womb could be infected by the mother's disease, and many disquisitions respecting the connection of the mother and child have been brought forward to approve or oppose the opinion. Facts have, however, decided that such infection is not common. When the disease of the mother, however, is violent, the fœtus is affected apparently at the time of the retrocession of the eruptions, when the matter accumulated in the pustules is returned to the habit. Children have been born with the marks of small-pox, which must have originated about that period, or, when excluded by premature labour, in consequence of the violence of the disease, the eruption has appeared so early as to preclude the suspicion of infection after birth. Confluent small-pox usually brings on abortion or premature labour.

It has been doubted whether small-pox affects the internal parts. We know that they appear in the mouth and fauces, and on the tunica conjunctiva of the eye; but whether they are ever found in the stomach, intestines, or on the surface of the other viscera, is doubted. The most respectable evidence for their existence internally is Wrisberg in the new Gottingen Commentaries, v. 66; but Cotunnio and numerous other authors deny it. We have read a case where they seem to have been found in the course of the intestines, but after much search have not been able to discover the author; and perhaps in their track only can any internal pustules be expected. An instance is indeed recorded of their internal appearance after being repelled from the surface, but not on authority that commands our assent.

The seat of the small-pox has occasioned some disputes. Among other singular fancies, it has been supposed to be situated in the convoluted arteries of the surface, and that this was the necessary change to be produced in the constitution. C. L. Hoffmann contends that there are variolous glands, others that the poison is contained in renes succenturiatæ, &c.; Woodward that the source is in the stomach; but in reality the pustules are little cutaneous abscesses under the cuticle, and in the mild kind seldom ulcerating the cutis vera.

What the changes induced by this disease may be has greatly perplexed pathologists, because they at once concluded that some portion of our fluids was susceptible of change by the variolous matter, and that this change was produced by a ferment of an assimilating nature introduced from some person labouring under the disease. To this opinion many objections may be offered. It is not necessary, for instance, that there should be any eruption: if the fluids around are affected so that fever is produced at the regular time, the eruption is not an essential part of the disease; but it may be alleged that the inflammation shows an assimilatory power, for the quantity of virus is considerably augmented; and that the absence of the eruption may be satisfactorily explained by supposing the matter to pass through the skin without being obstructed so as to produce pustules. This to a certain extent is true; but the quantity assimilated must be in a much less degree; for there is no secondary fever on the return of the matter, and the disease is much less infectious in degree. It appears then rather to be a peculiar state of susceptibility in the skin, which is changed by the disease, and this opinion has greater force, since we know, that when infection has accumulated, as in nurses, when the child lies against their bosom, a local eruption only is produced. That fever is not again excited must arise in a great measure from the effect of habit in resisting an accustomed stimulus. If we refer the want of future susceptibility wholly to the latter cause, and the assimilation which takes place in the skin to the violence of fever, the view may be more simple, and equally satisfactory. In each case it is at least certain that the degree and extent of the assimilatory process has no influence on the future security, if any assimilation has taken place.

The treatment of distinct small-pox is very simple. It is scarcely a disease; and by a due regulation of the degree of fever we lessen the number of eruptions, and mitigate the severity of the complaint. Among the remedies a free exposure to the cold air is the principal, and we have shown (see DIAPHORETICA), that by this means every poison is most successfully eliminated from the constitution. A moderate relaxation of the bowels is also of importance, though when it was supposed that the morbid matter must be discharged through the skin, and by means of pustules, a high temperature of the atmosphere and obstinate costiveness were enjoined.

With similar intentions tepid baths have been advised, and the veteran Fischer, at the age of eighty, gave us an account of the very great advantages derived from them, in a severe variolous epidemic in Hungary. In general, those nations who, from negligence or necessity, are most filthy, suffer most from small-pox. Pallas.

It has been usual, after small-pox of the mildest kind, to give laxatives, with a view of carrying off the relics of the disease; but if there have been no local accumulations, and the bowels have been kept freely open during its progress, these are unnecessary. In general, distinct small-pox leave no unpleasant complaints; but often remove slight ones that have previously existed. To prevent the pits it has been advised to puncture the pustules and keep them bathed with milk and water, to remove the slough and the consequent erosion of the skin. Others considering that pits are less frequent in those parts of the body which are covered, have contrived a mask to keep the pustules of the face from the air; but we have not found either plan peculiarly advantageous. The constant applications of mild ointments is not more successful.

The confluent small-pox is a disease of peculiar difficulty and danger. The simplest idea that we can form of it is an irregular and hurried determination to the

skin, either from the peculiar virulence of the disease, or from debility. The virulence *may* arise from the nature or quantity of poison infused; but, in general, there is little reason to suspect danger from either source, and it is more probably owing to the state of the constitution or the infection having taken place from fomites, where all virus is in a more active state. The eruption appears particularly early from the violence of the fever, which, itself arising from debility, is attended with asthenic symptoms in a high degree. The head, as usual, suffers, and the eruptions are peculiarly numerous in the face. In every view *emetics* are of particular importance, as lessening the fever, and determining more freely, as well as more regularly, to the surface, and these should be followed by *laxatives*; for the advantageous period for *purgatives* is at some distance. A *blister* to the neck is also one of the earliest remedies, and it is peculiarly indicated by the coma and oppression; but repeated blisters to the arms and legs seem of little other utility than to harass and distress the patient; for the determination of the disease to these parts cannot be prematurely induced.

After these steps, the patient may be freely exposed to cold air. He is, in general, too weak to be carried into the air; but cold liquors, a current of cold air, with undrawn curtains, in a spacious apartment, are necessary. The indistinct crowd of pustules is, in this way, frequently lessened, and a few regular ones will often rise: the head will appear more free, the breathing less oppressed, and the food taken more readily. In this interval medicines are of little importance. Yet the camphor, with the volatile neutrals, by determining to the skin, and taking off irritability, are often useful; to which is often advantageously added Hoffmann's anodyne. If the number of pustules is now considerably decreased; if those which appear in the breast and arms begin to rise in distinct and regular forms; if the fever becomes more moderate, we may indulge some sanguine expectations. Our next object is to look for the salutary discharge of saliva. This seldom fails; but, on the decline of the disease, when it naturally becomes viscid, we must support it by squills, or by ipecacuanha, which usually succeed for a time; and, on its cessation, or somewhat previous to it, the action of purgatives must commence; for at this period the secondary fever begins.

The use of purgatives was adopted very early; but was not generally known till the publication of Friend's works, and particularly his epistle to Dr. Mead. On the decline of the eruption, medicines of this kind were given in doses sufficient to procure two or three motions daily; and by this means the secondary fever was checked. We have always employed them with advantage when the saliva began to be viscid, and with difficulty excreted, and, though not always with success, generally with an alleviation of symptoms. But at this period of the disease the patient sinks too often from debility: the load thrown back on the constitution oppresses the powers of nature, already too much debilitated.

It has been common to give bark very early in confluent small-pox, generally with vitriolic acid, sometimes with vitriolated, or the oxide of zinc (Hufeland). In the early period the head is too much loaded to admit of bark, and at a later [illegible]ere is danger of suppressing the salivation. Yet, if debility is urgent, lesser inconveniences must be disregarded; and, when given, it should be given freely, unless dyspnœa should come on. The acid of vitriol, of nitre, or muria is less objectionable, and may be given at any period of the disease: of the preparations of zinc we cannot speak from experience.

On a sudden sinking of the features, and retrocession of the eruptions, blisters have been applied to the arms and legs, sinapisms to the feet, and the warmest cordials with musk and ether prescribed—we believe, in vain. The numerous blisters would contribute to destroy the little excitability which remained, and the antispasmodics, we fear, fail to produce their only salutary effect, a diaphoresis. Few are the instances of success; yet every attempt should undoubtedly be made.

Two medicines we have designedly omitted; for, as not limited to any particular time, it seemed better to speak of them separately; we mean mercury and opium. An opinion prevailed very early, that, as mercury was an antidote to lues, it was also the same to the variolous virus, and Von Woensel has published a little tract to shew that mercury will render the virus inserted by inoculation inert and useless. His experiments are striking, if not very satisfactory; but, with these or other views, mercurial preparations have been very freely used. A German author styles calomel the remedium panchreston; Dr Fowler, in the Medical Commentaries of Edinburgh, thinks that the same medicine in the early stages lessens the number of pustules. Hirsel recommends it as the best medicine to restore the salivation when suppressed, and other practitioners have given it in different stages with different intentions. We cannot speak of it from experience; but suspect, that there is no period in which it can be injurious. If peculiarly adapted to any, we should suspect it to be in the confluent kind, given with laxatives previous to the secondary fever.

Opium is a remedy somewhat more equivocal. We know that it lessens irritation, determines to the skin, and assists suppuration; yet, in distinct small-pox, it is required only to give occasional rest, and, in the confluent, it is unnecessary in the early stages while coma exists, and there is danger of inducing dyspnœa, and checking that most salutary of discharges, the saliva, if given in the later periods. The delirium is also, in many instances, exacerbated by this medicine, and the patient rendered furious. It should, therefore, be used with caution, and it may be most safely given in the form of Dover's powder. When the eruption is repelled, it may be given freely with the other stimulants and antispasmodics. Practitioners have not, however, been in general apprehensive of inconveniences. Drummond, in the Edinburgh Medical Commentaries, recommends large doses from the earliest period of the eruption, and De Haen (Rat. Medendi, ii. 42) employs it during the whole course of the disease. Many authors prescribe it in the putrid kind, and when the strength fails, particularly Storck and Hufeland; nor does Sydenham disapprove of it.

The *varieties* of small-pox are numerous. From the appearance they are divided into the *crystaline* and *horny*. The former are white, filled with pellucid lymph, and

this form appears to be the most common appearance of the disease, when it is supposed to occur a second time. The eruptions in the second kind are hard and horny, and in this form the small-pox of negroes often appears. The inoculated pustule, in this race, is distinguished by a peculiar hardness.

When a bilious epidemic prevails, the small-pox partakes of its nature (Grant), and the disease then requires more frequent and more active laxatives. When a putrid fever is epidemic, the small-pox is attended with a similar one, and very early in the eruption the interstices are filled with petechiæ. These alone are seldom attended with any bad consequence; but, when conjoined with extreme debility, passive hæmorrhages, deliquium, &c., the bark with the mineral acids, and the strongest cordials with wine, are necessary. We have spoken of the small-pox as combined with measles, but with itch the disease is said to be more mild: with scarlatina and miliary fever it proceeds with little disturbance; but with violent catarrhs, or rather with asthenic influenzas, its periods are altered, and it becomes much more dangerous.

We have learnt, however, greatly to diminish the danger of this disease by INOCULATION; and in the more improved practice, instead of one in seven, not one in three hundred, probably not one in a much larger proportion, dies. Unfortunately, however, the infection is thus generally disseminated, and though individuals are benefited, the community suffers. More than forty thousand are said to die annually of small-pox; nor can we think that this alarming mortality should be permitted while the remedy in vaccination is so easy. If, for instance, each person of opulence was to pay five pounds for a licence to inoculate, with a security to perform a rigorous quarantine, the sums thence arising would establish small-pox hospitals for the poor, and indiscriminate inoculation might be prevented under heavy penalties. In this way, after no long period, the small-pox would be comparatively uncommon; and, if then it were by accident introduced, it might, as already hinted, be easily prevented from spreading; and, though vaccina be not the perfect security it has been supposed, it would be so within a few years.

It is, however, our present business to speak of this method as it is usually practised. Its history need not detain us; but we may only remark, that the custom of "buying" the small-pox was prevalent in Wales long before the introduction of inoculation by lady M. W. Montague. After an opposition equally violent and virulent with that which vaccination has experienced, it is at length established, and its advantages are better known than readily explained. Of these a considerable one is, that the disease is usually mild, and very rarely confluent; but if it should be so, it is less dangerous, because there is no secondary fever. The latter circumstance is a peculiar and distinctive character of inoculated small-pox. In explaining these advantages, the choice of time, of matter, and of habits, has been insisted on; but by experiments, perhaps scarcely justifiable, we find the matter of the confluent or even a putrid kind will produce a favourable crop; that constitutions, exhausted by disease, do not suffer considerably; and that the time of life or the season, with moderate precautions, have little influence. The only difference we can perceive is, that in the inoculated small-pox the infection is received under the skin; in the natural kind in the lungs or throat, perhaps the stomach; but the lungs or throat is the more probable seat, and the sensation felt in the stomach, after infection of every kind, seems rather from sympathy than actual impression. We know not that air, in any instance, except in combination, enters the latter organ.

The prevention of the secondary fever is a problem of peculiar difficulty. We have attributed it to the matter absorbed; but, though it occurs at the period of absorption, this cannot be the only cause; for even a considerable load of inoculated small-pox disappears without its occurrence. We pretend not to solve the problem, but have distinctly stated it to excite attention.

Inoculation is not by choice practised on very old persons or young infants. If the mother is the nurse, her anxiety will often injure the milk, and add to the irritation; nor should we omit the consideration, that fits at this period are not uncommon, and, though usually the harbingers of a mild kind, may themselves prove fatal. After about six months the irritation of teeth offers another obstacle, which is not completely avoided until the second year, a period of considerable risk in a large town, where small-pox is seldom absent. These precautions are, however, frequently overlooked without considerable inconvenience. Children are often inoculated within the first six months, and afterwards, if no swelling of the gums shows the near approach of a distending tooth. Unexpected occurrences sometimes undoubtedly derange our plans; but though these give often the appearance of danger, the disease is seldom rendered truly dangerous.

Advanced age offers no real impediment, and exhausted constitutions often go through the disease more mildly than others. We once, on an emergency, inoculated a whole family, and, among the rest, an infant at the breast, then labouring under a severe fever, calculating, from the circumstances, that this might be checked before the variolous fever came on. Its crisis was only on the morning before the accession of the latter, and the child escaped better than seven others. We mean not to recommend the practice; but, surrounded by small-pox, even in the house, it was the only chance which remained. We know of no constitutional disease that should prevent inoculation.

The season of the year is not important. We generally prefer the milder seasons, when free air, out of doors, may be constantly breathed, and when the temperature is sufficiently low to employ cold as a remedy. The spring is avoided by some practitioners as the period of inflammatory complaints; the autumn, by others, as that of putrid ones; the summer as too hot, the winter as too cold: but these are idle refinements, which merit no attention. The extremes of heat and cold, for the reasons assigned, are not to be selected by choice.

Equal refinement has prevailed respecting the preparation, and each practitioner had for a time his favourite medicine, of which calomel and tartarised antimony were usually parts. If a person is full, active, and strong, the diet may for a time be lowered, and as it is proper to prevent accumulations in the bowels, calomel may be employed as a purgative, as well as

any other medicine. As a vermifuge, in children, it may be superior to any other. In general, except in inflammatory habits peculiarly full, and children grossly fed, there is sufficient time for the preparation, after the matter is inserted. Should the wound inflame rapidly, our exertions in reducing the strength must be increased.

The operation itself is the simplest possible, consisting, like vaccination, only in raising the skin, and introducing under it the variolous matter. Sutton attributed much of his success to using fluid matter at an early period of the pustule, and it is certainly preferable; for, at a more advanced stage, it partakes of the nature of common pus, and produces more inflammation than would arise from matter exclusively variolous. In general it is safer to procure a drop of blood, which should not be wiped away, but suffered to congeal.

The puncture sometimes remains many days, without the slightest change, and occasionally the mark appears to lessen. If the operation, however, has been successful it does not heal, and this is often the only foundation for supposing that the infection has taken place. In other circumstances it begins to inflame in a few hours, and after four-and-twenty becomes a highly inflammatory pustule: a rapid advance, which usually portends a violent disease. In the greater number of cases, after about twenty-four, or, at most, forty-eight, hours, a little swelling may be observed on the wound, and on examining it with a lens, a little orange-coloured circle appears around.

On the fourth or fifth day a hardness may be perceived where the puncture was made, an itching is felt, and a slight inflammation observable. On the sixth day a pain and stiffness are generally felt in the axilla, which continue until the tenth or eleventh day, foretelling the near approach of the eruption, and a favourable progress. On the seventh or eighth day the eruptive symptoms appear, such as slight pains in the head and back, stiffness in the arm-pits, transient shiverings, with alternate heats, &c. which continue more or less until the eruption is completed: the inflammation in the arm spreads, and little pustules surround the wound, which increase in size as the disease advances. On the tenth or eleventh day an efflorescence round the puncture sometimes extends half way round the arm; and the larger it is, the fewer the pustules and the milder the disease. When it accompanies the eruption, the fever and other uneasy symptoms subside, and all danger is at an end.

If none of the appearances on the arm appear before the eighth day, the inflammation, &c. about the puncture rise suddenly; and this is generally, though without reason, regarded as a mark of danger. Mr. Sutton repeats the evacuations from the time of infection to this period, and observes, that when the skin is hot and dry, repeated doses of salts are more useful than the mercurial medicine.

The favourable symptoms are, an orange-coloured stain about the edges of the puncture on the second day, followed by an itching and a vesication, without much inflammation; on the third or fourth day, but not delayed beyond the sixth; a pain and stiffness in the axilla; the large efflorescence about the puncture on the tenth or eleventh day; a hardness which spreads from the puncture as from a centre, and a little dry scab on the inflamed part when it rises to an apex.

The less favourable symptoms are, a purplish instead of a red-coloured inflammation or a narrow deep red circle surrounding the puncture, and when the incrustation around it is depressed or concave in the middle.

When the fever has come on no particular medicines are required, but if every circumstance be not favourable, our conduct must be the same as in the natural small-pox already described, where similar symptoms occur.

Boerhaave first suggested that an eruption was not necessary, and there is little doubt but that the real disease consists in the fever at the proper period after infection. Even after eruptions have appeared, we have seen them checked without maturation, by free exposure to cold air; nor did the patient experience the slightest inconvenience. If then a portion of our fluids is to be assimilated by the ferment, it is necessarily a small one, and soon disappears. In fact, however, the assimilatory process takes place only in the pustules.

We need not enlarge farther on this subject, and indeed we may appear to have been more full than the disease requires. We trust that in a future edition the whole article will be expunged as unnecessary, and our posterity read with surprise that such things have been. It is a consummation devoutly to be wished for.

On the small-pox, see Sydenham and Mead's Works; Huxham on the Small-pox; Thompson's Enquiry into the Origin, &c. of the Small-pox; Tissot's Practical Observations on the *Inoculation*. See Kirkpatrick, Dimsdale, and Woodville's History of Inoculation; Percival on the Advantages and Disadvantages of Inoculating Children; Blake's Letter to a Surgeon on Inoculation: also Baker, Burges, Matty, Watson, Glas's two Letters; Bromfield; Gatty, and Chandler on Inoculation; Cullen's First Lines, edit. 4, vol. ii.; White's Surgery, p. 423.

VARI'OLA CHOLE'RICA. See MORBILLI.

VARI'OLA LYMPHA'TICA. See VARICELLA.

VA'RIUM OS, (from *varius, unequal*). See BUBOIDES.

VARIX, (from *varius, irregular*); *ixia; bidella; cursos;* a preternatural distension of portions of the veins, between their valves, defined by Dr. Cullen, a soft tumour not pulsating above a vein. When seated, however, over an artery it sometimes pulsates, and has been styled aneurismatic (Medical Observations and Inquiries, i. and iii.). When in the larger veins it is often fatal. Tozzetti discovered it after death in the vena azygos (Prima Raccolta di Observationi Mediche); and Michaelis in Richter's Bibliotheca describes a varix of the jugular vein which terminated fatally. Sometimes varices are formed in the legs, and are so large and troublesome as to require being removed. (See Gooch's Treatise on Wounds, p. 188.) They are common in the legs of pregnant women, and it is said of those who labour under a schirrous liver. Generally a tight stocking, or spiral bandage, is only necessary for relieving the inconveniences occasioned by this complaint. Varices have sometimes burst spontaneously, and been sometimes punctured, when the cicatrix gives a firmness to the relaxed coat of the vein (Petit). As-

tringents are sometimes employed with advantage. A very powerful one is the following, though we do not recollect its author. An ounce and a half of blue vitriol, with as much alum, is dissolved in a pint of rain water, to which half an ounce of vitriolic acid and a dram of ærugo are added. The leg affected must be firmly bandaged, and the bandage frequently wetted with this embrocation. Severinus recommends the actual cautery, and Richter a solution of sal ammoniac in vinegar or wine. See Heister's Surgery; Bell on Ulcers, edit. 3. p. 260; White's Surgery, p. 125.

VA'RUS. A PIMPLE; *cossi*; *ionthos*. See GUTTA ROSACEA. A bending of the legs inwardly. See VALGUS, CYLLOS.

VAS, a VESSEL, *entale*; *alkalia*; *angos*. In anatomy, those canals are called VESSELS through which the fluids are circulated, or by which some of them are absorbed, secreted, or excreted.

When we confine this general term to the circulating vessels, some observations worth recording occur. We have styled them primordial parts, and incapable of extension beyond certain limits, but have given full force to Mr. Hunter's opinions (see BLOOD), and Mr. Abernethy's (see TUMORES). We need not, therefore, resume the subject. Air has been sometimes found in them; but it appears to have separated after death, should it not have been its cause, since air injected into the arterial system soon induces convulsions.

The circulating system is sometimes confined by concretions either cartilaginous, osseous, polypous, or steatomatous, in their cavities. A steatom was found by Stenzel in the aorta, and the coronary artery sometimes cartilaginous, in other instances osseous (Crell and Parry); but we could not admit, with the latter, that this was the cause of ANGINA PECTORIS, q. v. The obstructions in the smaller vessels, usually producing indurations and schirri of the liver and other viscera, seem to arise from their want of irritability, either in consequence of shocks, too great excitement from previous repeated inflammation, indolence, the abuse of spirituous liquors, &c. Hence arises, as we have explained, the utility of mercury in small doses, long continued.

The only other disease of the vessels to which we mean now to advert is the inflammation of their coats. Mr. Hunter has explained how the internal surface of a vein is inflamed after bleeding, and we have been willing to refer rheumatism to this cause. We suspect it to be more often a cause of inflammatory pain than has been supposed; but can trace it but a little way. An author, whose work we have tried in vain to procure, may perhaps elucidate the subject. E. J. Smuck Observationes Medicæ de Vasorum Sanguiferorum Inflammatione, Heidelburg, 1793.

In chemistry, *vessels* are employed for containing substances, and for the various processes, &c. viz. alembics, aludels, worm-still, receivers, cucurbits, sand-baths, cones, retorts, pelicans, &c. In botany, the vessels are of three species, viz. *vasa propria*; *utriculi*; and *tracheæ*. See PLANTA.

VAS URINA'LE. See CUCURBITA.

VA'SA BRE'VIA. See SPLENICA ARTERIA, and SPLEN.

VA'SA LYMPHA'TICA. See LYMPHÆ DUCTUS.

VA'SA SPERMA'TICA. See SPERMATICA CHORDA.

VA'SA SUCCO'SA. See VAS.

VA'STUS EXTE'RNUS, and INTE'RNUS, (from *vastus, large*), *cruræus*. These may be considered as one muscle, whose outer part rises from the external, the inner from the internal, and the middle from the anterior part of the femur, in such a manner as to surround the whole thigh, except the linea aspera. The tendons are joined with those of the rectus. See CRUREUS.

VE'CTIS, (à *vehendo*, from carrying different kinds of ware), the simple lever, not greatly differing from the single blade of the forceps. (See PARTURITIO). Dr. Hamilton is of opinion that it may be employed where a slight stimulus is sufficient to rouse the pains, or where little force is necessary to alter the position of the head, by introducing it in the same manner, and with the same precautions, as a blade of the forceps, either at the lateral parts of the pelvis under its arch, or diagonally; but as there is great hazard of bruising the mother by the resistance of the instrument, unless managed so that the hand of the operator is the fulcrum or support on which its action turns; and as it can only be used when the head is sufficiently protruded for applying the forceps, it has been considered as a dangerous instrument in the hands of a young practitioner. Dr. Bland, whose experience and judgment demand the highest respect, thinks that it may be in many circumstances highly useful.

VEGETABILIS, (from *vegeo, to shoot out*). VEGETABLE. (See PLANTA and CHEMIA.) Under the former of these articles we have considered the anatomy, the physiology, and pathology, of plants at some length; but, as was intended, under the latter only a general abstract of vegetable chemistry is inserted. Its imperfections we shall now supply, though in a general summary way.

The vegetable principles are the woody fibre, the extractive, tanin, mucilage, fæcula, volatile oil, camphor, resin, and balsam, gum resin, and vegetable acids. Alumen, fibrin and gelatin, benzoic and phosphoric acids, sugar and fixed oil, are common both to the vegetable and animal kingdom. Of these we shall speak in their order.

The *woody fibre* is the firm, solid support of the tree; and, if divested of the bark, which contains the substances to be afterwards mentioned, is generally insipid, though sometimes, as in the guaiacum, quassia, &c. (see LIGNUM), it possesses obvious and medicinal qualities. It yields, in distillation, hydrocarbonated gas, carbonic acid, empyreumatic acetous, or pyroligneous acid, with a little ammonia, and a small proportion of volatile oil. It consequently contains, with the other component parts of vegetables, a small proportion of azot, and indeed the minuter chemistry discovers this principle in many kinds of vegetable matter, where it was not before suspected. The remaining charcoal is in a large proportion, and there is no analogous substance in the animal system.

Extractive matter is a vegetable product, with a very slight decomposition, sometimes separated with little change. It seems a combination of the gum, the resin, and albumen, or gluten. It yields, however, ammo-

nia when combined with quick lime. In distillation the ammonia is covered by an empyreumatic acid, though separated by alkalis. In this vegetable principle we find also azot, and nothing analogous to it in the animal kingdom.

Tanin seems to contain no ammonia, though a principle resembling it is found in animal substances, as Mr. Hatchett procured it from many of these, previously charred by the action of the nitrous acid.

The *mucilage* of the vegetable kingdom seems analogous to the albumen of the animal, which we have supposed to be converted into gluten by the union of azot. It contains a large proportion of this last principle, which appears to disguise its acid. It is found in the substance of some plants, in the bulbous roots of others, and occasionally in the woody fibres of the roots.

The *fæcula* is nearly allied to the mucilage, and in many of the palms is contained in a separate state; but sometimes requires much artificial preparation to extract it. It is contained in all seeds, and, in a smaller proportion, in tuberous, bulbous, and other fleshy roots; but seems to contain no ammonia except by accidental impregnation. Some fæculæ, in this way, contain it in considerable quantity, as indigo.

Volatile oil also affords no ammonia, and there is no analogous fluid in animals, except in their secretions. It is found in the bark, the wood, and many seeds, and contains the usual principles of vegetables, except the azot. The cerumen of the ears and the bile may be considered as resembling in some of their chemical properties these oils.

Camphor, resin, and *balsams* are more compound vegetable principles, and seem to contain an acid, disguised by a superabundance of oxygen. They contain, as may be suspected from the excess of oxygen, no azot. The aromatic animal products, apparently resinous, as musk, civet, and ambergris, contain a large proportion of azot. The gum resins possess a large proportion of the same principle in their mucilage.

The *acids, truly vegetable,* are the *tartarous,* the *citric,* and the *gallic.* The malic and oxalic, evolved in the fruits and leaves of plants, the *acetic* the production of spontaneous fermentation, and the *prussic* contained in the bitter almonds, in the laurel and peach leaves, may also be separated from animal substances.

The acids *common to both kingdoms,* though more strictly connected with the animal than those last mentioned, are the *benzoic* and *phosphoric.* The former is found in the vegetable balsams and the urinary calculi; the latter combined with lime and potash occurs in the vegetable kingdom but rarely; though common in the animal, as the basis of bones.

Sugar is a vegetable oxide, and would have been arranged among vegetable productions, if it had not occurred in the milks of all animals. The saccharine matter in diabetes is the effect of disease only.

Gluten and *caoutchouc* are vegetable substances; but very nearly connected in their principles with the animal kingdom, as their proportion of azot is considerable without any acid.

Albumen, fibrin, and *gelatin,* though in general animal productions, are yet sometimes found in vegetables, and contain always a large proportion of azot.

Fixed oil, on the contrary, is more strictly vegetable, and is found only in the cellular membrane, the milk and the bile of animals, but very copiously in vegetable seeds and many fruits. All these vegetable principles may be resolved into oxygen, carbon, hydrogen, azot, and sulphur. These only seem essential to their existence as vegetable matter, and even sulphur may be perhaps abstracted. The varied forms of vegetables depend on numerous other ingredients, as the phosphoric and muriatic acids, oxides of iron and manganese, potash and soda, lime, magnesia, silex and alumine.

As vegetables are the food of animals, it is much easier to trace the source of the animal products than of those which are derived from water and vegetable mould; a substance of no very intricate or complicated combination. But the vegetable, as the animal, forms its own juices, and the narcotic bitter does not differ more from the mould with which it is nourished than the semen from the blood, from whence it is secreted. Each is elaborated in organs too minute for our sight, in a manner that eludes the subtilest investigation.

VELAME'NTUM BOMBYCI'NUM, (from *velo,* and *bombyx, a silk-worm*); the interior soft membrane of the intestines.

VE'LUM PE'NDULUM PALA'TI, (from *velo*). See FAUCES.

VE'LUM PUPI'LLÆ. See PUPILLARIS MEMBRANA.

VE'NA, a VEIN; a thin, ramifying, elastic tube, arising in the extremities of the body, and terminating in the heart or in the liver. The blood is distributed through the body by the aorta and the pulmonary artery; and it is returned by three kinds of veins, viz. the cava, the pulmonary, and the vena portæ. The arteries have their correspondent veins, and the course of one is known by that of the other. They begin where the arteries end, and proceed from the branches to the trunk, enlarging in diameter in their course.

The extremities of the arteries in the brain are continued into their veins, but the former enter the brain at its basis, and are soon minutely divided: the trunks of the veins, on the contrary, are extended on the surface of the brain, and discharge their blood into sinuses; nor do the veins of the brain accompany their arteries as in other parts, and as the arteries and veins of the dura mater do. In the corpora cavernosa penis, and perhaps in the spleen, they are not continued from the arteries, but open, like lymphatic vessels, from cavities.

The veins subject to frequent compression, from the action of the muscles, have numerous valves, which open towards the heart to prevent regurgitation; and indeed in all the veins except those of the uterus, the cerebrum, and portæ, valves prevent the return of the blood when the course of the fluid is occasionally checked. The superficial veins prevent the circulation being interrupted by the action of the muscles compressing the more internal.

The coats of the veins are thinner than those of the arteries, but these fibres run in all directions, and are not muscular: their coats are thicker in the extremities than among the viscera, particularly in the saphena.

The capacity of the veins is much larger than the arteries, except in the pulmonary vessels, where the four veins taken together are not equal to the artery.

Veins are occasionally ruptured, and their internal surface sometimes inflamed from bleeding. See PHLEBOTOMIA and VASA. See Winslow's Anatomy; Haller's Physiology.

VE'NA SPLE'NICA BRA'CHII MEDIA'NA BASI'LICA. See BASILICA VENA.

VE'NA MEDINE'NSIS. See DRACUNCULI.

VE'NA SI'NE PA'RI and JU'GO. See AZYGOS VENA.

VENA CAVA. (See CAVA and COR.) This vein is sometimes varicose (Morgagni Opuscula Miscellanea, i. 10), occasionally closed (Albini Annotationes Academicæ, vii. 9); in one instance was found ruptured, (Morgagni de Sedibus, &c. xvi. 27, 28). In this case the pulmonary vein was also ruptured. See Haller de Aortæ Venæque Cavæ, Gravioribus quibus dam morbis Observationes.

VE'NA JUGULA'RIS. (See JUGULARES VENÆ). We resume this subject chiefly to mention the advantages supposed to be derived from opening it. In children the other veins are often too small to admit of a sufficient discharge in a given time, and in cases of suffocation it is particularly advantageous, as it tends to deplete the neighbouring vessels, and, of course, to remove accumulations. Chabert in the History of the Academy of Surgery, ii. 94, has described a machine for this purpose, and Tralles has highly recommended a discharge from this vein in diseases of the breast and head. Tralles de Vena Jugulari frequentius secanda.

VENA RANINA. The vein under the tongue, not unfrequently opened in the diseases of children; but many inconveniences are recorded as resulting from this operation, and it should not, therefore, be attempted, as the advantages are equivocal.

VE'NÆ LA'CTEÆ. See LACTEA VASA.

VE'NÆ-SE'CTIO, (from *vena, a vein,* and *seco, to cut*). See PHLEBOTOMIA.

VENE'NUM, (βελενιον, from βελος, *a dart,* as usually conveyed by darts). POISONS, as we have often had occasion to observe, differ from medicines, not in qualities, but in doses; and we usually annex the idea of poison to those things which produce deleterious effects in very small quantities, and of whose action we are imperfectly acquainted. What kills by its mechanical action externally is not styled poison. Medicines of a peculiar nature, which unavoidably kill, but whose bad effects are occasionally relieved by specifics, or for which we have no cure, are commonly called poisons.

In this way, though we speak of the poison of cancer, of variola, and of putrid fever in common language, it forms no part of the present subject; nor indeed when a person breathing the miasma of pestis confined in fomites falls down without life, is he properly considered as having been poisoned; for these are causes of disease which, if not violent and sudden in their termination, might be removed by medicines suggested by indications; yet when suffocated by carbone, by azote, &c. a person is said to be poisoned, because no specific disease results from a less degree of the application. The distinction is not perfectly correct and scientific; but it is unnecessary in this place to innovate on popular opinions and common language.

Poisons may be divided into animal, vegetable, and mineral. The volatile animal poisons are the vapours of putrefaction. Those from vaults have proved fatal in France. The vapours of graves, hastily opened and incautiously breathed, have had the same effect; and the highly fetid vapours from numerous persons labouring under dysentery and putrid fever have proved very suddenly fatal. The breath of some serpents is said to prove fatal; but this idea is now left, with the other tales of the nursery, to ignorance and superstition; nor is it even admitted that the breath of the black snake fascinates birds. The more fixed animal poisons are those of serpents, of the scorpion, if really poisonous, of fish, and perhaps of the mad dog. The toad is said to be poisonous; but facts are wanting to establish its deleterious quality.

Of the serpents and scorpion we have already spoken (vide in verbis). Fishes of many kinds are poisonous; but few at all times, and in every constitution, so that, as in muscles, it seems to depend on their food. (See MYTILUS.) The *cancer terrestris* also of the West Indies is only poisonous in dry seasons, when the deficiency of other food compels it to feed on the bark and leaves of the manchineel tree. The *lobster*, probably from its food, is occasionally poisonous. Fish, in the more strict sense, are sometimes dangerous; but the deleterious kinds are chiefly inhabitants of the tropical seas, and, in the fishermen's opinion, may be distinguished by their want of scales. The *yellow-billed sprat* is highly poisonous, while the *black-billed,* scarcely distinguishable from it by sight, is innocent. The *baracuta* is sometimes poisonous, though occasionally eaten without danger. The *cavallee* (the scomber of Brown) is usually poisonous; and the varieties styled bottlenose and ambar are the same, though the greenback is innocent. The *king-fish* (xiphias of Brown) is highly delicious, and only at some seasons injurious. The *smooth bottle-fish* (ostracion glabellum) is at times very dangerous. The *rock-fish* (perca marina of Catesby) is apparently only dangerous when caught in particular situations.

In general, the poison of fish appears to lie in the intestines, as it probably arises from their food; for it is found that if these are immediately taken away, the fish well washed and salted, little danger results from even the baracuta. The symptoms are alarming, but not highly dangerous. Cardialgia and nausea are succeeded by severe vomiting and purging, cold sweats, fainting and vertigo. The face is highly flushed, the eyes inflamed, and agitated by spasmodic contractions. A burning soon comes on in the face and eyes, extending to the extremities, accompanied, or succeeded, by a general efflorescence, with a pricking of the skin, and this affection of the surface attends the injuries received from every kind of fish; in some constitutions from even the most innocent. The skin at last peels off, and shooting pains in the joints often continue for some time, and at intervals for many years. The poison must be soon evacuated, and the vitriolated zinc is recommended for this purpose. The bowels must also be relieved, and after this the warmest cordials of every kind are alone sufficient. The capsicum in large doses is often highly useful, and as a remedy always at hand, when a ready active one is wanted, it is peculiarly advantageous.

The sea insects, the blubbers, and many other inhabitants of the ocean are undoubtedly poisonous; but their effects are little known, for their appearance is

too disgusting to allow of their being eaten. Of other insects the meloe vesicatorius (cantharis) is the only poison with which we are distinctly acquainted, but may add from Plenck's Toxicologia a list of the insects supposed to be venomous. Furia infernalis; meloe majalis and proscarabæus; scorpio Africanus; phalangium aranoides; sirex gigas; buprestis; aranea domestica and tarantula; pulex penetrans; culex pipiens; pulicaris and lanio; apis mellifica; vespis vulgaris and crabo. The poisonous worms are, gordius medinensis and marinus; hirudo medicinalis venenatus; tethys marina; urtica marina. Among the poisonous amphibia are, rana bufo; lacerta goeko and salamandra. The poison of many of these, however, consists only in their sting. To the fish formerly mentioned as poisonous we may add, from Plenck, the tetraodon ocellatus and lineatus, perca venenosa and sparus pagurus. Anderson in the Philosophical Transactions, lxv. 544.

Animal substances that have passed through a considerable part of the process of putrefaction are often highly deleterious, and the mildest in its natural state is the most injurious, when putrefied, the egg. It has been doubted whether animals killed with poisoned weapons may be eaten with safety; but we believe the innocence of such food is now well established, though some facts seem to oppose. It has been alleged that some poisons kill by their aroma, which spreads readily, and adheres tenaciously. This is, however, an apparent refinement of little utility in our inquiries.

The vegetable poisons are very numerous, and may be divided into the volatile and fixed. The former rather refer to medical police than to a practical treatise; but it may be of use to enumerate those vegetable substances which exhale an offensive, possibly an injurious, effluvium. The odours which we shall add are sometimes when diluted pleasing, but oftener injurious. These are the

HALITUS.
Anagyridis.
Dracunculi.
Juglandis.
Sambuci.
Santali albi.
Alceæ moscatæ.
Mancinellæ.
Cannabis.
Lini.
Toxicodendri.
Vernicis.
Dracontii polyphylli.
——— fœtidi.
Hellebori albi.

The ODOURS are,
Violarum.
Rosarum.
Liliorum alborum.
Caprifolii.
Polyanthes.
Phaseoli.
Fœni recentis.
Oleandri.
Caryophyllorum.
Asæ fœtidæ.
Ambræ.
Moschi.
Castorei.
Zibethi.
Cantharidum.

Hyosciami.
Stramonii.
Opii.
Croci.
Tabaci.
Lolii temulenti.
Cicutæ.
Conii maculati.
Fungorum venenatorum.

They are divided by Plenck, in which he is followed by almost every author, who is, however, anxious to keep him concealed, into narcotic, narcotico-acrid, mushrooms, acrid, and glutinous poisons. The two first distinctions we cannot perceive, nor do the effects of the poisonous mushrooms appear to us to differ from those of the other narcotics. We shall include them therefore under the general title of narcotics, distinguishing each by the Greek letters α, β, γ.

I. NARCOTIC POISONS.

α Papaver somniferum.
Physalis somnifera.
Solanum lycopersicum.
——— mammosum.
——— insanum.
——— dulcamara.
——— nigrum.
Datura stramonium.
——— metel.
——— ferox.
——— tatula.
Atropa mandragora.
Hyoscyamus niger.
——— albus.
——— physalodes.
——— scopolia.
Azelea pontica.
Antirrhinum orontium.
Actæa spicata.
Lollium temulentum.
Ervum ervilia.
Lathyrus cicera.
Peganum harmela.
Chænopodium hybridum.
Taxus baccata.
Chelidonium glaucium.
Lactuca scariola.
——— virosa.
Prunus laurocerasus.
Paris quadrifolia.

β Hippomane mancinella.
——— biglandulosa.
Menispermum coculus.
Coriaria myrtifolia.
Strychnos nux vomica.
——— colubrina.
Ignatia amara.
Nerium oleander.
Atropa belladonna.
Nicotiana tabacum.
——— rustica.
——— panicula.
——— glutinosa.
Bryonia alba.
Chærophyllum sylvestre.
——— bulbosum.
Chærophyllum temulentum.
Æthusa cynapium.
Sium latifolium.
Cicuta virosa.
Conium maculatum.
Mercurialis perennis.

γ Agaricus muscarius.
——— integer venenatus.
——— lactifluus venenatus.
——— viscidus.
——— piperatus.
——— fimetarius.
——— pustulatus.
——— necator.
——— sanguineus.
——— viscidus.
——— clypeatus.
Boletus versicolor.
——— elegans.
Boleti parasitici.
Phallus impudicus.
——— mukusin.
Lycoperdon carcinomalis.

II. ACRID POISONS.

Delphinia staphisagria.
Semen sabadilli.
Rhododendron crysanthemum.
Fritillaria imperialis.
Colchicum autumnale.
Pedicularis palustris.
Digitalis purpurea.
Lobelia siphilitica.
——— longiflora.
Cyclamen europæum.
Plumbago europæa.
Convolvulus scamonea.
Cucumis colocynthis.
Momordica elaterium.
Cambogia gutta.
Cerbera ahovai.
——— manghas.
Cynanchum erectum.
——— viminale.
Apocynum androsæmifolium.
——— canabinum.
——— venetum.
Asclepias gigantea.
Hydrocotile vulgaris.
Oenanthe fistulosa.
——— crocata.
Scandix infesta.
Thapsia fœtida.
Alisma plantago aquatica.
Clematis vitalba.
——— flamula.
——— erecta.
——— integrifolia.
Anemone palmata.
——— pulsatilla.
——— pratensis.
——— narcissiflora.
——— nemorosa.
——— ranunculoides.
Helleborus albus.
——— niger.
——— fœtidus.
Veratrum nigrum.
Caltha palustris.
Aconitum napellus.
——— cammarum.
——— lycoctonum.
——— anthora.
Pastinaca sativa, annosa.
Polygonum hydropiper.
Sælanthus quadragonus.
——— glandulosus.
——— forskalii.
Jatropha curcas.
——— multifida.
——— manihot.
Ricinus communis.
Phytolaca decandra.
Croton tiglium.
Daphne mezereum.
——— thymelæa.
——— laureola.
——— cneorum.
——— gnidium.
Cneorum tricoccum.
Amyris toxifera.
Rhus vernix.
——— radicans.
——— toxicodendron.
Scilla maritima.
Excæcaria agallocha.
Anacardium occidentale.
——— orientale.
Caryota urens.
Arum maculatum.
——— dracunculus.
——— dracontium.
——— colocasia.
——— esculentum.
——— virginicum.
——— arborescens.
——— seguinum.
Calla pallustris.
Euphorbia officinalis.
——— antiquorum.
——— canariensis.
——— tirucalli.
——— peplus.
Euphorbia lathyris.
——— helioscopia.
——— verrucosa.
——— platyphyllos.
——— esula.
——— cyparissias.
——— pallustris.
——— hiberna.
——— characias.
——— amygdaloides.
——— sylvatica.
——— exigua acuta.
——— mauritanica.
——— nerifolia.
Ranunculus sceleratus.
——— thora.
——— flamula.
——— lingua.
——— ficaria.
——— illyricus.
——— bulbosus.
——— alpestris.
——— polyanthemos.
——— acris.
——— arvensis.
——— gramineus.
——— asiaticus.
——— aquatilis.
——— platanifolius.
——— breynius.
——— sardous.
Raphanus raphanistrum.
Secale cornutum.
Ustilago frumenti.
Caries frumenti.
Rubigo frumenti.

III. GLUTINOUS POISONS.

Gluten aucuparium.
——— visci querni.
Fungus cynosbatos.
Spongia marina.

Mr. Wilmer in his Observations on the Poisonous Vegetables found in Great Britain distinguishes, 1st. Those from which maniacal symptoms are to be expected, or different nervous affections from a vertigo to a fatal apoplexy, including the HYOSCYAMUS NIGER, SOLANUM LETHALE, ACONITUM, MERCURIALIS SYLVESTRIS, STRAMONIUM, CICUTA MAJOR FŒTIDA, AGARICUS MUSCARIUS, AGARICUS PIPERATUS, q. q. v. Secondly, Those which produce epileptic symptoms, a loss of understanding, speech, and all the senses, within a few minutes after they are taken in the stomach: the muscles will be convulsed, and death will close the scene in a few hours. ŒNANTHE CHÆROPHYLLI FOLIIS, CICUTA AQUATICA, and LAUROCERASUS, q. q. v. The danger of the last is very great, as they do not offend the palate, nor produce any sickness in the stomach, so that they are not likely to be discharged without the assistance of art; and are so quickly active, that they scarcely afford an opportunity for assistance.

He adds, that poisonous vegetables appear to act by oppressing the nervous system, rather than by inflaming the stomach and duodenum; and that these vegetable poisons, in different constitutions, will have various and sometimes opposite effects.

The antidotes of the narcotic poisons are said to be the vegetable acids, given by the mouth, or in clysters, and coffee: blisters to the neck, rubefacients, and stimulants of every kind must be added. As the face is full and flushed, bleeding has been generally recommended; but the plethora is venous only from relaxation, and bleeding decidedly injurious. Of the effects of mushrooms, and their treatment, we have already spoken at some length. See AMANITA.

The effects of the acrid vegetable poisons are relieved chiefly by narcotics and by demulcents. If we know

that they are naturally determined to any particular excretory, the discharge from the same organ must be promoted by the mildest means, to dilute the acrimony which will be soon brought there, and every means of soothing general irritation adopted. Oils, as demulcents, are perhaps inferior to mucilages, and better adapted to mineral poisons; and soap, as containing an alkali, is the appropriated antidote of the latter. We need not add, that the chemical nature of vegetable poisons is too little known to enable us to add an antidote from affinity.

The *mineral* kingdom, as it affords the most active remedies, so it abounds with the most deleterious poisons, which are sometimes fatal in the form of gas, more frequently given with the most wicked designs, or accidentally injurious when prescribed by quacks, or the most undiscriminating inexperience.

The vapour of calcareous earth we have already mentioned in a former part of this article, under the title of carbonic acid air; the vapour of arsenic is often diffused in smelting houses, and undermines the health of the workmen; of mercury in the quicksilver mines of Almaden and Idria; of lead in various manufactures. Copper is not apparently raised in vapour in an injurious form.

Internal poisons are sometimes mechanical, as the filings of tin, given as anthelmintics, leaden bullets, and quicksilver, the supposed remedy of ileus. The others act by their violent irritation chiefly on the primæ viæ, but occasionally on the secretory organs, or their excretory ducts. We need not, however, be anxious on the latter point, as our chief attention must be directed to them while still retained in the stomach and bowels. They may be divided into alkaline, earthy, acid; neutral alkaline, neutral earthy, neutral metallic; metallic oxides; metals, and inflammables.

The pure *alkalis* are highly caustic; nor can they be swallowed without discovery, so that the victims are the incautious and the suicides. Their obvious antidotes are the acids, and, if the throat is not so much excoriated as to bear them, the vegetable acids soon relieve from immediate danger. Should the excoriation be considerable, water impregnated with fixed air, or diluted acids sheathed with mucilaginous substances, must be taken. The consequences are, however, often highly inconvenient. Digestion is impaired; the stomach seems a cold heavy mass; the bowels are constipated, and the strength decays. For many months these inconveniences have remained, though they gradually recede, and are in a great degree, though not wholly, removed.

The *earthy* poisons are little known Pure *lime*, by its causticity, may be poisonous if swallowed, and there is much reason to suppose the *barytes* highly dangerous. Of the *strontia*, as a medical agent, we know little, and the effects of the other newly discovered earths on the human body have not been ascertained. The *amianthus*, under the name of plumose alum, is sometimes injurious from its spiculæ, which produce itching on the surface, and may, therefore, be wholly referred to mechanical action.

The poisonous *acids* are the stronger mineral, and the effects are the same, though the antidotes are more ready and easy. Alkalis may not be easily swallowed; but soap diffused in milk, oils combined with water by means of pure alkalis, will always relieve. The effects, like those of alkalis, arise from excessive excitement.

Neutral alkaline salts are seldom injurious, and we have preserved this title only to remark, that *nitre* swallowed in large doses is often poisonous. It seems to act as an indirect stimulus; but is chiefly fatal by producing violent hæmorrhages.

Neutral earthy salts are the *calcareous sulphat* (gypsum) and the *muriated barytes*, perhaps, if incautiously administered, the *muriated lime*. History has recorded the treachery of one of the Byzantine emperors who mixed powdered gypsum with the meal designed for the army of Conrad III. by which the greater part is said to have been destroyed. It sometimes produces inconvenience when found in water, in that proportion which constitutes it *hard*, by bringing on constipation; but it is seldom, in common life, dangerous or fatal.

Neutral metallic salts are highly injurious, and their number is almost as great as that of the metals whose medical power is known. The *vitriolated copper and zinc* are well known; nor is the *vitriolated iron* in large doses innocent. *Nitrated* and *muriated silver* are highly caustic and injurious. Dr. Fordyce remarked, that *gold* is only a cordial in the pocket, so it is only a poison to the mind. It is innocent of all bodily good or harm.

The *muriated antimony* is extremely caustic, and the *oxymuriat of mercury*, the corrosive sublimate, equally so. The other preparations of these metals are not equally active and deleterious, though the saline compounds of each possess considerable acrimony, particularly the *vitriolated* and *nitrated mercury*; and in large doses are often injurious. *Lead* is chiefly offered to us in a saline form, as *combined with the vegetable acid*; and so many are the opportunities for this union, that its bad effects are supposed to be extensively diffused. This unreasonable apprehension we have endeavoured in part to remove. (See PLUMBUM.) *Copper* is soluble in such a variety of menstrua, that its introduction into the system has been universally dreaded, and we are taught to guard against it in our culinary vessels, our medicines, and our spirit, as well as in the construction of our reservoirs for water. The fears of mankind are sufficiently alive to prevent them from incurring these perils, unless from accident, and the taste of copper is too striking to prevent its incautious introduction. It is discovered by the aqua ammoniæ, which precipitates the copper in a blue colour, except when combined with spirit. In this case soap is the criterion, and it dissolves in the spirit in greenish striæ. (See CUPRUM.) The *arsenicated soda* is highly deleterious.

The *oxides of mercury and antimony*, in particular circumstances, are highly acrid. The red and white precipitates of mercury are dangerous, and often poisonous: the *crocus metallorum*, the *powder of algaroth*, and the *glass of antimony*, scarcely less so; but the most destructive of the oxides is ARSENIC, q v.

The only dangerous metal that we are acquainted with is *lead*, and the only poisonous inflammable *phosphorus*. Copper, if it meets with no acid, is innocent, but from the accidental occurrence of an acid in the stomach, may become violently deleterious. There are, however, very few circumstances in which it is likely to be swallowed, and no inconveniences seem to have

been observed, where swallowing is almost unavoidable.

The counter-poisons are chiefly sulphur, in different forms; but the power of the metallic salts is weakened by the addition of those acids which have a stronger affinity to the metal than that with which it is combined, and which form a milder combination; or alkalis, which leave the metal in a comparatively inert oxide. Our chief dependance, however, is on emetics and laxatives, first to discharge what may continue to irritate, and afterwards to sheath the bowels by demulcents. Oil with milk, soap dissolved in water, mucilaginous fluids of every kind, often with opium, when the pain is violent, will succeed, if success remains in our power.

Some other poisons remain, of whose composition history has fortunately left us no traces. The aqua toffana was pure and tasteless, but certainly fatal, and might be given in any liquid. The "powder of succession" was sweetish, adapted for children, and equally certain. Infernal miscreants, whose poverty rather perhaps than their wills consented, mixed freely in this horrible traffic from the tenth to the fifteenth centuries; but we trust that the formulæ are now lost for ever, and those acquainted with the powers of natural bodies, who may approach the composition, would do well to conceal it. The upas, the celebrated poison tree of Java, is now known to be fabulous; and the ticunas is much less virulent than it has been represented, or it has lost it powers by keeping. (Fontana.) The stories told of the formidable preparation of poison in South America are, we understand, very greatly exaggerated, perhaps wholly invented.

It is necessary to add, that the power of poisons, as we have seen in those of fish, are relative to the habits and constitution of the patient. Like the tyrant of antiquity, who used himself to all kinds of poisons that he might be proof against their attack, some may feed on what would be destruction to others. This immunity is, however, limited. No constitution is proof against the great variety of mineral poisons which we now possess; but we can fortunately trace their symptoms, their progress, and even detect the substance in the stomach of the victims. NO POISONER CAN NOW ESCAPE WITH IMPUNITY.

Animals are singularly exempt from the powers of some medicines highly deleterious to man. A horse can take a dram of arsenic daily, and improve in his coat and condition; and the nux vomica is not peculiarly dangerous to man, except in considerable doses, though it soon destroys brutes. The aloes is a poison to dogs and foxes, and somewhat virulent in the horse; for it is his only certain laxative. The coculus indicus is deleterious to fish and lice; yet it makes, we believe, a very salutary ingredient in the best London porter. The phellandrium aquaticum is fatal to horses and innocuous to oxen: the doronicum kills dogs; but fattens antelopes, thrushes, and swallows. Parsley seed is injurious to birds, and pepper to swine. Bitter almonds kill foxes, cats, and chickens. The seeds of hemlock are eaten without injury by stares, of stramonium by pheasants, of the lollium temulentum by jays, and the roots of henbane by pigs.

We are generally led to suspect the exhibition of a violent and active poison by the sudden attack. If a healthy man, after a plain dinner, a common drink, or an unsuspected medicine, is soon seized with vertigo, cardialgia, colic, vomiting, cholera, spasms, convulsions, great debility, faintings, or coma; or, if the lips, the tongue, the fauces, and the stomach swell, with a sense of heat, we may suspect that poison has been swallowed. If the discharge from the stomach given to a dog or cat kills it, or produces some violent disease, the suspicion will be strengthened. We must, however, keep in view what we have just said, that animals will often safely eat what is deleterious to man.

If death ensues, and we have an opportunity of inspecting the body, the suspicion will be farther confirmed if the stomach is inflated, or spasmodically contracted, gangrened, or spotty, without any previous disease to occasion these changes. If in the contents of the stomach, on dissection, we find any seed, root, leaf, or vegetable powder which we know to be dangerous; or if any such are found in the house of the deceased, the suspicion will almost amount to a certainty. Should the poison be of the mineral kind, modern chemistry has resources to discover it from the smallest quantity, however disguised. The peculiar properties of each occur in the respective articles from which a discovery may be made, and many circumstances will lead to a probable suspicion of what it may have been.

See Sprogel Experimenta circa Venena; Fontana sur le Venin de Vipere, &c.; Grævius de Venenis; Plenck's Toxicologia; Gmelin de Venenis; Murray's Apparatus; Thomas in the Memoirs of the Medical Society, vol. v.; Puihn Materia Venenaria regni Vegetabilis; Mead on Poisons; Baccius and Androynus de Venenis; Bell's Surgery, vol. i. p. 312; London Medical Journal, vol. iv.; Houlston and Wilmer on Poisons; Edinburgh Medical Commentaries, vol. iii. p. 121; Morgagni de Sedibus, &c. iii. 59.

VENO'SUS, (from *vena, a vein*). Botanically applied to a leaf, covered with anastomosing vessels.

VE'NTER, (from ενϊερον, *intestinum*). In the most extensive sense it is taken for a remarkable cavity, in which any of the principal viscera is contained; and the whole body is consequently divided into three venters, viz. the head, the breast, and belly. (See ABDOMEN). Hippocrates applies the word κοιλια sometimes to the cavity of the breast and abdomen, and sometimes calls the thorax the upper, and the abdomen the lower, belly; *venter* is a term usually confined to the lower belly. Among the chemists, *venter* is the same as *terra*, and *venter equi* is HORSE-DUNG. Among lawyers, it is the fruit of a single marriage.

VENTRI'CULI MO'RBUS. See CŒLIACA PASSIO.

VENTRICULO'SI. See CŒLIACA PASSIO.

VENTRI'CULUS, (a dim. of *venter*). See STOMACHUS.

VENTRI'CULUS SUCCENTU'RIATUS. See DUODENUM.

VE'NUS, (from the Hebrew term *jonah, concubitus*); *affrodyne*; the venereal appetite; hence *venus nimia, venus parca*, as it is indulged or repressed. On its due regulation the vigour of the constitution greatly depends, and too great continency often induces the languor which usually attends too great fulness, particularly felt from a turgescence of the seminal vessels.

In females too great continence often induces hysteric complaints, cachexy, and even hectic, though not the pulmonary hectic. It is the languid fever of hope delayed. The delicate and tender are soon injured by slight excesses of this kind. The alchemical name also for copper. See ÆS.

VEPRECULÆ, (from *vepres, a briar*). BRAMBLES. One of Linnæus's natural orders; but by no means a natural association. The genera are, *dais, daphne, dirca, gnidia, lachnæa, passerina, quisqualis, stelleria, thesium*

VERA'TRUM A'LBUM, (*quod mentem vertat*). See HELLEBORUS ALBUS.

VERA'TRUM NI'GRUM. See HELLEBORUS FŒTIDUS.

VERBA'SCUM, (quasi *barbascum*, from *barba, beard*, in consequence of its hairy stalk), MULLEIN, *candela regia, candelaria, lanaria, verbascum thapsus* Lin. Sp. Pl. 252. The GREAT BROAD-LEAVED MULLEIN, HIGH TAPER, or COW'S-LUNG-WORT, a biennial plant found under hedges, covered with oval, soft downy white, and woolly leaves, with a single woolly stalk, producing long spikes of yellow monopetalous flowers in July. The leaves have an herbaceous, bitter, subastringent taste, without any peculiar smell; but on chewing they manifest a mucilaginous quality, and are recommended internally and externally as emollients. They relieve, in fomentations or cataplasms, hæmorrhoidal tumours, and promote the resolution or suppuration of glandular indurations. The plant has been esteemed in consumption, catarrhs, and dysentery; but Dr. Home succeeded with it only in diarrhœa, where it apparently acts as a demulcent, and probably as a gentle astringent. The decoction is made of two ounces of the leaves to one quart of water, and a quart must be drank daily.

VERBA'SCULUM, (dim. of *verbascum*). See PARALYSIS.

VERBE'NA, and VERBENACA, (quasi *herbena*, the name of all herbs used in sacred rites); *verbena mas et cærulea, sacra herba, hierobotane, cephalalgia herba, mensa Jovis, verbena officinalis* Lin. Sp. Pl. COMMON VERVAIN.

The roots are fibrous, of a light brown colour, hard, bitterish, and irregular, sending up many stalks half a yard high, angular, solid, rough, of a purplish green colour, and branched; the leaves stand on the stalks in capsules opposite to each other, are hairy on both sides, wrinkled, deeply indented, and wide at the end next the stalk, of a deeper green above than below. The flowers, which blow from July to October, are ranged in long spikes, of a pale purple colour, divided into five parts at the top, succeeded by four small longish seeds joined together. It is found in highways, in chalky, gravelly, and uncultivated grounds, and has been celebrated for virtues of which its sensible qualities afford little expectation. It has no remarkable smell, and hardly any taste, and its credit is supported only by superstition. A modern author has, however, continued to recommend a piece of the root hung at the pit of the stomach as a cure for the scrofula; and an ointment made by boiling the whole plant in lard is recommended as useful in scrofulous ulcers. In the form of a cataplasm it has been said to relieve headachs (De Haen.) See Raii Historia; Lewis's Materia Medica.

VERBE'NA FŒ'MINA. See ERYSIMUM.

VERBESI'NA. See BIDENS.

VERBESI'NA ACMELLA, and LAVENIA. See ACMELLA.

VE'RMES, (from *verto, to twist about*). WORMS; *elminthes*, most commonly found in the intestinal tube; but occasionally in almost every other part of the body, particularly in the secreted fluids.

With worms were formerly confounded animals, but slightly connected with them, as the larvæ of insects, and some other animals; but worms, strictly so called, are divisible into two classes; those which have external organs, and those deprived of them. The latter are the most simple in their structure, and of these the intestinal worms are still more simple than the others. Worms, however, possessing external organs have been found in the bowels, and even the undisputed records of medicine notice the discharge of some singular worms of this kind. It is not improbable that ova may have been swallowed, and as whatever possesses life is unchangeable by the powers of digestion, the animal may have attained its larvated state when the irritation excited has brought on disease, or procured its evacuation. Numerous cases are recorded of peculiar animals, discharged from the bowels, of the most singular shapes; and what we have styled the "collections of wonders" increase the list to an incredible amount. To attempt to describe even the most remarkable kinds would be a tedious and an useless labour; for the forms and shapes are endless. The principal intestinal worms are confined to a few only, and the others must be considered as accidental, changed probably in their external appearance by their new situation and unnatural diet.

The worms of the human body are those which live in the intestines, and those found in other organs. Those of the intestines seem to be coeval with our existence, and a part of our constitution It is, therefore, as useless to account for their generation as to explain that of the various pediculi or other parasitic animals. If they are more common in children, it is probably from their bowels containing a larger proportion of mucus. Intestinal worms may be divided into the round and flat, each of which forms, according to the strict rules of classification, a genus The species of the round worm are the lumbricus, the ascaris, and the trichuris, the round, the thread, and the caudated thread-worm. The species of the flat worm are the cucurbutinus and the tænia. Of the lumbricus and tænia we have already spoken Vide in verbis.

The ascarides are small worms of a yellowish white colour, resembling threads cut in small pieces. The head is obtuse; the tail pointed; and at the head are three vesicles, between which the mouth of the animal is placed. A little below are two stigmata, apparently the organs of respiration. The sexes are distinct; but the male organs have not been discovered. The female is viviparous, and the young are excluded at an aperture about one-eighth of an inch from the head.

The ascaris generally resides in the rectum, convoluted in mucus and fæces, but it has been styled the maw-worm from its occasionally occurring in the stomach, and it has escaped farther into the colon, or from the rectum, into the pudenda.

Though the ascarides seldom appear but in the rectum, they are very frequently attended with a pain in the stomach, which has probably procured them the

name of maw-worms, producing an itching in the anus, which often occasions such uneasiness as to induce faintness, and sometimes to deprive the patient of sleep. The irritation is occasionally so great as to cause a sensible tumour round the anus; but as these worms are voided in the stools, their presence is always certainly known by seeing them there; for every symptom is wanting in some patients.

The *trichuris* is scarcely specifically distinct from the lumbricus and ascaris, differing only in the tail, which is twice as long as the body, and filiform. The animal has a proboscis, which he can withdraw at pleasure. Goeze considers the proboscis as the male organ; but the observations are not sufficiently extensive to ascertain these uncertain points. This worm inhabits chiefly the ileum; but occasionally every portion of the canal.

Strictly speaking, there is but one flat worm, the tænia; but one of its varieties, the *tænia solium* of Linnæus, *t. osculis marginalibus* of Dr. Hooper, suffers its joints to be readily separated from the parent head, and these are evacuated in separate worms, resembling a gourd seed, possessing, for a time, independent life, often escaping involuntarily per anum. They have been consequently called *cucurbitini*; but until the whole worm, including the head, is separated, there is no security against their return. The joints themselves, as Dr. Hooper observes, do not increase. This animal is by no means single, as has been represented; but even a single one occasionally occupies a large portion of the ileum. Their motion is undulatory by the successive contraction of the joints. The food is propelled through the alimentary canal in the same manner, often with considerable rapidity. The tæniæ are hermaphrodite, and the oscula are the apertures for the passage of the ovula. Carlisle in the Linnæan Transactions, ii. 225.

The true *tænia*, which we have already described (vide in verbo), is that with superficial oscula down one side, and there is a variety with a double row of oscula (Amœnitates Academicæ, ii. 28). In this species the ovaria are stellated round the oscula. The joints are shorter and flatter, and on this account it is styled the flat tape-worm. Both kinds are whitish; but this of the darker hue. It is always in the small intestines, and seldom exceeds five yards in length.

Worms seem to form a part of a healthy constitution, and are scarcely injurious but from accidental circumstances. This circumstance forms a striking distinction between animals and plants. Parasitic animals attack only debilitated plants; but the healthiest animals are chiefly affected with worms; and the observations which seem to contradict this arise from a neglect of the distinction between the existence of worms and their appearing a source of disease from their accumulation. Their formation is assisted by accumulations of mucus, and consequently in children, sometimes in cachectic patients, they become inconvenient; but are soon destroyed by every kind of fever. Sugar, fruit, and a variety of aliments, have been supposed to contribute to their formation or increase. It is not, however, the existence of worms, but their accumulation, and consequent irritation, that constitute disease. The signs of worms are few and equivocal: a pale complexion, picking the nose, grinding of the teeth during sleep, fœtid breath, a swelled hard belly, a swelling of the upper lip attend scrofula, and particularly accumulations in the stomach and bowels. There is no decided symptom but the discharge of worms; nor is it then certain but that all the tribe may be removed. Even a lumbricus has been found single.

The remedies of worms we have seen (Materia Medica and Anthelmintics) are such as destroy or evacuate the animals. The male fern root undoubtedly kills the tænia, the helleborus fœtidus the lumbrici; but for the ascarides we have no certain medicine, though many which are of singular utility: oily injections, infusions of tobacco, of hepar sulphuris, solutions of asafœtida, and of aloes, followed by calomel or aloetic purgatives, soon evacuate immense numbers; and, if continued, appear to discharge the whole mass. But, for the reasons assigned, the seminium morbi seems in the stomach; and warm tonics, with occasional aloetic purgatives, are necessary to prevent the return. These, however, will not wholly succeed.

The medicines which poison worms we have enumerated at some length in the catalogue of the materia medica, as it was supposed we have really so few. We scarcely, however, want more than those at present mentioned; for they are very generally certain. The Indian pink, which is often trusted, frequently deceives in this climate, probably from a loss of its virtues in keeping; but with this, and every other of the poisonous anthelmintics, laxatives, generally active ones, must be frequently interposed.

With all our care in compiling the catalogue of anthelmintics we find some medicines of importance omitted. Among these is sulphur in substance, or infused with magnesia (Kenney in the Irish Transactions; and Stoll Prælectiones, i. 50); the salix laurea; the aralia spinosa (Greive in the Medical Commentaries, Edinburgh); the sabadillæ semen; sedum minus (Stoll Prælectiones, i. 50); copper and its preparations; turpentine, with the animal oil from horns (styled *Chabert's medicine*); the gall of an ox; petroleum; pisselæum; and Herrenschwand's remedy, which consisted chiefly of the gutta gamba.

In other parts of the body there is scarcely a cavity or a stagnating fluid which does not occasionally contain worms, nor need we minutely follow the disgusting catalogue. The worms of the intestines are discovered often in the cavity of the abdomen, escape at the navel, into the biliary ducts, or sometimes through the œsophagus; but the indications which such appearances afford are easily followed. The other worms chiefly show the necessity of preventing stagnations of fluids, and the great advantages of the most nice cleanliness. The fasciola sometimes appears in the liver, particularly of sheep, said to be affected with, or die of, the rot; and a similar cause has been supposed to occasion cachexy in the human species. The position, however, is gratuitous; nor, if admitted, would it probably lead to any practical consequence.

Dr. Biss extols the bastard black hellebore as a most certain destroyer of the round worm; but purging, by lessening the slime, always relieves; and probably the worms that are not forced away by this quickened motion of the intestines may, for want of mucus, languish and die. It does not appear that one kind of purge, if active, is preferable to another, let the kind of worms be what they will; the worms being always defended from the immediate action of the medicine by the slime; and,

therefore, purges which act briskly, and of which a frequent repetition can be borne, are the best. Of this sort are purging waters, particularly the sulphureous, jalap, &c. Dr. Stork says that he hath destroyed all sorts of worms, viz. the round, ascarides, and the tape-worm, by the following mixture, repeated as here directed. ℞. Sal. polychrest. pulv. rad. jalap. & rad. valer. silv. āā ʒi. ox. scillit. ℥iv. m. exhibeatur adultis quater per diem ʒss. junioribus vero ʒi. aut ʒii.

See Andry on Worms; Doeveren Observations Physico-Medicales sur les Vers qui se forment dans les Intestines; Dionis sur le Tænia; Hoffmann de Animalibus Humanorum Corporum infestis Hospitibus; Stoll Prælectiones, i. 252; ii. 417; Ejusdem Ratio Medendi, vi. 7; Edinburgh Medical Commentaries, vol. iv. p. 283, &c.

VERMINO'SA FE'BRIS, (from *vermis, a worm*), a disease of children, supposed to arise from worms, and to be peculiarly obstinate and dangerous. It is often attributed to worms when the cause of the disorder is of a very different nature; for though their irritation may produce a fever, these cases are peculiarly uncommon. This also was the opinion of Dr. Hunter, who found no worms in dissecting those who were supposed to die of this fever. The most common cause is a diet of substances not easily digested, particularly pastry and sweetmeats. When the cause has gradually accumulated, the patient grows, slowly, weak, and languid; his colour becomes pale and livid, his belly swells and grows hard, appetite and digestion are destroyed, the nights are restless, sleep disturbed, and fever soon comes on, attended with coma, and occasionally with convulsions. The pulse at the wrist, though quick, is never strong; but the carotids beat with violence, and their action may be distinctly seen at a distance. The heat is at times considerable; but when the brain is much oppressed, little more than natural. It is sometimes accompanied by a violent pain in the epigastric region, though more commonly the pain is slight; but some degree of it distinguishes this disorder from other comatose affections. Where a large quantity of fruit has been eaten at once, the attack is said to be instantaneous, and its progress rapid; but discharges, either natural or artificial, soon relieve it with little danger, and from fruit alone, independent of the stones, no inconvenience, except colic pains, seems to ensue.

We certainly see few such complaints as this wormy fever at present. The common fever of indigestion seems to have been raised into importance by this name; sometimes the hydrocephalus appears to have been mistaken for it; and occasionally the pampered minion of the nursery may, from accumulated crudities, experience the chronic kind of the disease first described. The plan of cure formerly employed was not adapted to lessen the complaint. An emetic and a gentle laxative were reluctantly admitted, and a dose of calomel of three or four grains was then supplied by prepared pearls, Gascoyne's, or the countess of Kent's, powder; remedies which could not always boast even an absorbent power. It is not surprising that the disease was often fatal; for the inert or injurious medicines just mentioned were not very powerfully seconded by the warm oils applied to the pit of the stomach, or the bitter decoctions as fomentations to the abdomen.

Dr. Butter denies that this disease is occasioned by worms, and thinks that they merit no consideration in practice. He distinguishes the infantile remittent fever by drowsy exacerbations, wakeful remissions, pain of the head and belly, total loss of appetite, little thirst, and slimy stools; adding, that this fever is accompanied with many symptoms which seldom occur together in the same case, and constitute three varieties. These varieties he names the acute, the slow, and the low infantile remittent fevers, of which the causes are irritability and indigestion. The fever may be accelerated by cold, fatigue, &c.; but the principal causes are crude accumulations in the first passages, which irritate the intestinal canal, and soon induce fever. The two symptoms commonly attributed to worms, loss of voice and speech, he refers to debility. In the cure, Dr. Butter thinks that one indication only is to be regarded, viz. the removal of the febrile irritation by rest, quietness, and stillness. The bed-room should have little light; diluting and nourishing drinks be frequently given; and solid food not allowed. The neutral salts are supposed to be useful by abating the intestinal stricture, and rendering the bowels rather lax. For a child of five years old, a dram of the salt dissolved in four ounces of water may be divided into doses, and given so as to keep the bowels open; in general, when the fever is low, one stool should be produced every day, two in the slow and three or four in the acute kind. When the bowels are rendered soluble, nitre may be used instead of the purging salt. If a looseness attends, five grains of the extractum cicutæ, with a dram of sugar, may be diffused in four ounces of water, and an ounce given every four hours. In the slow kind of this fever the cicuta is preferred to that with the salt, and an additional grain for every year of the patient's age may be given, as already directed. If required to keep the belly lax, when the extract is used, the sal polychrest may be given twice a day, or as much rhubarb every night as may be required.

This management is not, however, generally adopted, probably from its inefficacy. In fact, the bowels of children are not easily moved with effect, and slight laxatives agitate and irritate without benefit. The resin of jalap, gutta gamba, but, above all, calomel, produce large and effectual stools, with certain relief, nor do we gain any essential benefit without such evacuations. If these are procured, the child nourished with a suitable diet, in free cool air, he generally recovers.

Various wormy epidemics are described by authors, particularly by Van den Bosch (Constitutiones Epidemicæ Verminosæ quæ, Anno 1760, ad 1763, grassatæ fuerint); by Ballonius (Opera, i. 25); Huxham (i. 284); Van Swieten (Commentaria, iv. 720), and others; but they seem to have been only common fevers, attended with considerable discharges of worms, though Bosch endeavours to reduce every fever to this cause. In short, there is only slight evidence that fever ever arises from worms as such, though occasionally from the loads of mucus which they accumulate. See Medical Transactions, vol. i. p. 45—59.

VERMICULA'RES, (from *vermis*); long and slender like a worm. See LUMBRICALES MUSCULI.

VERMICULA'RIS. See SEDUM.

VERMIFO'RMIS. A prominence of the cerebellum, shaped like a worm. See CEREBRUM.

VE'RMIS REPENS, et MO'RDICANS. See HERPES.

VE'RNIX, (*quòd veruo tempore fluat*). See JUNIPERI GUMMI.

VERO'NICA, (from the Arabian word *verukah*); *betonica Pauli, thea Germanica; chamædrys angustifolia spuria; chamædrys latifolia Europæa*, FLUELLIN, and MALE SPEEDWELL. *Veronica officinalis* Lin. Sp. Pl. 14, is a low, hairy, trailing plant, with firm leaves set in pairs. From the joints arise slender pedicles, bearing spikes of blue monopetalous flowers, each of which, like the cup, is divided into four segments, followed by a flat bicellular capsule, which opens at the upper broad part, and sheds small brown seeds. It is perennial, grows wild on sandy grounds and dry commons, and flowers in June.

The leaves have a weak but not disagreeable smell, which in drying is dissipated, and which they yield in distillation to water, without any separable oil; to the taste they are bitter and rough. They yield their virtue most perfectly to spirit.

An infusion of the leaves drank as tea is diuretic, and considered as salubrious in disorders of the breast; the water distilled from them is called European tea, and sometimes preferred to the Asiatic. See BETONICA.

VERO'NICA AQUA'TICA, &c. See BECCABUNGA.

VERRICULA'RIS TU'NICA, (from *verriculum*, *a net*). See AMPHIBLESTROIDES.

VERRU'CÆ. WARTS, are small sarcomata rising on the cutis, and supplied by the little arteries of the surface, which, however, seldom extend far into its substance, as the surface, when of any bulk, is hard, ragged, and insensible. When it arises with a broad basis, it is called *verruca sessilis*; and when a few capillaries sprout and enlarge into a greater compass, the pensile tumour which they form is called *acrochordon*. The extreme sensibility of the base of a wart renders its connection with a subcutaneous nerve highly probable.

Warts are generally removed by incision, by ligature, a caustic, the juice of celandine, of esula, the gall of the pike, or of the eel, the mineral acids; and, after the surface is destroyed, by savine powder. Muriated ammonia, moistened and rubbed frequently on a wart, aqua kali, and ammoniæ, have been employed; but the most serviceable remedies are a tincture of muriated iron, or a solution of nitrated silver. Oils, pyroligneous acid, the meloe proscarabæus, the milk of a fig, &c. have been employed. The warts of young people often at a certain period naturally decay, and this has given credit to a variety of charms. Yet so many appear to have been of service, that we are almost tempted to think that the power of imagination has some effect. We have already remarked their connection with the subcutaneous nerves, and when a wart is removed by a caustic or a ligature, the pain is by no means confined to the part, but is often more severely felt in an adjoining one. After the wart is removed, a little suppuration should be encouraged. Venereal warts are cured in the same way; but are not influenced by mercury.

When warts are on the joints, they are with difficulty separated without hurting the tendons, and the livid and blueish warts on the face, lips, or eyelids, occasionally become cancerous. These should not be disturbed. See Heister's Surgery; Tissot's Advice to the People; Bell's Surgery, vol. v. p. 532; White's Surgery, p. 80.

VERSICA'RIA VULGA'RIS. See ALKAKENGI.

VERTEBRALIA OSSIA, synonymous with the PARIETALIA, q. v.

VERTEBRALIS ARTERIA. A branch of the subclavian passing through the vertebræ within the cranium. It there joins with the vertebral artery of the opposite side, forming the basilar, the internal auditory, and the posterior artery of the dura mater.

VE'RTEBRÆ, (from *verto, to turn*). See SPINA. The *spine* is sometimes carious from a blow (Cheston), occasionally from other causes (Medical Transactions, ii. 18). In many cases, the vertebræ have been found anchylosed (Morgagni de Sedibus, lvi. 30; Callisen in Actis Hafniensibus, ii.). A vertebra is sometimes fractured, either with or without luxation; and one instance is recorded in the Medical Commentaries, where a vertebra of the neck was broken by the shock only of a fall (Morgagni de Sedibus, lvi. 35). Luxations of the vertebræ are either partial, occasioning distortion, or general. The latter are most commonly fatal. Dr. Hall, in the Medical Commentaries, has described a case in which the vertebræ spontaneously receded, lessening the compression on the spinal marrow; a circumstance which probably happens more frequently than has been supposed, since, as we have mentioned, paralyses from distortion gradually amend.

VE'RTEX, (from *verto, to turn*). The CROWN of the HEAD, where the hairs turn, *coryphe*.

VERTICILLATÆ, a natural order, containing the herbaceous vegetables which have four naked seeds, and the flowers placed in whorls around the stalk. Mint, sage, and thyme are of this order, and they are all warm and fragrant.

VERTI'GO, (from *vertendo, turning round*). SWIMMING OF THE HEAD, *dinos ilingos*; when accompanied with a mist before the eyes, *scotodinc*; when with a sensation of sparkles, *scotomia*. It is generally symptomatic, and differs chiefly in degree; for in a simple vertigo, there is only a transient and short gyration of objects; in the dark vertigo, or scotomia, the sight fails as if several colours were before the eyes; and in the kind called *caduca*, the patient falls insensible.

The causes often exist in the brain, and are either a depression of the cranium, an extravasation of blood, serum, purulent matter, or water; sometimes hydatids or a distension of the larger vessels, an unaccustomed motion, as of a ship at sea, or riding backward in a carriage, and even the sight of a cataract, or a view from a precipice, will produce it. On the other hand, causes of debility, which, as we have observed, prevent the free communication between different parts of the brain, will occasion the same symptoms. These are the deleterious gases, great evacuations, excess of drinking, and different narcotics. But the most frequent causes are an accumulation of saburræ in the primæ viæ, and the stoppage of some accustomed evacuation, repelled eruptions, and retrocedent gout. When the cause is ascertained the cure is easy, and has been already described in the different articles to which the disease must necessarily be referred.

VESA'NIÆ, (from *vesanus, mad*); *dementiæ*, ALIENATION OF MIND, the fourth order of the class *neuroses* in Dr. Cullen's system. An injury of the functions of the mind in judging, without pyrexia or coma. Under this order are arranged AMENTIA, MELANCHOLIA, MANIA, and ONEIRODYNIA.

VE'SICA URINA'RIA, (dim. of *vas, a vessel*). *Cystis urinaria*. The URINARY BLADDER, is of an oblong form, membranous and muscular, lying between the symphysis of the pubis and the upper portion of the rectum. In a moderate state it is wide, and rounded above, lessening as it proceeds towards its aperture, which is formed without the little sack below, observable in the bladders of brutes. In fact, though the neck of the bladder is employed as an appellation of the lower portion, there is no part which strictly merits that name. When full, it is somewhat broader below than at its upper part, styled the fundus.

The peritonæum covers the bladder at the sides and on the posterior part; but only a short way beyond the fundus in front (see LITHOTOMIA). Within the peritonæum is the muscular coat, the greatest part of the external fibres of which are longitudinal, arising from near the prostate gland. These diverge in different directions till they become circular, and on the inside a very complex net-work of fibres, running in all directions, is conspicuous. The prostate gland seems the fixed point, but, in general, the bladder contracts, like every round muscle, till it overcomes the resistance of the fibres at the aperture, which is styled the sphincter, though in reality there is no regular organisation which deserves that name. The fibres are only somewhat more numerous and more firmly compacted in that part. The inner coat is a firm thin membrane, to prevent transudation. Winslow describes it as glandular, though, on a strict examination, no follicles are discoverable. A mucus is, however, separated from it, and in a contracted state of the bladder this internal membrane is rugous, and in danger of injury from an imprudent use of the catheter.

The bladder is subject to a variety of diseases, many of which have been mentioned under the appropriate heads (see ISCHURIA, DYSURIA, CATARRHUS VESICÆ, CYSTITIS, CALCULUS, &c.). It is sometimes subject to *suppuration*: but the matter discharged, though apparently purulent, is often mucous; if pus, it may be separated from the kidneys, may find its way from the intestines, or from metastasis. The previous diseases will ascertain its source. In some of the monsters exhibited to the public the bladder is *deficient*, and the ureters terminate near the navel; and it is sometimes so much *distended* as to rival the uterus at the seventh month. In a few instances it has been found *divided* by a septum (Fothergil, in London Medical Observations and Inquiries; Ruysch Observationes, N°. 8), occasionally forced into the umbilical region, or through the parietes of the abdomen.

On the other hand, the bladder has been unusually *contracted* by a thickening of its coats, the effect of a difficulty in voiding the urine when long continued, particularly in calculous cases (Morgagni de Sedibus, &c. xl. 4; Ruysch Obs. 86): it is sometimes cartilaginous, coalesces with the colon, is filled with coagulated blood or hydatids, or contracted by spasm. In the difficulties found in moving the catheter round the bladder, each cause should be kept in view, and our conduct varied according to the information obtained of the preceding circumstances.

Extreme sensibility and pain of this organ sometimes arise from slight chronic inflammation, occasionally from excess of stimulus, as after repeated dysuria in consequence of blisters, or catarrhal inflammation; from excoriation or sarcomatous tumours. These are chiefly relieved by opium with camphor, by warm applications or blisters to the perinæum, and, according to Ramazzini, by petroleum. *Wounds* in the bladder are rarely fatal; but they sometimes leave intractable fistulous sores, through which the internal membrane appears to slough off.

The bladder, though often apparently, is sometimes really, *ulcered*, and we then find a highly fetid smell in the urine, and pus indisputably discharged. Though such ulcers sometimes arise from calculi, they are often depositions in the decline of life, or arise from the irritations of foreign bodies, which we shall soon mention. The constitution by the discharge is much debilitated, and the patient soon sinks under the disease. The Spa and Bristol waters are supposed to be peculiarly beneficial in this complaint. The bark, the balsam Peru, uva ursi in large doses, lime water, with a milk diet, and mucilaginous injections, are also recommended. The ulcer sometimes opens into the colon, the rectum, or the perinæum; but seldom with advantage. If the abscess is from violence, in a young and otherwise strong constitution, it may heal; but this salutary termination is rare.

A *rupture of the bladder* has been occasioned by the rash incautious introduction of a clyster pipe, by difficult labour (Van Doeveren Specimen Observationum Academicarum, p. 83), by a fall, by ischuria in a pregnant woman (Medical Observations and Inquiries, iv. N° 4 and 36), by calculi, and external violence. If the bladder had not been long previously distended, so that its irritability be uninjured, a cure may be expected; but, in the opposite circumstances, it is soon fatal. A puncture of the bladder, either above the pubes, through the rectum, or vagina, we have already mentioned among the remedies for ischuria.

Foreign bodies are often found in its cavity. They are of almost every kind which can be forced through the urethra, or generated in this organ. A portion of a bougie, a piece of a leaden catheter, a needle, a leaden shot, the lash of a whip, worms, hydatids, bones, and hair, have been mentioned. These soon become nuclei of calculi, and, unless removed, may induce the disease. They have been often found in the centre of the hardest urinary concretions.

The ligamentous vestige of the urachus upon the fundus of the bladder is seldom, except from disease, pervious. The ureters pass obliquely through the coats of the bladder, and thus the effect of valves is produced. The arteries are from the hypogastric or internal iliac, branching from the arteria sciatica, epigastrica, and umbilicalis, on each side. The nerves are from the crurales and the sympathetici maximi, by means of their communication with the crurales, though some branches are from the plexus mesentericus inferior. See Haller's Physiology; article RENES; Winslow's Anatomy.

VE'SICÆ RA'RUS MO'RBUS, *Hoffmanni*, a copious discharge of mucus with the urine. See CATARRHUS VESICÆ.

VE'SICÆ DISTILLATO'RIÆ. See CUCURBITA.

VESICA'NTIA, VESICATO'RIA, (from *vesica, a bladder*; because they raise bladders on the skin). See EPISPASTICA.

VESICA'RIA MARI'NA NI'GRA. See ALCYONIUM, FARRAGO.

VESICATO'RIA EMPLA'STRA. See CANTHARIDES.

VESICATO'RIUM. See CATAPLASMA, EPISPASTICA.

VESI'CULA, (a dim. of *vesica, a bladder*), *folliculus fellis*, the GALL-BLADDER, is placed a little to the right under the great lobe of the liver, in a sulcus on its under side, in the fissure between the two lobes, attached to the substance of the liver, and receiving a coat from the peritonæum. In a standing posture it lies forwards and downwards, and its fundus is raised by a fulness, or depressed by the emptying of the stomach. Its coats resemble those of the intestines, except that the inner is neither villous nor papillous, but a net-work of folds in every direction. The hepatic and cystic ducts run almost parallel, and quite contiguous to it, and uniting, form the ductus communis choledochus, which joins, in its course, the ductus pancreaticus, and opens into the duodenum, in the most depending concave part of the intestine. The gall-bladder is sometimes of an enormous size, and occasionally ruptured, either by the distention of its contents, or by a calculus. In Hautesierk's collection is a case in which it was found more than seven inches long, appended to an infarcted liver; and Petit, in the Memoirs of the Academy of Surgery, speaks of its being distended to such a size as to resemble an abscess of the liver. It is sometimes inflamed (Stoll Ratio Medendi, vii. 126), sometimes deficient, occasionally filled with calculi (see CALCULUS), the seat of abscesses. Worms, it is said, are sometimes found in it. Winslow's Anatomy; Haller's Physiology. See JECUR

VESI'CULÆ, (from *vesica*). Elevations of the cuticle irregularly circumscribed, containing a transparent fluid. When the fluid is dark they are styled *phlyctenæ*.

VESI'CULÆ DI'VÆ BA'RBARÆ. See VARIOLA CONFLUENS.

VESI'CULÆ GINGIVA'RUM. The THRUSH. See APHTHÆ.

VESI'CULÆ MALPIGHIA'NÆ. See ASPERA ARTERIA.

VESI'CULÆ SEMINA'LES are two membranaceous cellular tubes, lying on each side between the bladder and the rectum, on the outside of the vasa deferentia; they are in length about three inches, and one broad, convoluted like the intestines, and kept in their situation by a ligamentous membrane, the internal fibres of which are apparently muscular. The inside of the vesiculæ seminalis is cavernous and villous. In some instances calculi have been found in them.

VESPA, (*a wasp*). The sting of this little insect, like that of a bee, conveys a venom, which often leaves an inflammation, and a troublesome suppuration, sometimes, it is said, a gangrene. The aqua ammoniæ or the aqua kali are the quickest and most successful remedies.

VESTI'BULUM, AN ENTRY; an irregular round cavity between the cochleæ and semicircular canals, not quite so large as the tympanum, and situated rather more inward and forward. See AURIS and SONUS.

VESTI'GIUM, (from *vestigo, to seek*). See METATARSUS.

VESTITUS, (*à vestiendo*). DRESS. In considering this subject we must first notice the materials, and then the forms, of our garments; but on these subjects we have anticipated the most material topics, and we were long in doubt whether it were necessary to resume at any length the consideration, or to connect the scattered fragments into one view. We were determined, by reflecting that the subject had not yet been offered to the public eye free from gross errors.

The materials of our dress are, wool, cotton, flax, silk, and fur. Woollen garments are undoubtedly the most salutary in this climate whose perpetual changes are by its means resisted; and it is remarked that hectics have become incomparably more common in Scotland since the plaid was disused. From their structure, as explained in the article CALORIC, q. v., heat penetrates slowly, and the cold air is effectually guarded from the body, so that it preserves the same steady temperature. Another advantage is the affinity of woollen to water, which it retains rather in the form of a vesicular vapour than of a fluid, so attenuated are the fluid particles by its minute fibres, which even the unassisted sight can discover. This quality renders it highly useful when sweating naturally comes on, or is artificially induced. The water is immediately absorbed, and its coldness concealed. If no longer in contact with the body, flannel is not cold, nor does it induce any chill.

An inconvenience arises from its warmth, which is debilitating, and this effect is increased by the perspiration which it excites. As its dirt is hid, the excrementitious fluids are allowed to remain; as they are not seen, it is not duly changed. The former inconvenience is lessened by choosing the thinnest flannels, and the latter by frequent washing in a manner which prevents its thickening, viz. by employing water of a very moderate temperature, not exceeding 98°. The constant stimulus which it keeps up on the surface is rather inconvenient than injurious.

Cotton partakes of the advantages of flannel, though in a very inferior degree; yet, if the texture be loose, as in the calicoes, it is often a convenient substitute. But we still want a fabric which shall come near the swanskin (flannel) in substance, and preserve the softness of cotton. Raising the pile on the internal surface, as in the fleecy hosiery, makes it too warm for general purposes, and the common calicoes are neither sufficiently soft nor thick. Cotton is now used as a substitute for linen in shirts, and we think the change highly advantageous; but to accommodate this material to prejudice or fashion, its texture is too compact, and it is wove and finished in a manner too nearly resembling linen. *Thread*, as a material of stockings, holds a middle rank between cotton and silk.

Whatever may be the dictates of health, however wise the voice of the charmer, the comforts of *linen* will always secure a demand for this article. The luxury of a clean shirt of this material was one that the Romans, in the plenitude of their power, could not obtain, and to the healthy it is safe and salutary. To change it at night, and again in the morning, is a modern refinement, which merits our commendation. It not only secures cleanliness, but, by renewing the air between the linen and the body, becomes an air bath, which greatly assists insensible perspiration. The advantage of renewing the air is sensibly felt by nurses,

and all those obliged to sit up a whole night; for they find themselves always relieved by relaxing the ligatures, and even shaking their linen, if they do not change it.

Silk has no affinity to water, and should never be worn next the skin. A silk stocking will indeed keep the feet cool; but the foot is chafed by the perspiration, and, on cooling, a shiver is soon induced. Above the linen it may be worn with safety in hot climates; but the frequent changes of temperature in these regions render it highly dangerous, unless the disadvantages of sudden cold are guarded against by flannel below. Oil silk retains the heat of the body, and keeps up constant perspiration: it is used, however, only as a topical diaphoretic, and not as an article of dress.

Fur is seldom worn next the skin but for the same purpose. It partakes of the disadvantages of flannel, at least those which arise from its stimulus; but does not possess the advantages derived from its affinity to water. It is dirty also; for it does not easily admit of cleaning, and is a harbour, not only for insects, but for infections of the most fatal kinds. It is necessary in the higher latitudes, where the cold is intense; but should be banished from the more temperate. We now allude to its use next the skin, not to its employment as an external ornament and defence.

The changes of dress should be adapted to the seasons, being cautious to wear the winter clothes in this country, till summer be fully arrived. Our ancestors thought the limits very extensive, when they advised keeping on "the winter clothes till May be done;" but the seasons are at present later, as is evinced even by the *May-duke* cherries, which seldom ripen in the southern districts of this island till the middle of June. The period should, therefore, be extended; but modern refinement has interposed a demi saison, in which the winter dress is partly changed. This too we consider as highly salutary; for the change is not then too great at once, and the frequent change of clothes admits of their being at least aired, if not washed. We may be considered as advocates for modern fashions, and, like the authors on fleecy hosiery, to have a secret communication with Bond-street. In fact, however, it is a subject which we have for years considered with attention. Within our own remembrance, a man of fifty was sallow, dirty, often diseased. At this time the father and son appear scarcely to differ, and often differ very slightly. Though much may be ascribed to the art of the friseur and dentist, the change which time really makes is inconsiderable in comparison, and we ascribe this slight alteration in a great degree to the frequent changes of dress, on the principles already described. It was not unusual to wear the same suit from the gloss of novelty till it was no longer decent; and to change the linen three times a week was an extraordinary sacrifice to appearance. The other circumstances of cleanliness, particularly in the hair and teeth, undoubtedly contribute to preserve health; but the frequent changes of clothes and linen, with the use of such as require washing, has highly contributed to the prevention of disease and premature old age. The disuse of snuff and tobacco has also had its share in the event. Let us, however, repeat, and strongly inculcate, that the changes of dress should not be sudden, that the first appearance of a sunny day should not draw us from our woollen clothes, into nankeens and silks.

Dryness and warmth of the extremities are circumstances of the utmost importance to health, and in gout, any complaint of the head or breast, or a disposition to cutaneous diseases, particular attention should be paid to the feet. The shoes should be carefully guarded, so as to admit no moisture, the stockings warm, and frequently changed, the feet often washed, and daily rubbed. The water employed should be temperate only, and very little exceeding the heat of springs, about 62° of Fahrenheit. The stockings most salutary are of worsted; but cotton may be allowed, if changed daily; silk should not be worn, at least without woollen or cotton socks.

The natural covering of the head is the hair, and, in every view, this should be worn, if nature has not denied it. The substitute, a wig, is dirty, unhealthy, and inconvenient. It is not adapted to absorb perspiration, which is consequently confined, and occasionally cold, nor does the discharge really compensate for the natural one of the hair and the mucus of its bulbs. A wig has all the inconvenience of a silk dress, and not a single advantage, except saving a little time and trouble. The hair must be daily combed: the wig is dressed in a shop, though often on the head. In general, the head should be kept cool; for all salutary perspiration is promoted by coolness. Even our common felt black hats are too warm for summer.

The *form* of dress requires some attention. All strait ligatures should be avoided, particularly about the neck; and, in general, the breast should not be exposed to the air. The coat, for we now chiefly attend to the gentlemen, may be cut as fashion dictates, if its tyrannic sway does not order too strict confinement in the arms, and a consequent compression on the axillary artery. The waistband of the breeches usually surrounded the ossa ilea, which prevented any injurious pressure on the hypogastric region. We have now exchanged with the softer sex, who have rejected the pressure of the stays on the abdomen, and our breeches are raised to the pit of the stomach. They are, however, wisely supported by braces over the shoulders, and, instead of ligatures, the stockings, if any are worn, (for the constant use of boots renders it doubtful) should be kept up in a similar way. Garters over the knee do not compress any vessel of importance, as the tendons of the flexors of the leg guard them; but below the knee they occasion varices, swelled legs, ulcers, and a train of evils.

Of shoes, much might have been said; but fashion has wisely interposed, and both sexes now tread firm on the foot as nature made it. We follow too the advice of Camper, and have a shoe for each foot. It is fortunate when fashion is content to follow the dictates of health. Boots compress the calf too much, and impede the circulation. Nothing can be more inconvenient and unsuitable as a walking dress.

Of female dress, we had intended to speak; but we find little to add, except the application of the principles already laid down. The female form is now permitted to expand luxuriantly; but to give it fulness, the shoulders are forced back so as to impede the circulation in the upper extremities, and the clothes tightly bound around the lower part of the sternum. Much

inconvenience is, however, avoided by supporting them over the shoulders by braces. The covering of the bosom is too close by day, and too inconsiderable in the evening; for, though the drawing-room and the opera-house are warm, carriages and lobbies are cold, and many a victim is thus sacrificed to the shrine of fashion. The custom of wearing drawers is convenient; but we think not salutary. The chief female diseases of those regions are from relaxation, and the free access of cool air is useful. We shall not interfere with the moralist in the reasons which he may adduce in their favour.

VETERINARIA ARS. The art of medicine as applied to horses. See White's full and excellent Treatise on Veterinary Medicine.

VETE'RNUM, (from *vetus*; a disease attendant on old age). See ANASARCA.

VETE'RNUS, (from the same). See CAROS.

VETO'NICA, also VETO'NICA CORDI. See BETONICA, and CARYOPHYLLUS RUBER.

VI'A LACTE'A. See GALAXIA.

VIÆ PRIMÆ, *the first passages*, generally include the stomach and duodenum; and when we speak of the consent of the stomach with other parts we often include the duodenum.

VI'BICES, (from ἴβυξ, because they resemble the marks or stripes on the skin raised by beating with whips or other instruments). Purple spots and weals under the skin, of a scarlet colour, sometimes called *stigmata*.

VIBRATIO, (*à vibrare*), applied to the supposed undulating tremulous motions of a nervous fluid.

VIBRISSÆ, (from *vibro*). Hairs growing in the nostrils.

VIBU'RNUM, (*vieo, to bind with twigs*; from its use in making bands); *lantana, camara, viburnum lantana* Lin. Sp. Pl. 384, PLIANT MEALY TREE, WAYFARING-TREE, an arborescent shrub, whose wood is fungous, the leaves resembling those of alder, the flowers in umbells, small, like those of elder, white, and quinquepetalous, succeeded by berries, at first green, then red, and at last black, sweet, and viscous. This shrub is found in hedges, and clayey uncultivated grounds. The leaves and berries are astringent, but it is never used. See Raii Historia.

VI'CIA, (from βικος, *a pitcher*; from the shape of its pods). The TARE or VETCH, *bicion, cracca major, vicia cracca* Lin. Sp. Pl. 1035. The pod is full of roundish or angulated seeds; the leaves are numerous, pinnated, and generally conjugated by pairs to a rib which ends in a tendril. Vetches are considered as heating and astringent; and a decoction with raisins, figs, and liquorice, has been given in the suppurative state of the small-pox to fill the pustules.

VICTORIA'LIS, (*victoria, victory*, from the sword-like shape of its leaves). *Allium victorialis* Lin. Sp. Pl. 424. See OPHIOSCORDON.

VIDA'MARAM. See SEBESTEN.

VIGILANTIA, (*à vigilo, to watch*). VIGILANCE, SLEEPLESSNESS. See PERVIGILIUM and SOMNUS.

We resume this subject to remark that watchfulness is often of itself a disease, which we cannot explain. In fevers we perceive a constant irritation from an increased determination to the brain, and, as already hinted, literary persons, from the increased sensibility of the sensorial organs, in consequence of continued attention, do not experience the recurrence of the regular collapse. Those used to deep investigations, when the cause is removed, do not recover that equilibrium which disposes to returning sleep. The deepest thinker, who could dispossess himself of his cares and calculations, was the late much lamented Mr. Pitt. We sometimes find this watchfulness in children without an evident cause, and sometimes without danger; but it generally gives a most decided indication of internal disease, and ought to call forth all our attention. In general, vigilance blunts the sensations, prevents the regular associations of thought, the deductions of reason, and impairs the sound decisions of judgment. It induces fevers, apparently hectic, with dyspepsia, costiveness, &c.; while the latter in hypochondriac persons apparently brings on sleeplessness.

VI'NCA PERVI'NCA, (*vincio, to bind*, from its use in making bands); *clematis, vinca major* Lin. Sp. Pl. 304, the GREATER PERIWINKLE. From a stringy, creeping, fibrous root spring smooth, long, creeping, slender stalks. The flower is monopetalous, followed by two pods, containing oblong, sulcated, and almost cylindric seeds. The plant grows on banks at the sides of ditches; and an infusion of the leaves is recommended in fluor albus, hæmoptoë, hæmorrhoids, and excessive menstruation. See Raii Historia.

VINCETO'XICUM, (from *vinco*, and *toxicum*). SWALLOW-WORT. See ASCLEPIAS.

VI'NI SPI'RITUS TENUI'OR and RECTIFICA'TUS. See VINUM ADUSTUM.

VINUM, (οινος, from the Hebrew term, *ion*). WINE, *Bacchus*. (See ŒNUS). The juice of fruits, chiefly applied to the fermented juice of the grape.

It is not now necessary to engage in the doctrine of fermented liquors; but it is sufficient to remark, that the thinner wines are more subject to fermentation, and possessing a smaller proportion of saccharine and extractive matter, hasten more rapidly to the acid state. To correct this tendency, they are sometimes boiled, and thus rendered richer; or the progress of fermentation is checked by the fumes of sulphur.

These means are well adapted to preserve, for a time, the weaker wines; but, if neglected, they soon become acid, though, if the same plans be adopted to check the fermentation of the richer wines, in their earlier periods, the spirit will not be produced in sufficient quantity, and they will become vapid.

The ancients had a considerable variety of wines, and were peculiarly attentive to the management of the fermenting process. To detail the directions of Pliny, Athenæus, Varro, &c. at length, would be improper in this place, and it is sufficient to observe, that, in the early period, they accelerated the fermentation by artificial warmth. This was really the design of the *fumaria*, not to check the fermentation, as in the modern method of smoking a cask. The taste and smell of the smoke were, however, imbibed by the wine, and the slightly baked amphoræ were the best means of destroying both. This seems to be evident from the lines of Horace, which have not always been rightly understood.

Hic dies anno redeunte festus
Corticem, astrictum pice, dimovebit
Amphoræ, fumum bibere, *institutæ*
Consule Tullo.

It seems also that in the amphora the wines grew foul, probably from the evaporation through its substance, and it may be doubted whether the "languidiora vina," and "nec Bacchus languescit mihi," may not refer to this turbidness rather than to mellowness, as has been supposed. But this is from our present purpose.

The wines of the ancients were so much varied by their management, that it is not easy to ascertain their real qualities. In general, the Falernian (*vinum massicum*) was the more austere and stronger wine, the hock probably of the moderns; the cœcubum, the lighter nectar, wine of the warmer districts, though Galen speaks of a lighter weak kind of Falernian, and in one place the cœcubum, as a more generous beverage, or any old wine. The vinum sentinum, the favourite wine of Augustus, was light and grateful; we suspect of a weaker quality. The *Sabine* wines, "vile Sabinum," the common vin de pays, was occssionally, under proper management, though light, generous, or it would not have been styled by Galen ευγενη Σαβινος. Horace mentions it as estimable at four years, and Galen remarks that it was properly matured only in six.

Of the Greek wines, the Pramnian and the Maronean were distinguished for their strength. Homer informs us that the Maronean required twenty parts of water to dilute it, and Hippocrates, except the copies err, orders an equal dilution of the Thasian wine. Pliny informs us, that, at a later era, it was usual to mix eight parts of water to reduce it to the strength of common wine. The Cretan, the Chian, and the Lesbian wines were rich and generous; the latter pleasant, and not heady.

The ancients generally diluted their wines, and in a singular manner. They first added warm water in the due proportion, and then cooled the mixed fluid in snow. This might probably have produced a more perfect union between the water and wine; but we cannot think that the cold would produce the generous race which we find in pure unmixed wines. Indeed they were not always cold (Senecæ Epistolæ, 73); but this seems to have been a precaution among valetudinarians only.

We have engaged in this short disquisition, chiefly to elucidate some passages in the ancient medical authors, and we may here express a wish that this subject were taken up by an elegant scholar, who would explain it without the redundant, irrelevant, and uninteresting disquisitions of Baccius, and in a manner more satisfactory than the diffuse, pompous, inanity of Dr. Barry.

Wine, we have said, is the fermented juice of the grape, and generally contains the extractive, tartar, some portion of unchanged saccharine matter, ardent spirit, and the aroma of the fruit. On the proportions of the first, and the different quality of the last, all the variety of wines depends. Wines may be divided into the sweet and dry. In the former is the greatest proportion of extractive and saccharine matter, often the least of the ardent spirit, though, in a few instances, this is rather softened and disguised than absent. Of this kind is the Malmsey Madeira, the Canary wine, the Constantia from the Cape of Good Hope, the vino tinto (tent of Hungary), Frontignac, some kinds of Florence, many of the Spanish white wines, as the pacherotti, &c. The dry wines are the hock, the Vin de Grave, Madeira, Vidonia, port, both red and white, mountain, sherry, &c. Many of the Portuguese, Spanish, and Italian wines hold a middle rank, as the Buccellos, the Lisbon, some kinds of Florence, &c.

It has been usual to consider an acetous acid as an ingredient in wines; but if it be ever found, the wine is imperfect, and a decomposition must have begun. The smartness, which has suggested the idea, and which led the fabricators of made wines to employ a portion of acid, seems to be owing to an admixture of the carbonic acid air, generated during fermentation. This seems to give the pungency to claret and Burgundy, as it more evidently does, in a more evolved state, to Champaigne. We must not indeed deny, that wine may, from the grape, contain some malic or citric acid, as Chaptal informs us (Annales de Chimie, xxxv. &c.), that even the sweetest wine reddens the juice of litmus. He adds, that the remains, after the distillation of brandy, becomes sour, and this cannot be denied to be vinegar; but it is of a posterior production, the effect of the acetous fermentation. The quantity of alcohol varies from one-third to one-sixteenth. Tartar we have already spoken of, not as a product of fermentation, but as originally contained in the must. The extractive matter is gradually deposited by age.

One part of wine we have omitted, viz. the colouring matter; because it is wholly extraneous, and does not add to the qualities of the wine. It is a resinous substance, soluble in alcohol, and deposited as the quality of the wine is deteriorated by age. It is destroyed also by powdered charcoal. Lowitz.

Wine is highly grateful to the palate and stomach, giving an immediate and agreeable warmth to the whole system, and its peculiarly pleasing stimulus is felt, even at first, in the mouth. It completely answers the idea formed of an analeptic, as it appears immediately restorative. When we pursue its effects farther, we shall find the strength and spirits renewed; the perspiration and other secretions, which may have languished from fatigue, restored; the thoughts follow each other with more freedom, and every motion is carried on with ease and comfort. If we examine this series of symptoms with a marked attention, we shall at once perceive the combination of a stimulant with a sedative power; in other words, an indirect stimulus. The freedom, the serenity rising to hilarity, point out the narcotic influence, and show that wine cannot be considered as strictly and properly a stimulant. When we pursue still farther its effects, we shall find the ideas are irregularly associated; the face, though flushed on the cheeks, is pale round the nose and lips, the hand unsteady, the legs tottering, or spasmodically contracted. After sleep every symptom of debility in a considerable degree follows.

Wine, however, in moderation is, like tea, salutary, and its noxious portion is guarded by the extractive matter, perhaps the acid, from being, in general, injurious. In this it differs from ardent spirits, which not only want this sheathing, protecting ingredient, but seem to acquire additional deleterious properties from the fire, particularly by the evolution of an acrid, often an empyreumatic, oily principle.

Wines differ in their salubrity from the difference of their properties. The dry strong wines, as old hock,

are stimulant, with little mixture of the narcotic; or the austerity which accompanies the ardent spirit seems to correct its injurious properties. Some portion of this is preserved in the Madeira, and a less in Vidonia, sherry, and mountain, successively, of which the last is sometimes sweet. The sweeter wines are cordial and nutritious, especially when they combine, with the saccharine matter, a larger proportion of spirit. The Malmsey Madeira, the vino tinto, and the sweet Florences are of this kind. The Frontignac and Constantia are less nutritious, and cordial in a lower degree. The lighter sweet wines are generally drank with the desert, as the sweetness of its dishes would destroy the flavour of the dryer wines. Port and sherry belong rather to the dry than the sweet wines. The astringency of the former counteracts its narcotic powers, and the latter approaches, in a slight degree, the austerity of the German wines.

Claret, Burgundy, and Hermitage seem to be progressively more generous in the order mentioned. Claret combines, at least, the effect of an acid. The race of Burgundy renders it more generous, and the Hermitage has, in general, a superior body. If the stomach can bear with impunity either, they are highly salutary, as they contain a very inconsiderable degree of ardent spirit, and the malic acid probably, though disguised, in a considerable proportion. The aroma of Hermitage shows it to possess an additional principle, which we suspect renders the acid less injurious. In many cold, flatulent, weak stomachs, each is, however, injurious. Champaigne is more so: for its body is inconsiderable, and the quantity of air evolved renders it often inconvenient in the stomach, not to mention that its effects on the head lead to a suspicion that it combines some more deleterious principle than the carbonic acid gas.

The constant use of wine is "a custom more honoured in the breach than in the observance." Its advantages are lost from habit, and, when we want it as a cordial, we must employ a dose which will render its narcotic powers too sensible. If it be asked, which is the most wholesome wine? we would say, with a few exceptions, that which is the best; in other words, that in which the fermentation has been regularly conducted, in which its spirit is fully evolved, but still sheathed by the remaining extractive, if not some portion of the saccharine matter. The exceptions are the rich wines in a weak over-loaded stomach; and the thin acid ones in a cold and flatulent habit. Port, in general, unless kept until attenuated, is heavy, injures digestion, and is injurious from the quantity of spirit generally added to make it bear the motion of the ship; and, on this account, the wine which has twice crossed the tropics is preferred. The spirit is, by the voyage, more intimately combined, or evaporated. In our anxiety, however, to procure a generous attenuated wine, we must not wait till its colour be lost. When the brilliant red at the bottom of the glass changes to a brown, even when almost imperceptible, the quality of the wine is injured. Fashion or prejudice in vain insists that it is of a superior kind; for the chemist knows that a decomposition has begun, and the physician, that it is no longer the generous cordial it once was.

The good effects of wine are shown by the cheerfulness and hilarity which it excites, by a free perspiration, the mouth not hot or dry; the intellectual functions free and well connected, without rapidity or irregularity. If the quantity is not in excess, the sleep is easy, sound, and undisturbed; the morning not clouded by headach, the mouth not dry, and every occupation, mental or corporeal, resumed with freedom and alacrity.

Wine, like cyder, is sometimes adulterated with lead. See PLUMBUM.

In pharmacy the following wines only are ordered: the *vinum album Hispanicum*, or mountain wine; *vinum album Gallicum*, or French white wine; *vinum Canarinum*, Canary or sack; *vinum Rhenanum*, or hock; *vinum rubrum*, or red port. The qualities of each we have already mentioned; but we do not perceive that the choice of wine as a menstruum, is regulated by any fixed views, and it is now scarcely employed. As a vehicle, for the more convenient division of the doses of metallic salts the mountain is preferable; but, in general, a portion of spirit should be added. Indeed, in every case the dry stronger wines are preferable to the sweet or weak.

As a medicine wine is a most valuable cordial in languor and debility, particularly useful in the low stage of typhus, raising the pulse, supporting the strength, promoting a diaphoresis, and resisting putrefaction more quickly and certainly than any other medicine. Delirium, from excessive irritability, and a defect of nervous energy, is often relieved by the judicious use of wine; during the prevalence of an intermittent epidemic, or putrid sore throat, a moderate use of wine has proved a salutary prophylactic. In malignant angina; in the small-pox verging to putrescency, with great debility; in gangrenes and the plague; wine is considered an important remedy, and in almost every case of great prostration of strength is a most grateful and efficacious cordial. Dietetically it is said to be beneficial to the weak and aged, and to those who are exposed to a warm and moist, or to a corrupted, air. Externally it stimulates, strengthens, and resists putrefaction. Dr. Harris orders ulcers to be washed with warm wine; and external inflammations are said to be sometimes removed by it. In an erysipelas, warm wine and fomentations with the spirit of wine are sometimes useful. Wine in fevers is, however, often too heating, and to an equal proportion of milk and water as much wine may then be added as will occasion coagulation. A wine whey, mildly cordial and diaphoretic, is thus formed, and may be given with good effect; or water may be added to wine for the same purposes. See Baccius de Naturali Vinorum Historia; Barry on the Wines of the Ancients; Galen Libellus de Vinis. Opera, vii.; Hoffmann de Vini Hungarici excellente Natura; Ejusdem de Natura & Præstantia Vini Rhenani; Neumann's Chemistry; Lewis's and Cullen's Materia Medica.

VI'NUM ADU'STUM, *vinum ardens*, SPIRIT of WINE, and, when rectified, *alcohol cuculatum majus; ænostagma*. In France it is drawn from wine; in England and Germany from malt liquors, sometimes from melasses; and in America from the sugar-cane. The spirit from each source, if equally pure, is the same.

Alcohol, when pure, is perfectly limpid, with a penetrating smell, and a hot fiery taste. When shaken in water it forms bubbles, which almost instantly disappear, and it moves in the vial without the slightest

apparent lentor. Its specific gravity is 0.825 at 60°; but it may even be brought to 812. It resists the intensest colds hitherto known, evaporates before the point of boiling, which is, however, so low as 165°, and, on evaporating, forms a gazeous fluid, leaving a high degree of cold. It mixes slowly with water if at rest; but rapidly on shaking, separating numerous bubbles: the united bulk is smaller than that of the separate portions, and the specific gravity, of course, greater. Alcohol burns on being touched with an ignited body: and the flame is pale blue on the outside, though white in the centre. Salts of copper render the flame of a beautiful emerald green, borax a greenish yellow, nitre a dun yellow, and the soluble salts of strontian a deep blood red. The strongest alcohol is consumed so perfectly as to inflame gunpowder, if placed at the bottom of the vessel in which it burns. When alcohol has burnt away on cotton, and inflames it, chemists call it rectified spirit of wine. Equal measures of this rectified spirit and of pure water form *spiritus vini tenuior*, proof spirit. If to the rectified spirit as much well dried and yet warm alkaline salt be added as that a part of it remains undissolved at the bottom, it will absorb the remaining aqueous humidity, and the spirit may be poured from its surface. After which, if a little calcined vitriol or burnt alum be added to this dephlegmated spirit, and it be again distilled, it will arise pure and free from either superfluous phlegm, or any of the alkaline salt that may be detained in it. This is called alcohol. The college of physicians direct the following process: Take of rectified spirit of wine, one gallon; kali made hot, one pound and a half; pure kali, one ounce: mix the spirit with the pure kali, and afterwards add one pound of the hot kali: shake them, and digest for twenty-four hours. Pour off the spirit, to which add the rest of the kali, and distil in a water-bath. It is to be kept in a vessel well stopped. The specific gravity of the best alcohol is to that of distilled water as 815 to 1000. But, as we have said, it may be rendered still stronger. An empyreumatic flavour, however, often remains from the first incautious distillation, and a fetid oil, from an accidental or a designed impregnation. The former disappears by age, especially if the spirit be kept in charred casks; but the oil is seldom separated. It may be discovered by rubbing some of the spirit on the palm of the hand. Alkalis and lime, with a subsequent distillation, remove it; but a portion of the spirit is in this way decomposed. Baume, who thinks this oil more common when the spirit is prepared from the rich Spanish wines, found that the first product of the distillation was not oily, and on this observation founded his process of purifying. This was to distil the spirit successively, reserving all the first portions, then to mix them and distil off one half.

Fiscal operations have rendered it a problem of peculiar advantage to ascertain the comparative strength of different spirits. Shaking the fluid, and marking the period at which the bubbles disappear, becomes, from habit, a good test of its strength; but art will supply the means of imitating what has been attributed to the proportion of alcohol. The quantity of water left after burning is a better criterion. Good rectified spirit should leave about 0.25, French brandy 0.56, common malt spirit 0.65. Another test is the quantity of water which good dry carbonat of potash carries down, and one usually employed of rum is its swimming in olive oil; but all are liable to objections, and the most certain means of ascertaining the proportion of alcohol, in a given quantity of spirit, is by ascertaining its specific gravity. The immense and minute labours of sir Charles Blagden and Mr. Gilpin on these subjects may be found in the seventy-ninth and eighty-second volumes of the Philosophical Transactions; but, though we think a more minute attention to the strength of spirits in pharmaceutical processes highly desirable, the disquisition is by far too remote from our present object to detain us. The complicated circumstances in this inquiry afford many curious subjects of hydrometrical investigation, which to a philosophic mind must be highly interesting. It appears, in general, that the greatest diminution in bulk, or concentration, in proportion to the quantity of ingredients, which takes place between alcohol and water, occurs, when equal bulks of each are used, being more than $\frac{1}{40}$th of the whole. But the greatest possible diminution, obtainable by any admixture of water, happens when two parts of the latter are added to one of alcohol, being 0.81 parts where one hundred of alcohol are employed. This last is the highest term of actual diminution, as it is again less than 0.81 in one hundred, if still more water is added.

Alcohol has been analysed in a variety of ways; but we have not hitherto attained greater accuracy than from the experiments of Lavoisier, who concluded that one hundred parts of alcohol contained 63.6 of water; 28.53 of carbone; and 7.87 of hydrogen. In the strongest alcohol, water already formed probably exceeds one-half its weight, which in burning is carried off by evaporation.

Pure alkalis are soluble in alcohol; but carbonated alkalis only attract the water. The solution is of a high red brown colour, and recommended as a resolvent by Van Helmont, under the appellation of *tinctura tartari*. The proportion of pure alkali, dissolved by the strongest alcohol, is about 0.187 of its weight; but, as already hinted, the spirit is in part decomposed; for the alkali attracts the carbone, and rhomboidal or spicular crystals are deposited. If this solution is repeatedly distilled, the whole spirit is decomposed, leaving carbonat and acetite of potash. Lime has a similar effect. Pure ammonia dissolves in alcohol, and the carbonated ammonia to a certain extent, especially by means of distillation. When alcohol, however, is added to a saturated solution of ammonia, in water the latter is precipitated in confused crystals, called *offa Helmontii*. The action of the stronger acids has been already noticed in the article ETHER, q. v.; and the weaker ones dissolve in it or decompose it imperfectly. Howard's *fulminating mercury* is procured by means of alcohol, which, when digested with nitrat of mercury, is decomposed, and becomes the oxalat of this metal, in which state it fulminates. The other neutrals are dissolved by alcohol, with different degrees of affinity, and it furnishes a ready method of approximating the saline contents of mineral waters. Lavoisier found that pure spirit did not dissolve carbonated or sulphurated soda, sulphurated or muriated magnesia, or even common salt. When mixed with half its weight of water, it dissolved a considerable quantity of common salt; but sulphat of soda was not dissolved in any mixture in which the quantity of spirit

exceeded that of water, without boiling. On cooling, the whole of the salt was deposited. The result of Wenzel's experiments we shall add. The spirit was the best spirit of commerce, about 0.830, the heat of boiling 180°, and the quantity 240 grains. These dissolved, of

	Grains.
Nitrat of potash	5
——— soda	23
——— ammonia	214
——— lime	288
——— magnesia	694
——— allumine	240
Muriat of potash	5
——— ammonia	17
——— lime	288
——— magnesia	1313
Fluat of ammonia	1
——— alumine	1

	Grains.
Borat of ammonia	1
Tartrite of potash	1
Cream of tartar	7
Tartrite of ammonia	7
——— alumine	7
Oxalat of alumine	7
Acidulous oxalat of potash	7

Mr. Kirwan's experiments were made with five different kinds of spirit. That of the specific gravity of .900 is equal, according to Gilpin, to one hundred of spirit, with about fifty-nine grains of water; .872 to as much spirit, with twenty-seven of water; .848, with about eleven grains of water; and .825, with five grains of water. The temperature was about 80°, the time of digestion three days, and the salts were deprived of the water of crystalisation. See Kirwan on Mineral Waters, p. 266.

One hundred grains of alcohol dissolved

	.900	.872	.848	.834	.817
Sulphat of soda	0	0	0	0	0
——— magnesia	1	1	0	0	0
Nitrat of potash	2.76	1	0	0	0
——— soda	10.5	6	—	0.38	0
Muriat of potash	4.62	1.66	—	0.38	0
——— soda	5.8	3.67	—	0.5	—
——— ammonia	7.5	4.75	—	1.5	—
——— magnesia, dried at 120°	21.25	—	23.75	36.25	.50
——— barytes	1	—	.29	.185	.09
——————— crystalised	1.56	—	.43	.32	.06
Acetite of lime	2.4	—	4.12	4.75	4.88

When alcohol is added to a solution of salts they are precipitated in proportions which furnish some information of importance in the same analysis. The precipitation takes place, as may be expected, soonest with the purest alcohol, and the most saturated solution: the quantity of spirit must be at least equal in bulk to that of the solution, often much larger. Mr. Kirwan found that if water contained selenite in the proportion of 0.001, it would be completely precipitated by spirit of the specific gravity of .850, or somewhat below it. Alkaline sulphats are equally precipitated by a spirit of .817 in a somewhat longer time. Alum must be in a greater proportion than 0.05 to be precipitated by a spirit of .834, unless triple the bulk be used, assisted by heat. Sulphat of magnesia must be in greater proportion than 0.240 to be immediately precipitated by a spirit of .834. Phosphorus dissolves in alcohol and sulphur by the process of distillation.

Pure resins are soluble in alcohol; but the gum resins only in part soluble in the pure spirit, though more so in the diluted. The purer resins are precipitated from spirit by the addition of water. Gum copal and amber, though styled often resins, do not dissolve in alcohol. Camphor dissolves in nearly an equal weight of good alcohol, and the essential oils are dissolved in it in proportion to its strength. It extracts the colour and smell from fat oils without dissolving them; but, if empyreumatic, rendered *drying*, rectified by distillation, or united by an alkali into soap, they become, in a greater or less degree, soluble in spirit. Alcohol dissolves about one-third of its weight of good soap, if not overloaded with oil, and the solution is limpid, chiefly used as a test for earthy salts in mineral waters. It dissolves equally the green matter of vegetables, and sugar in about three times its weight, if the spirit be of a moderate strength. As the alcohol does not dissolve the mucilage, it is useful for separating the purely saccharine part. Animal secretions of a resinous nature, as well as wax and spermaceti, are dissolved by spirit, which separates albumen from the serous fluid with which it is combined, by coagulation. It slowly extracts the blood from the muscular fibre, leaving the flesh shrivelled, white, hard, and not susceptible of putrefaction. On this account good alcohol is of essential service in the preservation of anatomical preparations.

This spirit, from the properties recited, is of extensive use in chemistry, separating the medicinal parts of vegetable and animal substances from the inactive matter, extracting their flavour and colour, dissolving resins and oil for varnishes, &c. and extracting them from the woods which contain them.

As a medicine, alcohol, externally applied, constringes the vessels, and coagulates the fluids, and thus restrains

hæmorrhages. As a powerful narcotic it eases pain, but renders the parts paralytic. If received into the stomach in an undiluted state, it produces the same narcotic effects so often described: and if the quantity taken be considerable, a palsy or apoplexy often follows. All spirit taken internally is injurious; and though a moderate quantity, the injury is trifling, yet its use should be regulated with the greatest care.

Externally, as a topical astringent, it is useful in bracing relaxed organs, and, as a narcotic, in lessening increased action from strains, &c. In inflammations from excess of stimulus, as in burns, it has been useful, as a less stimulus, to bring the vessels to a proper tone without too far detracting from their irritability. See Neumann's Chemical Works; Lewis's Materia Medica.

VI'NUM, WINE, a pharmaceutical title from its use as a menstruum in pharmacy. It will be obvious that wine takes up the extractive matter with less decomposition than spirit, though perhaps more changed than by the medium of water. As it is not kept without spontaneous changes, it is a form now disused, except as a menstruum for mineral substances.

VI'NUM RHABA'RBARI. See RHABARBARUM.

VI'NUM HORDEA'CEUM REGIO'NUM SEPTENTRIONA'LIUM. See ALLA.

VI'NUM FALE'RNIUM. See AMINÆUM VINUM.

VI'NUM EME'TICUM, et BENE'DICTUM. See ANTIMONIALE VINUM.

VI'NUM CHALYBEA'TUM, vel FE'RRI. See FERRUM.

VI'NUM HIPPOCRA'TICUM. See CLARETUM.

VI'OLA, (*Ion*, from its supposed native country, *Ionia*), *viola odorata* Lin. Sp. Pl. 1324. The SWEET VIOLET. The flowers have a very agreeable smell, a weak, mucilaginous, bitterish taste; and, if in a dose of two drams, they are gently laxative: according to Bergius, they possess an anodyne and pectoral quality. The seeds are somewhat more laxative, gently emetic, said to be strongly diuretic, and useful in gravelly complaints. The flowers yield to water both their virtues and fine colour, but impart to the spirit their fine flavour, without their colour.

A syrup made with the blue flowers is useful in some chemical investigations, to detect an acid, or an alkali, and it is said to be a laxative for infants; an effect probably derived from the sugar.

Syrup of violets is made by macerating two pounds of the fresh petals of the flowers in three pints of boiling distilled water, for twenty-four hours. The liquor is then strained through a fine linen rag without expression, and the clarified sugar added to make a syrup. (Ph. Lond. 1788.) Both the flowers and the syrup lose their fine colour by long keeping. See Lewis's Materia Medica.

VI'OLA CANINA, Lin. Sp. Pl. 1324. The root is both emetic and cathartic, when dry, in the dose of a scruple; but is not used in this country.

VI'OLA TRICO'LOR, Lin. Sp. Pl. 1326, β is to the taste mucilaginous and somewhat rough, and in quality somewhat purgative; half a dram of the dried herb, boiled two hours in milk, is recommended to be taken night and morning in milk for the crusta lactea. The decoction is formed into a poultice with bread, and applied to the part, but is a trifling remedy, and at present disused.

VI'OLA LUNA'RIS. See BULBONACH.

VI'OLA LUTE'A. See CHEIRI.

VI'OLA MARIA'NA. See CERVICARIA.

VI'OLA MAR'INA. See EPERLAUNUS.

VI'OLA PALU'STRIS. See SANICULA EBOR.

VIO'RNA, (from *vieo, to bind with twigs*, from the flexibility of its branches). See ASTRAGENE.

VIPE'BA. See CASSADA.

VI'PERA, (*quòd vi pariat*, from the tale of the young ones eating through the mother's bowels). The VIPER, *coluber berus* Lin. Systema Naturæ, is a viviparous reptile, about an inch in thickness, and from twenty to thirty inches in length; distinguished from the snake by an undulated black line on its back, and the smallness of its tail; found in the heat of summer under hedges, and in winter retiring into holes in the earth. Its poison is at the basis of its fangs, or long teeth, through which it is emitted by a furrow when the animal bites. A small portion of this poison, communicated to the blood by a wound, produces violent effects, though inoffensive in the stomach. The mode of relief is, rubbing the wound with olive oil, taking it freely, internally, with ammonia; but in this country the bite of a viper is seldom fatal. Various other remedies have been recommended, but they are of little value, and derive their chief credit from the comparative innocence of the poison. These are acids, both externally and internally, the expressed juice of the leaves of the ash, theriaca, the actual cautery, baum, &c. Fontana contends that the volatile alkali is useless, and that the poison is of a gummy nature; but in general his experiments deserve more attention than his reasoning. The viper's fat is of little value beyond any other axunge. See SERPENS and BOICININGA.

Neither as a medicine nor aliment does the flesh of vipers appear to excel that of eels. The supposition of its virtues is a mark only of the credulity of the ancients, and of their blind implicit followers. See Cullen's and Lewis's Materia Medica; Mead on Poisons.

VI'PERA INDICA, PILEATA. See COBRA DE CAPELLO.

VIPERA'RIA, (because it was thought effectual against the bite of a viper). See SCORZONERA.

VIPERI'NA, (from the serpentine appearance of its roots). See SERPENTARIA VIRGINIANA.

VI'RES NA'TURÆ. See ARCHÆUS.

VI'RGA AU'REA, (from its form and colour); *doria herba, conyza, symphitum, petræum, elichrysum, consolida Saracenica, Jacobæa palustris*. COMMON GOLDEN ROD, *solidago virga aurea* Lin. Sp. Pl. 1235, is a plant with long and somewhat oval leaves, pointed at both ends, slightly or not at all indented, with upright spikes of small yellow flowers, followed by small seeds winged with down. It is perennial, grows wild in woods and on heaths and flowers in August. The leaves and flowers are styled corroborant, aperient, and diuretic, communicating all their virtues to water and to spirit. The taste is bitter and moderately astringent, and they are consequently considered as useful in debility of the viscera, and its effects, but they are a medicine of weak powers, and now disused. The extract is the best preparation. See Lewis's Materia Medica.

VI'RGA MA'JOR. See CONYSA MAS THEOPHRASTI.

VIRGA'TA SUTU'RA. See SUTURA SAGITTALIS.

VIRGINIA'NUM RU'BRUM. See PHYTOLACCA AMERICANA.

VI'RIUM LA'PSUS See LIPOTHYMIA.

VI'RIDE Æ'RIS. See ÆRUGO ÆRIS.

VIRI'LIS Æ'TAS See ÆTAS.

VIS CONSERVA'TRIX. (ισχυς, from the Hebrew *aish*). The preserving power, or the efforts of nature directed to preserve health and correct accidental deviations from the sound state.

VIS ELASTICA, *mortua*, the elastic principle inherent in parts of animal bodies, as dead matter.

VIS GENERATRIX. The generative power.

VIS INSITA. The *inherent power*, or the irritability which exists in the muscle independant of the will and independant of the nerves, seemingly from organisation. It certainly continues some time after life, but is not apparently distinguishable from the vis nervea.

VIS MEDICA'TRIX. The healing power, or the plastic power employed in restoring health, often expressed by the words nature, and natural cure. See VIS VITÆ, and CALIDUM INNATUM.

VIS NERVEA or NERVOSA, the property of contraction inherent in muscles, independant of their organisation, by the nerves which supply them. Whytt and Monro

VIS PLASTICA. See PLASTICUS.

VIS VI'TÆ. See CALIDUM INNATUM.

VISCA'RIA, (*viscus, glue*, from the glueiness of its leaves). See MUSCIPULA.

VI'SCERA, (from ισχυς, *strong*). The BOWELS. The *viscera* in the head are the brain, eyes, ears, nose, mouth, tongue, &c.; in the thorax, the heart, lungs, larynx, trachea, pleura, mediastinum, pericardium, thymus gland, and diaphragm; in the belly, the peritonæum, omentum, œsophagus, stomach, intestines, mesentery, liver, spleen, pancreas, kidneys, uterus, bladder, and the female parts of generation.

A knowledge of the situation of the abdominal viscera is of great advantage to the medical practitioner. The body may be considered as divided into three regions, the chest, the abdomen, of which the superior part is under the bastard ribs, the middle region, and the pelvis. These three regions form one large cavity, containing all the viscera of the lower belly, but their extent varies in different ages, in different subjects, and from disease. In new-born infants, the distance between the sternum and the pelvis is nearly a third of their whole length; in adults only one-fifth. This difference is confined entirely to the middle region, which, in children, is also much more extensive in every respect than in adults. In the former it is wider from before backwards, for as the age advances the spine is almost entirely straight, but becomes considerably crooked in more advanced life. In children, too, the ribs bend more outwards than in adults, which adds to the lateral diameter. Although this middle abdominal region is in them so extensive, yet both the superior and inferior divisions are comparatively small. In the pelvis the under extremity of the os sacrum bends considerably towards the pubes; the horizontal branch of the pubes is both short and flat, and the tuberosities of the ischia turn backwards. In young children, therefore, all the viscera of the lower belly are contained in what we have termed the middle division, and remain there until they gradually pass into the other two regions, as these, in course of time, are enlarged. Before treating, however, of the changes the viscera undergo in point of situation from the infantine state to that of adults, it will not be improper first to give a more particular description of their several situations in the former. The stomach in infants, instead of being situated transversely as in adults, hangs almost perpendicularly. It extends from what is commonly called the epigastric region to the umbilical, inclining a very little to the left above, and to the right below; having its convex side or great curve turned to the left, and the small curvature towards the right. In consequence of this situation the omentum, which is always attached to its great curvature, lies more towards the left than the right side; and, from want of attending to this circumstance, practitioners have often treated as diseases of the colon complaints in children, which, on dissection, have been found seated in the omentum. The liver is very large in the fœtus, in proportion to its size in adults, and is situated almost entirely in the middle region of the abdomen. It appears to the touch externally, indeed, much nearer the linea alba than it is ever found in a more advanced age. At this period the duodenum is placed almost entirely behind the stomach. The spleen in infants is always easily discovered by the touch immediately below the false ribs; but in adults it is only felt when in a diseased state. In the former a considerable part of it is situated in the middle region of the abdomen; but in the latter its seat is always in the left hypochondrium. In very young subjects the urinary bladder is situated entirely without the pelvis, is remarkably large in proportion to the other parts, and extends to within a very small distance of the navel: when full of urine it makes a very evident prominence near the middle and inferior part of the abdomen. This position of the bladder, above the os pubis, ought to be particularly attended to; for, when in infancy it is necessary to have recourse to lithotomy, the high operation may be more safely performed. In young girls the womb, with its two ovaria, are considerably raised above the os pubis; and when swelled, which, however, at this age, seldom occurs, it can easily be distinguished by the touch externally.

Such are the situations of the viscera in childhood. In a more advanced age the ribs become less crooked, the diaphragm more vaulted, and the liver rises higher, so that about the fifteenth year it is almost entirely covered under the ribs, when in a horizontal posture. This change of situation in the liver draws the stomach from the perpendicular to the horizontal line; and, according to its change of situation, the omentum recedes entirely from the left side, and occupies the middle part of the lower belly. Although the horizontal lobe of the liver can be distinguished by the touch in adults, it is not so evident as in children. The pelvis also enlarges; the pubes become considerably longer, and acquire a greater height; the os sacrum stretches farther back, and the tuberosities of the ischia push outwards, and to a greater distance from the os coccygis. Such a considerable augmentation in the cavity of the lower part of the abdomen gives rise to such changes in the position of the different viscera as deserve from practitioners very particular attention. The bladder, in

falling down, has its superior part carried forward, and the urachus, which had been attached to the fundus, is torn away, and never again connected with it. This fact was first taken notice of by Lieutaud, but is still doubted by many anatomists. The womb, which in childhood was placed above the pubes, by degrees falls into the pelvis, so that in adults not pregnant it is always, in a sound state at least, entirely sunk in it. Both the bladder and the uterus acquire an oblique situation in the pelvis, owing to the descent of the intestines; and this very slight obliquity, in some degree natural to both these viscera, was observed by Gunzius and Camper.

A strange confusion, inversion, or transposition of the viscera is mentioned by different authors, viz. Roemer in Sylloge Opuscalorum Italicorum Fasciculus, i.; Stoll Ratio Medendi, i. 290; De Haen Ratio Medendi, xiv. 1, 2; Halleri Opera Minora, 14, 15; Baillie in the London Medical Journal, 1789; Edinburgh Commentaries; Ludwig de Causis Preternaturalis Viscerum Abdominalium Status, &c.; Sue in Memoires Presentèes, &c i. 292, &c. They are subject also to many diseases, as hidden varices, hydatids, &c. (Baglivi, 386). They sometimes, as we have seen, are propelled through the fibres and rings of the muscles, sometimes are naturally covered only with the peritonæum. In ulcers of the viscera Dr. Healde, in "two papers," mentions the good effects of oleum asphalti.

Infarctions of the viscera include all schirrosities which prevent a due circulation through their vessels, and are, therefore, noticed under different heads, to which they more particularly belong. We now notice them to mention a peculiar remedy by a German physician, Kempff, viz. the visceral clysters, chiefly composed of what the Boerhaavians styled the deobstruents and resolvents, or the purer bitters. Kempff has had many imitators and eulogists in Germany; but the practice has not reached this country, so that we cannot speak of it from experience. Other remedies are, wormwood, bark, steel, the greater celandine, gum ammoniac, neutral salts, sulphur, and mercury.

See Edinburgh Medical Commentaries, vol. ii. p. 152, &c. from M. Portal's paper in L'Histoire de l'Academie Royale des Sciences de Paris, année 1771, 4to. Paris.

VI'SCUM. BIRD-LIME. See VISCUS.

VI'SCUS, (from ἰξὸς); *boxus*, MISSELTOE, *viscum album* Lin. Sp. Pl. is a bushy evergreen plant, bearing imperfect white flowers, followed by transparent whitish berries. It grows only on the trunks and branches of trees. Formerly bird-lime was made of the berries, by boiling them in water until they burst; they were then well beat in a mortar, and afterwards washed in water until all the branny husk was separated; but now bird-lime is made from the bark of the holly. (See AQUIFOLIUM.) The misseltoe hath been famed for its medicinal virtues. Superstition, in former ages, held it in veneration, hanging it about the neck to prevent the effects of witchcraft, and giving it internally to expel poisons. As a specific in epilepsies, palsies, &c. it has been recommended; but is seldom noticed in the present practice, though an effort has been lately made to introduce it. Colbatch gave from half a dram to a dram of the wood or leaves. See Raii Historia Plantarum; sir John Colbatch's Treatise on the Misseltoe.

VI'SIO, (from *visus, sight,* and that from *video, to see*). The SIGHT. Of the physiology of vision we have spoken at some length, when the structure of the organ was before us, as well as of those diseases which depend on that structure. (See OCULUS.) Some other defects of this function we shall now notice. Imaginary objects are often the effect of a diseased structure of the brain, sometimes a vitiated state of the vessels of the retina (Morgagni de Sedibus, &c. xiii. 4). Weakness of sight consists not only in indistinct vision, but in an inaccurate judgment of shapes, of distances, and colours. Sometimes there is no power of distinguishing colours, and two instances of this kind are recorded in the Philosophical Transactions, viz vol lxvii. and lxviii. In short, the accurate distinction of colours is as much a peculiar property of vision as a musical ear is of sound.

The causes of weak sight are chiefly those of debility, viz. excesses of every kind, repelled eruptions or gout, excessive discharges, particularly of the saliva from mercury, narcotic poisons, &c. The complaint is relieved by tonics, general and topical, cold bathing, topical discharges by errhines, if not violent, and moderate stimuli to the eyes. Some singularities of vision are recorded, as a loss of sensibility in one half the nerve, short-sightedness of one eye, and the opposite defect to the other. Percival, in the Memoirs of the Medical Society of London, ii. 5, mentions an unpleasant sensation arising from square objects: in pregnancy we have seen an equal aversion to particular colours.

VI'SNAGA; *daucus visnaga* Lin. Sp. Pl. 348, *gingidium Hispanicum*, SPANISH PICK-TOOTH, is an annual plant, growing in Italy, remarkable for the agreeable scent and stiffness of the pedicles of the flowers, used for picking the teeth only. The virtues of the plant are similar to those of fennel. See FŒNICULUM, and Raii Historia.

VI'SNAGA MI'NOR. See SELINUM MONTANUM.

VI'SUS DE'BILIS; HEBETU'DO. See AMBLYOPIA.

VI'TA, (from *vivo*), LIFE. We have stated that life consists in that animation of the primordial germ, which it receives at the moment of impregnation. Mr. J. Hunter considered it as seated in the blood, following, in this instance, the opinion of an Italian philosopher, in the early part of the last century (Halleri Bibliotheca Medicinæ Practicæ, iv. 358). Of the BRUNONIAN and CULLENIAN systems on this subject we have already spoken. Vide in verbis. See also BLOOD.

VI'TÆ LI'GNUM. See GUAIACUM.

VI'TÆ A'RBOR. See THUYA and CEREBELLUM.

VI'TÆ AFFECTIO'NES, VI'TÆ PROPOSITA. See EPITEDEUMA.

VITALBA. *Clematis vitalba* Lin. Sp. Pl. 766, *β*. TRAVELLER'S JOY, is pungent and acrid to the taste. The young sprouts are esculent, and a decoction of the leaves is given in rheumatism, lues, and scrofula.

VITE'LLUS, (because it contains the *life* of the chick). The YOLK of an EGG, is a part of the chicken, and gradually drawn into its abdomen, forming or supporting the different viscera. We have already spoken of its chemical nature, and its uses as an aliment. In pharmacy it is employed as a medium for uniting oils, resins, and balsams, &c. with water.

VI'TIA. A class of cutaneous, external, or palpable diseases, in the nosology of Linnæus, and a synonym of the *locales* in the system of Cullen.

VITIA'TUM OS. See CARIES.

VITILA'GO, (because it is white like the skin or flesh of veal). A species of WHITE LEPROSY. See ALPHUS.

VITIS, (*vieo, to bind*, from the flexibility of its branches). The VINE-TREE, *vitis vinifera* Lin. Sp. Pl. 293. Its leaves are astringent, and were formerly used in diarrhœas, hæmorrhages, and other disorders requiring refrigerants and styptics. These leaves were called *pampini*, and the tendrils *capreoli*. The juice and sap of the vine (*lacryma*) have been recommended in calculous disorders, and said to be an excellent application to weak eyes, and to remove specks of the cornea. The unripe fruit has a harsh, rough, sour taste; and its expressed juice, *verjuice*, was much esteemed by the ancients, but is now superseded by that of lemons: for external use, however, particularly in bruises and strains, verjuice is still employed, and said to be a very useful application. The dried fruit, called UVÆ PASSÆ MAJORES, and MINORES, q. v. are useful in pectoral decoctions as demulcents. They form part of the decoctum hordei compositum, tinctura sennæ, and tinctura cardamomi composita. If the trunk is wounded in spring, it affords a watery juice, used as a diuretic and refrigerant. The flowers have a grateful smell, which is raised with water in distillation, and contains a small portion of essential oil, which possesses, in a high degree, the flavour of the flowers. The unripe fruit, *agresta*, are sour and harsh, but from them *omphacium*, a cooling and astringent liquor, is expressed. The ripe fruit is called *uva*; the largest kind, *damascenæ passulæ*, and uvæ afford wine, (vide VINUM;) and when these are dried in the sun they are called *uvæ passæ*, or *passulæ*. See Lewis's Materia Medica.

VI'TIS A'LBA, vel SYLVE'STRIS. See BRYONIA ALBA.

VI'TIS IDÆ'A. See VACCINIA and OXYCOCCUS.

VITISA'LTUS. See CHOREA SANCTI VITI.

VITRA'RIA, (from its use in *glazing* vessels). See PARIETARIA.

VITREA TU'NICA, (the membrane of the *vitreous* humour of the eye). See ARANEA.

VITRI'OLI CO'LCOTHAR, *chalcitis officinalis, colica, colcotor, crocus martis*, the substance which remains after the martial vitriol has been calcined and distilled for a long time by an intense fire; and by that means reduced to a blood red. Mr. Le Fevre mixes two parts of filings of iron with one of sulphur, and a little water; and after the acid of sulphur has dissolved the iron, by exposing the paste to the air, it changes into colcothar. It is used in polishing glass, and other substances, by artists.

VITRI'OLICUM A'CIDUM, (from *vitriolum*); *oleum vitrioli, stagma, acidum primogeneum*. See ACIDA and SULPHUR.

VITRIOLA, (from its likeness to glass; but it is said also to derive its name from the initial of the following words, *V*ade *in* *T*erram *r*imando *i*nvenies *o*ptimum *l*apidem *v*eram *M*edicinam). In the chemical alphabet, vitriol is expressed by the letter D. the best species of which is called *lonchoton*; other kinds, *calcadinum, calcatar, calcotar, calcanthos, calcanthum, calcitea, alec*, or *alech, altinuravum, asagi, asamaz, azeg, colcotar*, VITRIOLS, combinations of metals with the vitriolic acid generally styled copperas, as if all vitriols contained copper only.

The vitriols of iron are styled green vitriol; of copper, blue vitriol; and of zinc, white vitriol. The term is sometimes applied to all combinations of vitriolic acid; but these appellations have never been generally adopted.

Vitriols are prepared in Sweden, Germany, England, and in many other countries where pyrites are plentiful.

VITRI'OLUM ABORTI'VUM. See OCHRA.

VITRI'OLUM VE'NERIS. See ÆRUGO ÆRIS.

VITRI'OLUM VI'RIDE, (*atramentum sutorium, & melantoria*, because used for blacking leather). In preparing this salt the pyrites are exposed to the air, and reduced to a vitriolic earth, which is washed with rain water, and the liquor conveyed by pipes into cisterns. It is then boiled to a due consistence in large leaden vessels, adding a quantity of old iron, as the acid is in excess, and at last the liquor is set to cool in other vessels furnished with sticks, on which the vitriol crystalises. It is made in London by a direct combination of its ingredients, as the salt is purer, and the process more quick and easy. The acid must be diluted; for if concentrated it will not act on the metal.

When made from pyrites, vitriol contains two kinds of salts, the green sulphat, and the red. The former a very beautiful salt, of a pale green, styptic and sensibly acid. It is soluble in twice its weight of water, in the temperature of 55°; but in less than its own weight of boiling water; is insoluble in alcohol, and does not strike a black colour with galls, nor a blue with Prussian alkalis.

The other salt is styled by Proust, whom we follow, the red sulphat of iron, from which the usual properties of green vitriol are derived. This salt cannot be crystalised by the usual means, is soluble in alcohol, yielding with galls a black precipitate, and with Prussian alkali a blue. It may often be distinguished by the eye in the vitriol of commerce, and is in that state which the green sulphat assumes when exposed to the air. The first contains 0.27 of oxygen, the last 48. Each is, therefore, changed into the other by deoxygenation or oxygenation. The red is readily converted to the green sulphat by tin, zinc, or mercury, or by the contact of sulphurated hydrogen. Green sulphat of iron absorbs nitrous gas, and becomes an useful agent in eudiometrical experiments. The red sulphat has been lately exhibited in a crystaline form by M. Huissman.

The best green vitriol appeared to contain about one half of water, three-eighths of iron, and more than 0.10 of pure acid. The English vitriol is purely ferrugineous; but the others have always some admixture of copper. Sixteen ounces of Goslarian vitriol were found to contain ℥vii. of water, ʒiii. of acid, ℥v. nearly of iron, and about ʒii. of copper; but it often contains much less of the acid.

The vitriol of iron dissolves in its own water of crystalisation, or in about twice its weight of water, and shoots in thick rhomboidal crystals. A watery solution deposits a part of its metallic basis; but the precipitation is greatly increased by a boiling heat. As the proportion of water is less, the more freely do they part both with their water and with their acid.

From this kind of vitriol, the vitriolic acid was formerly extracted, by distilling it when calcined in earthen retorts with long necks, in a strong fire continued for two days. The distilled spirit appears of a dark blackish colour, and contains a quantity of water in proportion to the degree of calcination of the vitriol. On a second distillation, in a sand heat, the water rises first together with a portion of the acid, and the remaining strong acid becomes clear. This is the usual mark for discontinuing the rectification; but at present this acid is extracted from SULPHUR, q. v. The residuum, after calcination and distillation for a long time, forms *colcothar*.

In the distillation of green vitriol a sulphureous gas is copiously given out, and, with it, the sulphuric acid saturated with sulphureous acid gas, which concretes in long striated rays, called the *smoking vitriolic acid of Northausen*.

The medicinal uses of green vitriol are the same as those of the other preparations of iron. (See FERRUM.) The acid of vitriol retards fermentation and putrefaction, but in a less degree than the nitrous and marine acids. When largely diluted with water it is employed for preventing putrefaction, correcting bilious acrimony, abating heat, quenching thirst, and strengthening the stomach.

VITRI'OLUM CŒRU'LEUM. BLUE, ROMAN, or CYPRIAN VITRIOL, VITRIOL OF COPPER, *cæruleus lapis*, is prepared in Sweden, Germany, &c. from the pyrites and copper. It contains much less water than the vitriol of iron, and requires about four times its weight for solution. Its taste is strongly styptic, somewhat acid, and peculiarly nauseous. On drying it loses about 0.36, which is water only. If calcined with a strong heat, the acid is expelled, but not decomposed, and about 0.33 are lost in the process. The remainder is the perfect black oxide of copper, of which one-fifth is oxygen. A subsulphat of copper is prepared by adding potash, which absorbs in part the acid, and throws down this salt in the form of a green precipitate. If saturated with the alkali this precipitate is blue, and is a compound of oxide of copper with water, which Proust calls *hydrat of copper*. The subsulphat loses by distillation only 0.14 of water: the residue boiled with pure potash leaves 08 of black oxide. The sulphat is decomposed by common salt and acetite of lead. It has proved an useful tonic, if continued in epilepsy, hysteria, pertussis, and intermittent fevers; on some occasions it has proved diuretic and anthelmintic. The dose is from a quarter to half a grain, according to the age of the person, twice a day, increased to what the stomach will bear without vomiting; but it should be increased till a nausea or sickness is occasioned. If, however, in about a month no benefit is obtained, we should desist from its use, as large quantities of copper, though gradually introduced, may be injurious. Dr. Cullen, therefore, in cases of periodic epilepsy, after employing the medicine constantly during one interval, if the disease still continues, gives it only for some days before an expected accession, and has thus succeeded. In the beginning of fevers it has been given in nauseating doses, and as a diuretic in dropsies; but as an emetic it seems to be inferior to the tartarised antimony, and is more unmanageable. As an escharotic it has been sufficiently known, and it sometimes brings on a good digestion when mercurials and arsenic have been unsuccessful. It has also been used for restraining hæmorrhages, and for removing films from the eyes, externally applied. See Lewis's and Cullen's Materia Medica.

VITRI'OLUM A'LBUM, *gilla vitrioli, calcadis*, WHITE VITRIOL, or VITRIOLATED ZINC, sometimes contains iron, and then hath an ochry appearance on its surface. It is colourless when pure, crystalises in compressed tetrahedral prisms, terminated by tetrahedral pyramids, is styptic and nauseous to the taste, dissolving in little more than twice its weight of water. Its specific gravity is 1.912, and in a dry heat it first melts in its water of crystalisation, becoming an opaque mass: in a stronger heat the acid is carried off in the form of the sulphureous acid gas. It is decomposed by all the alkalis and the alkaline earths. Its proportion of water is about thirty-nine or forty parts; but the quantity of oxide has been differently estimated from twenty to fifty hundredths. The white vitriol of commerce is of a blueish white, with ochry stains, of a granular texture, in irregular lumps, prepared in Germany by roasting blende, and then exposing it to the air. The English white vitriol is prepared by a direct combination. All these salts may be purified by dissolving the zinc, and evaporating it in an open vessel with some metallic zinc, which will decompose all the sulphats except that of lead: the last falls to the bottom.

In a medical view it is a quick active emetic, and consequently preferred where an immediate discharge from the stomach is wanted, particularly in cases of poison. As it acts without any distressing nausea, it is preferred in debilities of that organ, to which perhaps its astringent quality has contributed.

It is principally used, externally, in defluxion and inflammation of the eyes; is a powerful and safe errhine, useful in obstructions of the nostrils from indurated mucus. In small doses it is considered as an astringent and a tonic, not inferior to the flowers of zinc, and superior to them as an antispasmodic, if joined with camphor. From ten to twenty grains, dissolved in water, operate quickly as an emetic; and is on this account an useful remedy where poison has been swallowed. In the chincough, and other spasmodic complaints, it is administered with good effect in doses from half a grain to one or two grains. Dissolved in water in the proportion of ʒi. to a pint, it is used as an injection in fluor albus, gleets, and seminal weaknesses.

The linimentum zinci vitriolati is made by mixing a scruple of powdered vitriol of zinc with half an ounce of axunge; is useful in chronic inflammation of the eyelids, to which old people are subject.

Two drams of this salt, combined with as much turpentine as will make a mass, are to be divided into sixty pills. One or two of these night and morning are said to be of service in gleets, gonorrhœas, &c. See Neumann's Chemistry; Lewis and Cullen's Materia Medica.

VI'TTA, (from *vieo, to tie*). A HOOD. See PILEUS.

VITRUM PRÆPARA'TUM. Glass is rubbed down to an impalpable powder, in a mortar that will resist the mechanical action of its particles; and this powder is wholly confined to the treatment of opacities of the transparent cornea: it is most conveniently ap-

plied when mixed with a small portion of honey or mucilage.

VI'TRUM ANTIMO'NII, *stibium*. See ANTIMONIUM VITRIFICATUM.

VI'TRUM ANTIMO'NII CERATUM, *oxydum antimonii vitrificatum cum cera* Pharmacopœiæ Edinensis. The glass of antimony finely powdered, melted with wax to sheath its acrimony. It is a preparation first mentioned in the Medical Essays of Edinburgh, and recommended for dysenteries. It is now neglected, we suspect with little reason.

VOLA'TICA. See LICHEN.

VOLSE'LLA, (from *vello*). LITTLE FORCEPS. See FORCEPS.

VOLU'TTA. See MANDARU.

VO'LVA, (from *volvo, to roll up*). The membranous calyx of fungi.

VO'LVULUS, (from the same). See ILIACA PASSIO, COLICA.

VO'MER, (*vomo, to turn up*, from its resemblance to a plough-share). A bone which forms the posterior and inferior part of the septum nasi, and is placed between the ossa sphenoides and palati, receiving at its superior part the spine of the body of the os sphenoides, and the perpendicular plate or nasal lamella of the ethmoid, below the cartilaginous part of the septum.

VO'MICA PULMO'NUM, (from *vomo, to spit up*), by Hippocrates and Celsus styled ABSCESS OF THE LUNGS. (See ABSCESSUS, SCROFULA, and PHTHISIS.) Vomicæ, we have said, are hardened conglobate glands of a scrofulous kind, which, as they do not admit of a regular suppuration, so they do not heal. The cyst, however, suppurates, and the contents are discharged. This is called an open vomica; but when entire it is styled occult. In the latter state vomicæ are often attended with great irritability of the arterial system; but when suppuration begins, all the symptoms of real phthisis rapidly supervene.

If the abscess is not deeply seated in the lungs it bursts into the cavity of the breast, and forms an EMPYEMA, q. v.; but if deep, the matter will be discharged into the bronchiæ. If the orifice be small, or the whole quantity inconsiderable, the patient discharges what is contained in the lungs, and is sensibly relieved; but if large, its orifice wide, and the quantity of pus considerable, he dies suddenly from suffocation.

Dr. Reid, from Dr. Stark's manuscripts, has observed, that tubercles are found, on dissection of those who have died of phthisis, of all sizes, from the smallest granules to the bigness of a horse-bean, and commonly in clusters. On cutting into them they appear of a white, smooth, cartilaginous substance. In the smallest, no cavity or opening appears; in those farther advanced, on the divided surface we discover small cavities, which in the progress of the disease are enlarged, and some contain a fluid, which may be pressed through small apertures at the bottom. The larger tubercles, when emptied of their contents, appear like a small capsula, into which a branch of the aspera arteria has entered.

Vomicæ, according to this author, are larger tubercles, and of various sizes, from half an inch to two or three inches in diameter, usually oviform. When entire their contents are whitish, yellow, ash-coloured, greenish, sometimes fetid, and when ruptured more or less reddish. Several branches of the aspera arteria are said to open into these vomicæ, and they also communicate with those contiguous: the apertures of the latter are ragged and irregular, of the former round and smooth. The larger vomicæ are usually found empty; but on pressing the lungs matter issues into the bronchiæ. The branches of the pulmonary artery and vein running upon the vomicæ are found much contracted, sometimes filled up with a fibrous substance, and their pendulous ends hanging loose in the cavities of the vomica, completely shut up and covered with a thick slough. This seems to explain why hæmoptoë does not more frequently happen when so great a part of the substance of the lungs is destroyed, and when it does take place, the manner in which the mouths of the bleeding vessels are closed. The parts of the lungs contiguous to the vomicæ are found inflamed, more or less solid, and impervious to air blown into the trachea; nor is air admitted into the vomicæ, except in very small quantities. Wherever tubercles or vomicæ are found, they firmly adhere to the portion of the lungs near them, preventing a communication between their cavities and that of the thorax.

A cough may be suspected to arise from tubercles when it does not occur from evident cold, or begin with symptoms of catarrh; when attended with shortness of breath, particularly on motion; when it is not violent, but trifling, so as even to be denied by the patient, and when it continues many months. Our suspicions are rendered much stronger if the lungs have been severely injured by the measles, local inflammations, or other complaints; and they are altogether confirmed, if, with the above circumstances, the patient be of a thin scrofulous habit, of a fine delicate complexion, with swelled lips, glandular swellings in the neck, and a hectic fever. See Percival's Observations, p. 223.

VOMITO'RIA, (from *vomo, to vomit*). See EMETICA.

VO'MITUS, (from *vomo*). VOMITING, an inverted motion of the œsophagus and stomach, attended with increased, often convulsive, action of the muscles of the belly and the diaphragm. See EMETICA.

The matter discharged has given different denominations to this disorder: a mucous evacuation with the reliques of undigested food is called a pituitous vomiting; a bilious one constitutes a bilious vomiting: blackish, corrupt, green, æruginous, and porraceous discharges are generally bilious, changed in their colour and qualities from the matter contained in the stomach. When black blood is thrown up it is called MELÆNA, q. v., and when the cause is distant, as from a stone passing the ureter, it is called a symptomatic vomiting.

In the article of emetics we have rendered it probable that the action of the stomach is irregular and convulsive, arising chiefly from debility, and its consequence, irregular action. Vomiting can, therefore, only be styled an idiopathic disease, when its source is debility. This simple cause, however, branches into numerous others, more remote, viz. inflammation, ulcers, schirri, cancers, and indurations of this organ, bile, putrid or indigestible food, diseases of the liver, gall-bladder, pancreas, spleen, duodenum, and mesentery, repelled gout, hæmorrhoides, and eruptions, herniæ of the stomach, narcotic poisons, &c. Though some of these causes are

referrable to irritation, yet, as they originate in debility often of the stomach, they may be considered as causes of idiopathic vomiting. Various are the causes of symptomatic vomiting. These are an irritation on the brain, a passage of a stone through the ureters, or its irritation in the pelvis of the kidneys, pregnancy, unaccustomed motions, antipathies and associations, worms, &c.

The most frequent causes of idiopathic vomiting are repelled gout and eruptions, fever, narcotic poisons, particularly excess of drinking, connected also with local diseases of the stomach itself, the liver, or the adjoining viscera. In each instance the warmest cordials are necessary, especially such as determine to the surface, since we have seen that the state of the stomach is intimately connected with that of the extreme vessels. It is necessary, however, previously to evacuate any matter which may occasion the vomiting, and for this purpose we may refer to the remarks lately made (vide STOMACHUS), that different portions of this organ may be excited independent of the rest, and that only the most active emetics will, in many cases, induce the action of the whole, including the greater curvature.

When any offensive matter is introduced which we are unable wholly to evacuate we must endeavour to dilute, to render it harmless by chemical agents, or to sheath the stomach from its action. Thus we dilute bile in cholera by chicken and mutton broth, often by toast and water. We sheath mineral acids by magnesia and alkalis, and precipitate the oxides of metals from the acrid metallic salts in a milder form. When we cannot wholly succeed in this way, we sheath the stomach by demulcents.

When the exciting cause is removed, the stomach, as formerly mentioned, must be restored to its former tone; but if connected with schirrosities or indurations of the stomach or liver, we can only lessen irritability by warm opiates, until we can produce some effect on the more immediate cause.

The more common remedies for vomiting are chiefly of the stimulant kind. The carbonic acid air is highly serviceable, and more so in the saline neutral of Riverius, which is in itself an antiemetic; cold is highly useful, and cold water, by its sudden action, often relieves it. Aromatics are in general advantageous, and the irritability is sometimes repressed even by narcotics, of which we have mentioned opium, and must now add hemlock. The steel and zinc are less doubtful remedies, and the purer bitters are often useful, though bark is generally injurious. The powdered camomile flowers, the columbo, Winter's bark, and some medicines of this kind, are chiefly advantageous. Mercury seems more peculiarly useful when vomiting is connected with schirri, cartilaginous hardness, and other organical diseases of the stomach and neighbouring viscera; but we observe in the Acta Helvetica crude mercury given in the quantity of four ounces, with two ounces of oil of almonds. Aconite is confined wholly to schirrosities of the stomach.

External stimuli to the pit of the stomach are often useful. Cupping-glasses have been applied by Rumler, cataplasms of nutmeg, and rubefacients by other authors.

The inverted motion is sometimes continued through the whole track of the intestines; and clysters injected, as well as the suppositories, with the contents of the bowels have been thrown up. In this case all action must at first be checked by the free exhibition of opiates, and then the usual associated motions may be induced by stimulating the rectum, afterwards the stomach (see ILEUS). In all vomitings, food should be given in the smallest quantities, and some obstinate chronic discharges of this kind have been relieved by taking the mildest food in the smallest quantity at once: sometimes the dose that could be retained has not exceeded a table-spoonful. Toast and water taken by sips has often also quieted the most violent convulsive action, while a glass of brandy or a beer glass of Madeira has had a similar effect.

As the facts are sufficiently known, we have not crowded the page with authorities, and shall for another reason omit an enumeration of the wonderful substances and more wonderful animals discharged from the stomach. Such may have been taken in accidentally with the food, but fancy, ignorance, and superstition have greatly enlarged the catalogue; and we fear the desire of collecting wonders has sometimes rendered authors less willing to discriminate than they ought to have been.

Other secreted fluids taken up by the absorbents are sometimes discharged by vomiting, and in jaundice we have seen bile vomited which has been deposited by an evacuation from the exhalents. Urine is sometimes discharged in the same way. (Senter in the Philadelphia Medical Transactions.)

Vomiting of blood, HÆMATEMESIS, is known by dark-coloured clotted blood being thrown up from the stomach, usually mixed with much phlegm. The discharge is usually preceded by a tensive pricking pain in the stomach, or the left hypochondrium, and almost always attended with a nausea, anxiety of the præcordia, a compressing pain on the same side, and faintness. For the distinction between discharges of blood from the lungs or stomach, see HÆMOPTOE.

Bloody vomiting is sometimes the effect of an indurated spleen, a varicous state of the vasa brevia of the arteries in the upper left portion of the stomach, or of the neighbouring vessels. Women are particularly subject to this complaint on a suppression of the menses, from passion, frights, grief, pregnancy, &c.; men from suppressed hæmorrhoids.

The bloody vomiting, which happens about the middle of pregnancy, in some plethoric habits is rarely injurious; and during labour, or even in child-bed, if the quantity be small, it is not hurtful. If without fever, if the habit be plethoric, if any usual evacuation is obstructed, it is not dangerous; but if a fever attends, if the blood discharged be black and fetid, or if induced by either an enlargement of the spleen or an induration of the liver, or attended by violent syncope, there is little hope.

Unless there is manifest inflammation or plethora, bleeding is unnecessary. A cooling diet, nitre in cold water, with opium, often a blister to the stomach, with absolute rest, will be useful. Mild demulcent drinks are sometimes useful, but astringents are unnecessary or injurious. Gentle purgatives should afterwards be employed to carry off the blood, and the circulation should be promoted in the extremest vessels by medicines which will not stimulate.

When the vomiting ceases, and the patient seems griped from the stagnant blood, a table-spoonful of cas-

tor oil will be useful. See Meibomii Dissert. de Vomitu; Hoffmann's Pract. of Med.; Cullen's First Lines, vol. iii. p. 51—66. edit. 4.

VOX, (*ab ηχεω, sono*, with the digamma prefixed). The VOICE. The gift of speech is the peculiar privilege of the human race, while sounds are common apparently to every animal that breathes with lungs. The subject is, therefore, divided naturally into *tones* and *articulation*; the former possessed by animals, the latter peculiar to man. The organs by which they are produced are also different; for tones depend on the form and structure of the larynx, articulation on the muscles of respiration, on the tongue, the palate, and the lips. Articulation, however, is not our object, though, as nihil humani is beyond our province, we shall add a few words at the end on this subject.

In describing the larynx (see ASPERA ARTERIA) we gave a general account of the parts, their figure and situation. A more minute one is now requisite; but, as in the ear, we shall not describe every cavity or cartilaginous projection, as the application is not obvious. It will be sufficient in this place to notice some of the more distinct portions of this organ which seem to have a connection with the function.

The larynx is one-third larger in males than in females, and the eminence on the thyroid cartilage is more considerable. The epiglottis seems to have no share in giving either tone or articulation; for birds sing without it, and it is apparently necessary only in animals to prevent substances from falling into the trachea. Behind the epiglottis is the first cavity of the larynx, of which the larger diameter is in front, the smaller behind. This cavity is filled with membranes passing to the aretænoid cartilages, at the sides; but is not, strictly speaking, the glottis. Two pair of ligaments proceed from these cartilages to the posterior concave surface of the thyroid. The upper and exterior ones are less tendinous and elastic, pass from above the middle of the aretænoid cartilage to about the middle of the scutiform. The inferior ligaments are strong, elastic, and tendinous, covered by the membrane of the larynx, and proceed from below the middle of the aretænoid cartilage, though far above its base, to the plane angle of the thyroid about its middle. This portion is more strictly styled the glottis, and the ligaments, apparently from necessity, have been supposed muscular; but it will be obvious that a muscular structure is unnecessary; for, by drawing the aretænoid cartilages down, or raising the larynx while the thyroid cartilage is drawn forward, they may be stretched, and for these purposes numerous muscles are provided. The small cavity between the ligaments is styled the *rima glottidis*. This is so accurately closed in birds, in amphibious and cold-blooded animals, that air can neither pass out from, nor water enter, the trachea except at will. In this way frogs confine the air in the lungs, and live without any accession of fresh air for a considerable time. Birds, instead of these ligaments, have sometimes other cartilages, sometimes bony shells, which can be closed with considerable accuracy.

Between these two ligaments, and above the glottis, is a cavity of a semicircular or a parabolic form, whose opening is eliptical, and whose surface is covered with many mucous cellular sinuses. It is very large in animals distinguished for vocal powers; but constantly wanting in infants.

There are other ligaments joining the cartilages of the larynx, which are sometimes tense and shining, at others membranous. They are too minute to merit particular attention; but the former probably assist the voice. The whole larynx may be certainly raised; but it has been doubted whether its parts can be moved independent of each other. Ferrein contends, that the thyroid cartilages may be drawn forward while the aretænoid cartilages are moved in a contrary direction, and that the ligaments are thus kept tense. This motion may be perceived, it is said, by the finger, and the cartilages, it is reported, have been separated by a sound too acute. These opposed motions come, however, before us in a suspicious shape, since the fact is adduced in aid of a theory; but it certainly has received some support from other anatomists. Haller appears to deny them, and thinks that if the scutiform cartilage is drawn forward, that the whole larynx follows; but a similar suspicion attaches to his evidence.

The arteries of the larynx are the superior and inferior. The former is the superior thyroid artery, a branch of the external carotid, and often not inferior in size to the cerebral or interior carotid: they appear three almost equal branches; but sometimes the thyroid arises a few lines above the separation of the cerebral. It descends in a tortuous direction, forming a circle with its opposite, and sinking into the surcula of the lobes of the thyroid gland, as is usual in conglomerate glands. Branches go to the aspera arteria and the neighbouring organs; but the laryngeal artery, which often rises separately from the trunk of the external carotid, sometimes from the pharyngeal, is most frequently a branch of the thyroid, passing to the larynx between the thyroid cartilage and the os hyoides.

The inferior thyroid is equal to the vertebral artery, sometimes larger, and even larger than the whole subclavian from whence it arises. It has sometimes sprung from the arch of the aorta, and in one, perhaps one instance only, from the carotid.

The veins do not always follow the arteries; the first order is that of the inferior thyroids, which are frequently double, and rise from the left subclavian, accompanying the lesser branches of the lower thyroid artery. Another vein is connected with the jugular, and a principal branch passes with the artery under the scutiform cartilage. The middle thyroid veins, usually two, belong to the internal jugular, between its origin and the superior jugular. The superior thyroid is single, or arises from two roots which quickly unite.

The principal nerve of the larynx is the recurrent, whose course we have carefully described, page 244 (see NERVI). It is the largest branch of the eighth pair; and, though it sends branches to the muscles of the larynx and the different plexuses, which supply organs not wholly subservient to the will, it seems to preserve its own medullary substance without addition. Having ran a long course, for this purpose, it returns to supply the larynx with powers entirely voluntary.

We have engaged in this disquisition, which, though apparently minute, might have been rendered much more so, to show that the organ of the voice is peculiarly constructed; that the arrangement of its arteries and nerves

is uncommon; and we have seen that the motions of its parts are free, and the muscular organs numerous and minute. A more complicated structure is scarcely found in the eye or ear. Voice consists in the passage of the air through the glottis in expiration, though some sounds are made, as in pertussis and croop, during inspiration. In cases of wounds, however, where the air does not pass through the glottis, the voice is lost, except in birds, which have an additional organ at the divarication of the trachea, viz. dense membranes placed parallel to each other. The air, in its passage, produces tremors in the cartilages of the larynx, and the tenser ligaments already described; for, if these are covered with an additional quantity of mucus, as in a cold, or, if the air is forced through the glottis after death, the sound is neither clear nor distinct. The deepest roarings are produced by animals which have the cartilages of the trachea entire; and, if not entire, imbricated, or which have bones instead of cartilages, as the lion, elephant, and peacock. On the contrary, the voice is weak in the hedgehog and casowary, unpleasantly deep and harsh in aquatic birds, in which the elastic membranes in the second larynx repeat the sound. The vibration, which is partly in the whole larynx, may be felt with the finger, and the tremor, probably conveyed with the ligaments, excites the same tone in other vibrating bodies, as in glass. By continuation these tremors may be increased so as to break the glass. Ferrein also found, that if the whole larynx was removed, except the ligaments, air forced through them produced the same sound as in the animal when alive.

It is not easy to explain why in a structure which consists chiefly of ligaments distended by powers of different force, so great a variety of voices and tones can be produced. Ferrein indeed tells us, that, by only contracting the glottis, he could produce the sounds of an ox and a man. The fact is, however, incredible; and the experiment has not succeeded in other hands. It may appear still more difficult to explain why the ligaments of the glottis should sometimes move more quickly, so as to produce acute tones; sometimes more slowly, so as to sound graver ones. Observation, however, has afforded us some clue. We have seen, that the larynx is moveable, and it has been seen to rise in acute sounds, and to descend in grave ones. Hence those whose voices are naturally too grave conquer the defect by raising the larynx. In producing musical sounds after ten tones, we commence a new octave. Some men, however, can produce twelve; very fine singers exceed sixteen, descending equally far below the gravest tone. To produce this variation of four octaves the ascent and descent must be very considerable, amounting to an inch in each direction, or two in the whole. In the greatest efforts of the singer the head is thrown back, to admit of the greatest possible elevation of the larynx.

Though the facts be admitted, the application is not easy. If the difference of the tones is owing to the increased or diminished length of the larynx, we ought to find, from the rules of phonics, that raising the latter so as to increase the length should produce grave sounds, while shortening it must occasion acute ones. Dodart, who suggested this distinction, supposed, therefore, that the larynx in its ascent contracted the glottis, and in descending admitted of its expansion. Some muscular contraction has also been suspected in the ligaments, an idea countenanced by Morgagni (Adversaria Anatomica, ii. 31). Thus the larger glottis of the male is calculated to afford graver sounds than the more contracted one of the female. Animals also, which have deep-toned voices, have very large glottes, as the phoca, the ox, ardea stellaria, &c. Birds, on the contrary, who sound the acutest notes, have the glottis capable of the greatest contraction. From this, in Dodart's opinion, all the varieties of tone are derived; and a variation not exceeding one fifty-fourth of a silkworm's thread or one-three-hundred and fifty-fourth of a hair will, in his opinion, produce a difference of tone.

Dodart was, however, aware of the effect also of the tension of the ligaments; but in his system it had only a secondary office. Ferrein, by his experiments, first raised its importance, and he contended, that, though by the constriction of the glottis the force of the sound was increased, the tone was not changed; he observed, that when the ligaments vibrated more rapidly, the sound was more acute; when all vibration was prevented, that the sound was suspended. If, by any impediment, one half of the ligament was only suffered to vibrate, the sound was increased an octave, and to a fifth if a third part of its length only was free; if divided by a kind of bridge, in the middle, it formed two cords, each of which was an octave more acute than the original tone. If divided into two unequal portions, the voice will ascend unequally. If the middle part of one ligament only is left free, while the other is entire, there will be a symphony of two tones, differing by an octave; and if every other part of the glottis is destroyed, except the connection of the ligaments, they will produce the same tones as before. Yet, it is difficult to show by what mechanism these changes are induced in the living body; for, though the tension may be increased, and in part the length, yet no mechanism is adapted to limit the length of the cord, or to divide it; nor are the experiments of Ferrein wholly uncontradicted, even by the members of the French Academy before whom they were made.

The consequence of these experiments, which have occasioned a considerable controversy extended to a great length, is obvious, viz. that the glottis is not only a wind but a stringed instrument. It is evident in birds, where it can be closed so accurately that not the smallest drop of water can penetrate, and whose notes, though within a limited scale, ascend high, and by the most minute divisions, that the rima must be a principal agent. It is equally certain, from the effects of disease, that the tension of the ligaments is not less necessary. Yet, together, they go but a little way in explaining the very minute and complicated variation of the tones of this most exquisite instrument, the human voice. Auxiliary organs are undoubtedly required, and these are the nose, the palate, perhaps the uvula and the lips. The latter in particular vary the acuteness of the sound from a bawl to a whistle, though by no means the cause of acute sounds in general. These organs, however, greatly influence, indeed are the sole cause of, articulate sounds, as philologists particularly

show, and who, from the influence of each organ, divide letters into labial, palatal, nasal, &c.

The voice is greatly injured by causes which seem to affect the tension of the ligaments, and the action of those very minute muscles which move the parts of the glottis on each other. A catarrh produces inflammation of the larynx, and destroys the voice, not only by diminishing the elasticity of the ligaments, but by the mucus secreted, which apparently prevents their vibrations. We have seen that inflammation increases the tension of nerves, and consequently their sensibility. This change, therefore, shows that the ligaments are only simple solids, acted on by the muscles as living organs. The influence of the muscles is particularly felt in this part, from diseases arising from debility. We have remarked the change of voice in fevers, and the true copy from nature in the pages of our great dramatic bard, who represents Cæsar, when in the fit of an intermittent, as crying with the "voice of a sick girl." In hysteric diseases the sound of the voice also is greatly changed, and sometimes wholly destroyed. A singularity, however, not easy to explain is, that the voice will be sometimes recovered for a few minutes, perhaps for a few hours, without any evident cause, and be again lost. It has happened also that a sentence begun in a grave tone has been involuntarily continued in an acute one.

In palsy, not only the voice is weakened, but the articulation in a great degree lost. The former arises from the weakness of the muscles of the larynx, the latter from the same affection of the tongue, lips, &c. Each is, in some degree, recovered, and the articulation is apparently again learnt. Words are mistaken from the injured recollection, often from a disturbance of the usual associations; and sometimes when the proper word is pronounced with difficulty, a more easy one, which leads to, rather than expresses, the meaning is preferred. The mind recovers slowly and spontaneously; in the recovery of the articulation, it appears that muscular fibres, different from those usually employed for a given purpose, are called in to the assistance of such as are injured, as the rotators of the thigh are employed to raise the leg.

It will be more easy to understand how, from the elevation of the larynx, and the continuation of an acute tone, the lungs may be diseased, the vessels of the head filled, and vertigo, or even apoplexy, come on; for if the rima glottidis is closed, and the acute tone continued with slow expiration, all the effects of impeded respiration will ensue. Bartholine has mentioned a case in which the cartilages of the larynx were torn asunder by a similar effort; and Pliny records a story of a nightingale dying, from extraordinary exertions to excel a rival. Plutarch records of Gracchus, that, from violent exertion in speaking, his voice sunk into a feminine treble, from which he was recalled by a servant giving the proper tone with a pipe.

If any one wishes to sound a graver note than the structure of his larynx will permit, his voice will fail, and no sound be produced; for the ligaments will be relaxed by the extreme exertion, and the rima glottidis no longer closed by the action of the muscles. Singers require frequently some fluid to moisten the mouth; for the rapid motion of the air exhales all the moisture, and though the fluid does not reach the glottis, yet moistening the parts around supplies the secreted fluid, as washing out the mouth will take off a dryness in the throat.

The subject of singing would carry us beyond the proper object of this work; yet we must, as anatomists, remark, that the perfect singer must have a most accurate ear so as to discover the minutest error; a perfect symmetry of the organs of voice; the ligaments of the larynx equally tense, and balanced most nicely by the powers of the muscles in each side; the cartilages of the larynx perfectly equal, a circumstance by no means constant; the cavities on each side equally deep, for they are sometimes unequal; and the cornua of the os hyoides of the same length. In case of any considerable defect in this equilibrium, the two sides of the larynx will not produce the same tone. Tissot remarks that after puberty the fibres of the glottis are thicker, and emit a graver tone, but not equally or the same in every part, from which a false voice often follows. Taglini remarks, that in a celebrated female singer the cartilages of the larynx were peculiarly firm.

See Morgagni Adversaria, v. 67, vi. 529; Caldani Syndesmologia; Amman de Loquela; Eustachii Tabulæ; Fabricius de Larynge; Dodart dans les Memoires de l'Academie, 1700; Ferrein dans les memes, 1741; Santorini Lettres sur la Nouveau Systeme de la Voix; Dodard Lettre a, M. D. sur le Nouveau Systeme, &c.; Runge de Voce ejusque Organis; Halleri Elementa Physiologiæ, vol. iii.; Wedel de Voce et ejus Affectibus.

VOX ABSCI'SSA, (from *voco, to call*, and *absedo, to be taken away*). See ABSCISSIO.

VULNERA'RIA, (from *vulnus, a wound*); *traumatica*; VULNERARIES; medicines suited to promote the cure of wounds. As this, however, is wholly an operation of nature, the surgeon has hardly any other object than to avoid or remove the circumstances which might impede it. No internal medicine can be of use to obviate or remove recent wounds; and, at least, what are styled *vulneraries* can have no effect. It is indeed possible that the Peruvian bark, and other tonics, may be sometimes useful in correcting the weakness of the system; but as they are intended to answer a particular indication, they should be included under that title. Cullen.

VULNERA'RIA A'QUA. See ARQUEBUSADE.

VU'LNUS. A WOUND; *punctura*, a recent bloody solution of continuity in the soft parts, made by a hard, sharp instrument. When inflicted by obtuse instruments it is styled *lacerata*. Dr. Cullen defines it a recent solution of continuity, bloody, of some soft part, occasioned by violence done to the part.

Superficial wounds, when cleaned from the blood, &c. are perceptible to the sight; but when beyond its reach they are better examined with the finger than the probe; where too small for the finger, a bougie is preferable from its flexibility; but it gives no information of the state of the bone, or the nature of any foreign body lodged there. In examining a wound we should know the attitude of the patient when he received it, the kind of weapon, its direction, force, and the nature of the discharges.

The danger of the wound is in proportion to the size of the vessels divided, and the importance of the injured

part to life. The nearer a wound is to a vital part the more dangerous; and those in the joints, or in any part subject to constant motion, as in the lungs or belly, are supposed to be healed with peculiar difficulty. But for this decision there is little real foundation. The attending symptoms, the age, constitution, customs, and habits of the patient should influence our prognostic, and the probable consequences at least hinted at. If a principal artery or nerve is wounded, a fatal hæmorrhage or a future palsy may be apprehended, and the separation of the tendon destroys the motion of a joint. An immoderate suppuration in a deep wound may cause a hectic fever, or consume the patient in a marasmus, while great loss of blood endangers a dropsy.

But to be more particular. The size of wounds is by no means a criterion of their danger, for in the Copenhagen Transactions and Medical Commentaries there are many instances of the cure of the most formidable injuries of this kind. If, however, the heart, perhaps the spleen, the liver, near the vena portæ, or any large vessel is wounded, death will soon, if it do not immediately, ensue; and the same fatal event will follow wounds of the more considerable vessels in either extremity, as well as of the intestines, diaphragm, or mesentery. Even the small vessels, if wounded where the hæmorrhage can neither be stopped by pressure or a suture, as in the brain, sometimes the radial artery of the fore arm, &c. will soon be fatal. A division of any considerable nerve, as of the spinal marrow, a deep wound of the cerebellum, are of course fatal; and should the great cardiac plexus be deeply wounded, the event would not be different: but a wound in any other nerve of the internal organs is of less importance, as they are so minutely mixed and again separated, so that a weakness rather than a destruction of the functions of the part will ensue. Wounds which interrupt the function of respiration, or those which prevent the passage of chyle to the blood-vessels, must be equally fatal.

A wound is, in the first instance, merely a simple division of a soft part, and if the lips are again brought together and confined, either by a plaster or a suture, they will unite with little difficulty. This is what the surgeons style *healing by the first intention.* If, however, neglected, the parts around swell, the lips become fuller, red, and retracted, the bottom of the wound is more conspicuous, inflammation and fever ensue. A cake of coagulated blood accumulates, below which a thinner fluid exudes, which soon becomes purulent. The cake is then thrown off, new flesh is apparently formed under the purulent matter, which soon fills up the cavity, and even rises above it. Should the wound be lacerated, the process of suppuration is attended with greater pain and inflammation: it extends to the ragged edges of the wound, and the cavity is greatly enlarged by the destruction of those parts whose organisation by the bruise or laceration has been destroyed. If a muscle has been divided, the retraction of the parts is more considerable, and they must be brought together by a few stitches, or the time required in healing will be very considerable. If the muscle is wholly divided, the use of the part which it supplies will be in a great degree lost, though by the union which takes place it will be partly again recovered. Surgeons have been greatly divided respecting the propriety or advantages of sutures. While some authors, particularly Mr. Bell, think them always advisable, except in the slightest cuts; others endeavour to supply their place by slips of sticking plaster. The latter will not, however, always succeed, and the former acting as irritating substances often increase inflammation. We have mentioned the stitches cursorily, as we always wish to avoid them for this reason; but the sticking plaster will not always retain the lips of the wound in their proper situation without the assistance of the stitches. When they are necessary, however, they should be as few as will answer the purpose.

The granulations which fill wounds rise in small protuberances, from which their name is derived. They have been styled new flesh, an idea to which their red colour has given birth. It is not, however, an organised body, though vessels are freely distributed through it from an extension probably of the serpentine arteries around. The proof of its not being an organised body is, that it has no functions; when its growth is at an end it assumes the form and appearance of a condensed cellular substance, and it expatiates beyond its boundaries in a fungous substance, vulgarly styled *proud flesh.* It extends, however, but slightly beyond its limits, and is soon covered with skin, but the cicatrix is tumid and unequal. When the parts are not brought properly together, the cicatrix is depressed, seamed, and uneven; but in each case vessels are plentifully dispersed through the covering, which is not the real cutis, for in wounds this is never regenerated; and when the skins of animals are prepared, there is always a hole where a former wound has been inflicted.

The wound of an artery is known by observing the blood thrown out in regularly returning jets, synchronous with the pulse. If the artery is considerable, and cannot be secured, it is, as we have said, fatal. If so great only as to induce faintness, the sides of the vessel collapse, and a coagulum of blood closes the wound. The limb below is at first colder and weaker, but the anastomosing branches soon supply it, and the natural warmth returns. Any artery, however, so large as to induce considerable palsy from its wound would be fatal from the discharge: palsy is only seen when the vessel is tied above an aneurismal sac.

When extraneous bodies are extracted, if it can be done with safety, the hæmorrhages suppressed, all morbid tension in the wounded part, if possible, removed, and the lips of the wound brought properly together, the dressings may be pledgets of soft lint, covered, if necessary, with tow, spread with some digestive ointment. These may be secured by bandages, and the first dressings are usually allowed to remain two or three days, or until the discharge of matter renders their separation easy. After the first dressings are removed, they may be repeated every twelve or twenty-four hours, in proportion to the degree or acrimony of the discharge. If a warm digestive is required, a little of the oleum terebinthinæ vel balsami capivæ may be added to the unguentum resinæ flavæ. When the wound is dressed it should be gently pressed with soft lint, and not rudely wiped, as was formerly the custom, when it was supposed that the pus was injurious. We now know that the granulations shoot most successfully under its protection.

Mr. Sharp observes, that the principal interruption to the healing of a wound made with a sharp instru-

ment is the fungus, which he suppresses by dry lint and a proper compress. If it advances above the surface of the skin, he recommends touching the edges only with some gentle escharotic. A general relaxation is, however, a more frequent impediment to the healing of a wound, which then assumes a glassy appearance, with white lips, and resembles in its nature an ulcer. Tonics internally, and the bark, with lime-water externally, are in this case the best remedies. When all impediments are removed, nature soon forms a cicatrix. If, however, the instrument has passed obliquely through the skin, and the extremity of the wound is above its orifice, the sinus may be sometimes united by pressure, or the whole may be opened, at least so far as to make the orifice the depending part.

These are chiefly the appearances of simple wounds, where no adventitious circumstances give a colour or a variety to the symptoms. If the patient be strong, vigorous, and of a full habit, the wound is attended with considerable inflammation, and violent fever ensues. If not kept at rest, if the mind be not calm and composed, but agitated by anxiety or passion, the fever is still more violent. The topical injury is increased by the fever, which is in turn augmented by the inflammation of the wound. In this case, the strictest diet, the most cooling plan, with camphor and opium, soothing the mind by every consolatory prospect, and avoiding every source of additional distress, are highly necessary. In the opposite circumstances, the wound is ichorous, the lips pale, the discharge thin, as already mentioned, and the opposite course must be pursued.

When the artery has been tied, there are often small bleedings from almost imperceptible vessels, which a bandage will frequently relieve. When they occur in the young and strong, they arise from fulness, and nature will in general heal the orifice by the coagulation of the discharge. If, however, it continues, it has been sometimes useful to take some blood from a vein, or, by taking off the ligature from one of the smaller arteries, to encourage topical bleeding. When these hæmorrhages arise in feeble habits, the bark with wine are necessary, and the wound may be sprinkled with starch, or the powder of gum-arabic. If this should fail, the tincture of myrrh, or pure alcohol saturated with this gum may be applied, or indeed any other resinous tincture, which deposits its contents on the addition of a serous fluid, the coagulation of which also the alcohol assists. A steady pressure is afterwards necessary, and if a bandage cannot conveniently be applied, the hand of an assistant must supply its place.

Wounds in the principal internal blood-vessels are all deemed mortal; but blood is sometimes discharged from smaller vessels into the cavity of the breast or of the belly. If in the breast it occasions a difficulty of breathing, increased in an erect posture; though, if blood is discharged into both the cavities of the breast, the patient can only lie on his back, or stand in an erect posture. If the wound is in the lower part of the breast the patient must be laid on the wounded side, and the lungs replaced, that the blood may pass out; but if in the upper part of the breast, an opening must be made behind and below, about five inches from the spine; but until the hæmorrhage appears to have ceased, which may be judged of by the strength and equality of the pulse, and the warmth of the patient's extremities, the operation will be useless. When the opening is made, the expulsion of the matter is assisted by the efforts of respiration. In these cases the patient must be kept still, and gentle opiates given if a cough attends.

Wounds of the abdomen require a particular attention lest the viscera be protruded, or the air have access, which will produce inflammation. If the viscera are not protruded, it is easily perceived if they are wounded, by the acute pain and fever, with faintness, anxiety, hiccough, &c. The external aperture must be carefully closed, but another inconvenience then follows, for the cavity of the abdomen receives the extravasated blood and the contents of the intestines, from whence cold sweats, fainting, and death, soon ensue. Yet when the intestines have been wounded and protruded, if soon replaced, the wound contracts, and sometimes heals, by adhering to the parietes of the abdomen, sometimes by passing a few stitches through it, leaving the extremities through the external wound as formerly directed. The whole process must be hastened, for in proportion to the time the intestine is exposed to the air the danger is increased.

Wounds in the cavities of the joints are equally injured by the access of air, and should be immediately closed; but if attended with fracture or severe dislocation, AMPUTATION cannot be avoided: vide in verbo. Wounds of the nerves, if the nerve is not wholly divided, are often attended with symptoms of irritation, which makes the division of the whole nerve necessary. (See TETANUS.) Where this is inexpedient or impracticable, large doses of opium internally, with its topical application, or the topical application either of narcotics or indirect stimulants will sometimes succeed. In these, and in wounds of the joints, every thing soothing and calming is peculiarly useful.

In the general conduct of wounded persons some regard should be paid to former habits. The coal-heaver cannot be fed so low as the more abstemious student, and in general every plan should be regulated by former customs and its effects. Purgatives are generally avoided, principally from their inconvenience; but a moderate discharge from the bowels is highly necessary in the robust and inflammatory constitutions. Cold water and cold air are highly recommended, but must be employed with caution in cases of violent inflammatory action, as likely to bring on sphacelus. Of the spirituous applications we have already spoken, and of the sympathetic cures we shall not be expected to speak. The apartment should be large, and the air free. In hospitals we should avoid the vicinity of putrid diseases, as these often give a putrid character to wounds.

When a small artery is punctured, or partially divided, if to be reached conveniently, it may be wholly divided, or the wound enlarged, and the artery tied, should proper pressure have proved ineffectual. When a large artery is punctured or divided, it must be taken up and secured with the needle and ligature. Wounds in the axillary artery, and also of the femoral, if near the body, generally demand an amputation of the limb, if it be practicable.

Gun-shot wounds. See SCLOPETOPLAGA.

See Celsus; Wiseman's Chirurgical Tracts; Manneni Trattado sopra la semplicitá di medicar i mali d'attenza alla Chirurgia; Paræi Opera, lib. viii. &c; Me-

moires de l'Academie de Chirurgerie, passim; Stahl de Æstimatione partium et læsionum. Theden N. Bemerkunken und Efahrungen, &c.; Heister's Surgery; Gooch's Practical Treatise of Wounds; Dease on Wounds of the Head; Bell's Surgery, vol. i. p. 97, 105; vol. iii. p. 253; vol. v. p. 9—356; White's Surgery, p. 82, 175.

VULPA'NSER, (from *vulpes*, and *anser*, because though a *goose*, it has the habits of a *fox*); *chenalopex*, *tadorna*. The SHELL-DRAKE, or BURROW-DUCK, a very beautiful species of duck common on some of our coasts, but dry, fishy, and hard of digestion.

VU'LVA, (quasi *valvæ*, folding doors). The pudendum muliebre, or external female organs, whose labia are folded together. These valvæ are merely duplicatures of the skin, to admit of distension in labour, when the duplicature disappears. They are consequently subject to rupture, ulcers, inflammation, anasarcous tumours, excoriations, cancers, excrescences, warts, fungi, plica, &c.; in short every disease which can arise from pressure, bruises, or acrid discharges. As they consist, however, only of the common integument, with a loose cellular texture, and generally some adipose substance, its diseases yield to common treatment, and any tumour may be with safety extirpated. See also CEREBRUM.

VULVARIA, (from its use in disorders of females). See ATRIPLEX FŒTIDA.

W.

WADT. See PLUMBUM NIGRUM.

WARNE'LLA. See HURA.

WILLI'SII GLA'NDULÆ. See CEREBRUM.

WINTERA'NA CANE'LLA; JAMAICENSIS. See CANELLA ALBA.

WINTERA'NUS CO'RTEX, (from captain Winter, who first brought it to Europe). *Cortex Magellanicus,* et *antiscorbuticus, cinnamomum Magellanicum, laurifolia Magellanica,* the WILD, or WINTER'S CINNAMON-TREE. It has been considered as a species of *Wintera* Linnæi, of the order *dodecandria monogynia,* a genus which Wildenow has rejected from this order, retaining only the *canella.* He has inserted the *Wintera aromatica,* to which the Winter's bark has been constantly referred in the polyandria tetragynia, vol. ii. p. 1239; but the French naturalists have referred it to a distinct genus, *drymis.* It is evidently different from the canella, and more highly aromatic.

Captain Winter brought it from the streights of Magellan in the year 1579; and in 1691, Mr. George Handasyd brought some specimens of branches, &c. from this tree, and gave them to sir Hans Sloane, who has described it in the Philosophical Transactions for 1693. But a more perfect description has been obtained by the joint aid of captain Wallis, sir Joseph Banks, and Dr. Solander, who, in the year 1766, observed it in its native countries. See Medical Observations and Inquiries, v. 46; Linnæan Transactions, i. 96.

The bark is said to be of different degrees of thickness, from a quarter to three quarters of an inch, of a dark cinnamon-colour, having, if rubbed, an aromatic odour, and a pungent, hot, spicy taste; its effect on the palate is slow, but durable.

Dr. Morris in the fifth volume of the London Medical Observations and Inquiries has shown that it is an astringent, soluble freely in water, as well as in rectified and proof spirit. It covers the disagreeable taste of sena and some other drugs very effectually.

Captain Winter's sailors used it as a spice, and afterwards found it useful in the scurvy; but its substitute, the canella alba, hath been most commonly employed, an error apparently of little importance. Winter's bark is useful to promote digestion, in palsy and dropsy, and in some instances of remitting and intermitting fevers, but seems to have little superiority to other stimulants.

The Winter's bark is in larger pieces than the canella alba, of a more rugged surface, a deeper colour, more agreeable smell, a warmer taste, more pungent, and less bitter. The canella alba is in rolls, somewhat thicker than cinnamon, and is the double bark of the tree from whence it is taken. Perhaps, however, they may differ only from the age of the tree.

WISMU'THUM. See BISMUTHUM.

WORMIA'NA O'SSA, (from Wormius, who first described them). See TRIQUETRA OSSA.

X.

XA'LAPA, (from a province of New Spain). See JALAPA.

XA'NTHIUM, (ξανθος, because it is said to make the hair *yellow*). See BARDANA MINOR.

XANTOLI'NA. See SANTONICUM.

XERA'SIA, (from ξηρος, *dry*); a species of alopecia, consisting in a dryness and powdery appearance of the hairs, for want of due nourishment. They are in these circumstances generally split at the tops.

XEROPHTHA'LMIA, (from ξηρος, and οφθαλμια); *lippitudo* and *ophthalmia sicca;* a DRY OPHTHALMIA, when the eye is dry, hot, and rough, the eyelids covered with dry scales. The sclerophthalmia, from σκληρος, *hard,* and οφθαλμος, is an inflammation of the eye, attended not only with a hardness and slowness of motion, but with a pain and redness. The eyelids are hard and dry, never effusing any moisture, with small, contorted, dryish, mucous concretions in their corners, and a difficulty of opening them after sleep. The xerophthalmia is said, by James, to be a lesser degree of the sclerophthalmia. In Cullen's Nosology it is a variety of ophthalmia tarsi, and synonymous with Sauvages' ophthalmia sicca. See OPHTHALMIA.

XI'PHIUM, (from ξιφος, *a sword,* from the sword-like shape of its leaves). See GLADIOLUS.

XIPHOI'DES CARTILAGO, (from ξιφος, *a sword,* and ειδος, *a shape*). See ENSIFORMIS.

XITO'MA. CAPOLIN, a sort of cherry. See CAPOLIN MEXIC. HERNAN.

XYLOA'LOE. See AGALLOCHUM.

XYLOBA'LSAMUM. See BALSAMUM.

XYLOCO'CCA. See SILIQUA DULCIS.

XYLOCA'SSIA, (from ξυλον, *wood,* and κασσια, *cassia*). See CASSIA LIGNEA.

XYLOCINNAMO'MUM, (from ξυλον, and κινναμομον). See CINNAMOMUM.

XY'LON. See BOMBAX.

XY'RIS. See IRIS FOETIDA.

Y

YABA'CANI. See Apinel.

YAM. An esculent root, procured from three species of dioscorea, viz. *d. alata, bulbifera,* and *sativa* Lin. Sp. Pl. 1462, 1463; farinaceous, and when dry easily preserved. The colour, size, and weight greatly vary, but the quality does not differ.

YAWS. *Frambœsia*; placed by Dr. Cullen with the *impetigines*, without any definition, though he mentions two varieties, that of Guinea and America. It is apparently endemial in Guinea, and carried by the negroes to America.

Whether there is any foundation for supposing the disease to be different on the coast of Africa and in America we greatly doubt. The appearances are nearly the same, though the disease of St. Domingo is said to appear first on the leg, a variety seemingly of little importance. The subsequent eruptions do not differ. The disease is said to attack but once in the life, to be attended with specific fever, and to have its regular increase, state, and declension (Ludford Dissertatio Inauguralis); and therefore to be more nearly allied to the exanthemata than the impetigines.

The first symptom of the disease is a shivering, followed by a slow fever, often unobserved. The lassitude, however, want of appetite, pains in the head and loins, so great as to prevent sleep, force themselves on observation. The skin then begins to swell, the sure precursor of an eruption. When the disease advances more slowly, it appears by obstinate ulcers, which while open seem to preserve the patient from the eruptions, for the latter appear on healing them. They begin with little spots, like the prick of a pin, and extend around till they rise in pimples. The epidermis then separates, discovering a white spot, under which a fungous excrescence forms of different sizes, from a small strawberry to a mulberry. During their growth the hairs become white and transparent.

It is singular that this endemic disease of Africa should not have been known to the ancients; but their descriptions, though animated, and often clear, are not always discriminated. We find, however, a similar disease in the Molucca islands (Bontius Methodus Medendi in Indiis), and we think in the sibbens in Scotland (Adams on Morbid Poisons, p. 176, and 196); nor is it improbable that Galen and Discorides mention it under the name of terminthus, tereminthus, and terebinthus (Galen in lib. vi; Hippocratis be Morbis vulgaribus, Mathiolus in Dioscoridem, lib. i. 108). Severinus (de Recondita Abscessum Natura) has traced its appearance in succeeding authors, with a greater or less degree of probability, in which we need not follow him.

The disease generally attacks the poor, those badly fed, and worn down by distress and labour. The ulcer appears always of a malignant kind, extending insensibly, and resisting the most active remedies. The excrescences resemble the berries of the Phœnician cedar, at first green, and verging by degrees to a greenish black, or a deep violet, like the berries of the juniper. The eruptions proceed slowly, scarcely making any remarkable progress in many weeks. When they follow their usual route, they appear first in the axillæ, anus, and around the genital organs, particularly in the face and neck, where they become larger than in any other part. After the eruption, the fever lessens, the appetite returns, and every inconvenience appears to vanish. The patient is apparently cured, excepting the pustules, which give little pain, if not exposed to external violence.

In this deceitful interval of rest the disease seems to acquire fresh strength internally. The pustules increase and throw out a sanious, at least a corrosive, matter, and one of the earliest crops, styled the *mother yaw*, becomes a malignant spreading ulcer, which destroys all the surrounding parts, not excepting the bones; and medicines which are, in slighter degrees of the disease, salutary, seem only to increase the voracity of this monster. The excrescences are more rapid in their appearance in proportion to the degree of fever and the strength of the constitution, and the disease in consequence milder.

Those who are weak and relaxed soon fall into cachexy and ascites; the stronger habits sink in an atrophy. The last stages of the disease are horrible. The heads of the bones are consumed by carious exostoses, the pains excruciating, the debility extreme, and so dreadful is the state, that an incurable palsy, in one part, is esteemed a desirable crisis. It is said, if cured, never again to attack the same person.

The eruption is usually completed in three months; but in the best circumstances the cure is seldom finished within the year. The disease is infectious, and frequently communicated in the commerce of the sexes, or by sucking. The seminium is, in the former way, communicated to the fœtus.

This detail of symptoms shows, as already hinted, that the disease is truly exanthematous, and that it is neither connected with diet nor with lues. The latter idea has been peculiarly unfortunate, since it has led to the use of mercury: a remedy, except under particular circumstances, little adapted to the complaint (Bayon).

The great objects of the physician are to support the strength and to determine to the surface, avoiding, at the same time, all acrimony in the diet. The latter should be wholly of vegetables, and as barley often purges negroes, this should be avoided. Salt, spices, and spirituous liquors, should be studiously forbidden. The affected negro can do little work, but he should not be wholly idle, and his task should be adapted to his strength; damp weather and damp situations should be avoided, as they tend to diminish the salutary diapnoe, of which we see strongly the influence in this disease.

When the eruption is completed, medicines which determine to the skin are highly proper, and the chief of these is the decoction of sarsa, and of the woods. Yet these should not be drank, it is said, in large quantities, or strongly impregnated, especially in wet weather, when their tendency is to the urinary passages rather than the skin.

The applications to the sores are chiefly mercurial, and these are said, by the European practitioners, to be successful; but the negroes themselves prepare a liniment with filings of iron moistened with the juice of lemons. In rainy seasons an anasarcous swelling of the head comes on, which, in conformity with the views mentioned, the negroes remove by shutting themselves up in a warm stove at night, and applying warm stimulating cataplasms to the part. When by the most careful attention to this plan, both dietetic and medicinal, the disease disappears, except the mother yaw, which requires only topical treatment, sea bathing completes the cure. Other remedies are indeed sometimes employed, as the sulphurated salts, antimonials, &c.; but mercurials are said rarely to succeed. Perhaps moderate doses of calomel, or the hydrargyrus muriatus, may assist the above plans; but, if any confidence can be placed in the train of symptoms above recited, which has been selected from the best authors, large doses of mercurials must be dangerous.

The disorder is not dangerous if skilfully managed, though infectious: on this account the patient must be separated from his companions, and it is supposed that the infection may be even communicated by flies.

See Edinburgh Medical Essays, vol. vi. p. 312; Mungo Park's Travels in the Interior of Africa; Hunter on the Diseases of the Army in Jamaica; Peyrilhe Precis theorique et pratique sur la Pian, &c.; Hill's Surgical Essays; Schilling Diatribe de Morbo in Europa pæne ignoto; Hillary on the Diseases of Barbadoes; Bayon Memoires, ii.; Adams on Morbid Poisons; Ludford's Inaugural Dissertation.

YE'RBA DE CA'MINI—DE PALOS. See CASSINE.

YOI'DES OS. See HYOIDES OS.

YPSILOGLO'SSI, (from ὑχιλοειδης, *the ypsiloid bone*, and γλωσσα, *the tongue*). See HYOGLOSSUS.

YPSI'LOIDES, (from the Greek letter υ, *upsilon*, and ειδος, *likeness*). See HYOIDES OS.

YU'CCA. INDIAN BREAD (see CASSADA), is a plant with a thick tuberous root, and leaves resembling those of the aloe, growing in America. See Raii Historia.

Z.

Z Z. See MYRRHA and ZINZIBER.

ZA'ARA. See PERVIGILUM, SOMNUS, and VIGILANTIA.

ZACI'NTHA. *Cichoreum, verrucarum, lapsana zacintha* Lin. Sp. Pl. 1141; WART SUCCORY, grows in Italy; and is noted for its power of destroying warts.

ZA'FFARAN, (from *zafran* of Zafar, *yellow*). See CROCUS.

ZA'FFER. See COBALTUM.

ZA'GU. See PALMA JAPONICA.

ZAIL. See BOROZAIL.

ZANTHO'XYLON, (ξανθος, *yellow*, and ξυλον, *lignum*). PRICKLY YELLOW WOOD, or YELLOW HERCULES. *Zanthoxylum clava herculis* Lin. Sp. Pl. 1455. The powder from the bark of the root of the tree is recommended as an useful antiseptic in ill-conditioned ulcers. Chamberlain in the Memoirs of the Medical Society, v. 40.

ZA'LAPA. See JALAP.

ZARZAPARI'LLA. See SARSAPARILLA.

ZARNICH. See ARSENICUM ALBUM.

ZA'RUTHAN. See CANCER.

ZAZARHE'NDI HE'RBA. See ORIGANUM.

ZE'A, (ζαω, *to live*; from the nourishment it affords). See ADOR.

ZEDOA'RIA, *(vox sinensis)*; *gedwar, malankua, colchicum Zeylanicum, haronkaha, arnabo, zedoary, Kampferia rotunda* Lin. Sp. Pl. 3. It is brought chiefly from Bengal, in oblong pieces, about the thickness of a little finger, and two or three inches long; or in roundish ones, called *zerumbeth*, about an inch in diameter, of an ash colour on the outside, and white within. The long and the round are the roots of the same plant, the body of which is round, and the protuberances long.

The best is dense, solid, of a fine taste and smell, bitterish, moderately acrid, emitting an aromatic flavour in powdering or chewing, neither wrinkled nor perforated.

It impregnates water with its smell and a light bitterish taste. The spirituous tincture is weaker in smell than the watery, but stronger to the taste: distilled with water, it yields a ponderous, hot, and pungent essential oil.

This root is a warm stomachic; and its spirituous extract is the best preparation. In colics, attended with a diarrhœa and pain in the intestines, ℈i. of the powder, taken three times a day, often relieves. In flatulences it is very useful if joined with opium; and in general the dose is from gr. v. to ʒss. Notwithstanding the extravagant commendations of Cartheuser, who considers it as a general remedy for the greater number of chronic complaints, Cullen allows it only the virtue it may possess as containing camphire. It has, however, still a place in the confectio aromatica of the London Pharmacopœia. See Cullen's and Lewis's Materia Medica.

ZE'RNA. An ulcerated impetigo, sometimes synonymous with lepra. See LICHEN.

ZE'RTA. See CAPITO ANDROMACHUS.

ZERU'MBETH. (See ZEDOARIA.). A species of ginger also, *amomum zerumbet* Lin. Sp. Pl. 1; BROAD-LEAVED WILD GINGER.

ZI'BACH. QUICKSILVER. See ARGENT. VIVUM.

ZIBE'THUM, (from the Arabic zobeth). CIVET, *civeta algatia*, is an unctuous odoriferous substance nearly of the consistence of honey or butter, of a whitish, yellowish, brownish, or blackish colour, brought from the Brazils, the coast of Guinea, and the East-Indies. It is a secreted fluid preserved in its peculiar follicle, in the lower part of the belly of the *viverra zibetha* of Linnæus. Its smell is fragrant, and disagreeably strong, unless diluted. It hath an unctuous and subacrid taste, not dissolving in spirit or water, but uniting with oils both expressed and distilled, and with animal fats. Water by distillation is impregnated with its odour, and spirit by digestion. Rubbed with mucilage it mixes with water.

The black civet from India is not so good as that from America; but the latter is often adulterated. The chief use of this drug is as a perfume; it is rarely, if ever, employed for any medicinal purposes. See Neumann's Chemistry; Lewis's Materia Medica.

ZI'MENT. See CŒMENTUM CUPREUM.

ZI'NCUM, (from *zink*, Germ.) TUTENAG, SPELTER, BLENDE, BLACKJACK, and ZINC, is a semimetal, of a bluish white colour, of a high metallic lustre, somewhat brighter than lead, of considerable hardness, and so malleable as not to be broken with the hammer, though it cannot be much extended. Its structure is foliated with sharp points, which renders it harsh to the touch.

Zinc crackles during bending, apparently from the adhesion of the sharp points, and, in small pieces, easily breaks; but large masses are not divided without iron wedges. Under rollers, with care it may be extended into plates of considerable thinness and elasticity, or drawn into wire. Of this a wire 0.10 of an inch in diameter will support twenty-six pounds. If hammered at a temperature of 300°, its malleability is increased, and it will bear much bending: its fracture is thin, fibrous, and steel grained, and it may be drawn into wire $\frac{1}{150}$ of an inch in thickness, nearly as tenacious as that of silver. Its specific gravity is somewhat below 7.0; but by hammering is increased to 7.2. Held in a warm hand, it exhales a metallic odour, resembling that of iron; in a temperature of 400° becomes brittle, and capable of being powdered; at about 70° melts, and, in a full red heat, is volatilised. Its crystals are tetrahedral, or compressed hexaedral, prisms.

In the air it is soon covered by a grey oxide, which prevents any farther oxidation; but when melted this oxide covers the metal as with a pellicle, which is renewed when scraped off. It is a criterion of this oxide, and of the sublimed flowers of zinc, to turn yellow by heat. In a red heat its colour is a greenish yellow; in a white it vitrifies, forming a yellow glass. Zinc takes fire at the lowest period of ignition, and sublimes in a yellowish white powder, called flowers of zinc, nihil album, pompholyx, philosophical wool, &c. These, when first prepared, are phosphoric; a quality which they communicate to water, passing through them, giving it superficially a dazzling white, and internally a sky blue colour. The quantity of oxygen in the oxides of zinc probably varies; at least they have been very differently estimated. It does not exceed apparently 0.20.

Pulverised zinc, if moistened, decomposes the water. If filings of zinc are immersed in very pure, strong, liquid ammonia, a combination takes place, called ammoniuret of zinc, with the separation of an ammoniacal alliaceous gas. The solution, after filtration, is yellow, and the new salt, by evaporation, concretes into feathered crystals. As may be expected, it is decomposed by acids, and, with tincture of galls, the precipitate is grey. The pure fixed alkalis act also on zinc; but do not dissolve the oxide, though they dissolve that which is precipitated from the salts of zinc.

Of the sulphat of zinc we have already spoken. (See VITRIOLUM.) The nitrous and muriatic acids act violently on it, and the oximuriatic acid inflames it. The muriat of zinc will not crystalise, and it sublimes in the form of butter, from whence it is sometimes denominated. All the other acids dissolve zinc; but the acetat has only been employed in medicine.

The *calcined zinc*, formerly *flores zinci*, are made by melting eight ounces of the metal in an ignited large and deep crucible, placed declining or half upright, and covered with another crucible, so that the air may have free access to the burning zinc. The calx, as soon as it appears, must be taken out, and its white and lighter part separated by sifting. The operation must be repeated till all the zinc is oxidated.

Vitriolated zinc is purified by dissolving a pound of white vitriol in three pints of boiling distilled water, adding a dram of vitriolic acid. The solution is filtered, evaporated, and crystalised in the usual way.

The preparations of zinc are employed in external applications, as ophthalmias, and as astringents; an effect which they produce, if the zinc is finely levigated, without irritation. Taken internally they prove emetic. The following ointment is used for the same purposes as that called Pellier's ointment. See OPHTHALMIA. ℞ Zinci usti ʒi. unguenti ceræ albæ ʒvi. m. See VITRIOLUM ALBUM.

The flowers of zinc were first used as an internal tonic medicine by Glauber, and externally in cancerous and other malignant ulcers. In this he has been followed by Theden, Justamond, Martini, Crell, and Brown (Medical Communications). In an ointment they have been used in excoriations, particularly of the nipples and lips. Internally they were little known till Gaubius gave an account of their virtues in his Adversaria, where he showed that they constituted the empyrical remedy of Ludeman, called the *luna fixata*. They have been much employed in convulsive and spasmodic diseases, and sometimes with good effects. Even obstinate epilepsies have been rendered much less violent by their use, and very numerous are the authorities for their efficacy in every species of convulsion; but, like all other medicines in such diseases, their effects are unequal, and the benefit often temporary only. Almost equally numerous complaints are made of their inefficacy; among the Danes, by Tode and De Meza; in this country by Bland and Wilson (Medical Commentaries); among the French by Lassone; the Swiss by Odier; the Italians by Carminati; the Germans by Selle, Bloch, Pelison, Hartman, and Richter; a variety of opinions which can only be reconciled by reflecting on the various and opposite causes from which such diseases proceed. In fact, however, it was at first too highly extolled, and in the numerous instances we have seen that a medicine is rejected because its efficacy is not so great as its first advocates boasted.

When the flowers are genuine, a grain or two generally at first excite a nausea or sickness; but by degrees a considerable dose may be taken with little or no sensible effect. As they are liable to be adulterated, it may be proper to mention, as tests of their purity, that they make no effervescence with acids; and that when exposed to a strong heat, they become yellow; but, on cooling, white again.

The *calx zinci* of old authors does not differ from the flores zinci; and the *calx zinci precipitata*, precipitated from a solution of white vitriol by an alkali, was in the time of Neumann celebrated as a remedy for epilepsy. The *tinctura zincea* of Martini is a solution of the acetat of zinc in the sweet spirit of ammonia, and said also to be useful in the same disease.

Nihilum album is a common calx of zinc, and used, like it, in inflammations, excoriations, &c. With axunge it was formerly styled *unguentum diapompholygos*, and *unguentum nihili*. The *spodium* of Galen and Dioscorides is a more impure calx: the former is collected by sublimation; the latter from the ashes.

Tutia, nihil griseum, and *cadmia botryites* is a calx of zinc, with a considerable mixture of copper. It is freed from these, and then styled *tutia præparata*. With axunge it forms an ointment, *unguentum tutiæ*. The *lapis calaminaris* is the ore of zinc, and the *cadmia fornacum* not essentially different.

By a mixture of zinc with copper, in different pro-

portions, are made the compound or artificial metals, called brass and prince's metal. See Neumann's Chemical Works; Lewis's Materia Medica, edit. 6th.

ZI'NCUM CALCINA'TUM. FLO'RES ZI'NCI. See ZINCUM.

ZI'NCUM VITRIOLA'TUM. See VITRIOLUM ALBUM.

ZI'NGI. See ANISUM INDICUM.

ZINGI'BER, (Indian). GINGER. The character for this is Z z. *Zinziber, gingihil fœmina, chilli Indiæ orientalis, iris latifolia tuberosa, mangaratia, amomum zingiber* Lin. Sp. Pl. 1. COMMON or NARROW-LEAVED GINGER, is the root of a reed-like plant, growing spontaneously in both the Indies, in China, &c. It is brought to us in knotty, branched, flattish pieces, freed from the outer bark, of a pale colour and fibrous texture, and distinguished into white and brown. The former is the root cleaned and dried; the latter is scalded, more shrivelled, and less aromatic. That which is the least fibrous is reckoned the best.

Ginger is warm and aromatic, but its stimulus is more local than might be expected from its sensible qualities. It yields all its virtues to rectified spirit of wine, and the greater part of them to water. In distillation water conveys its whole flavour, but spirit leaves nearly the whole behind. It is used in cold and flatulent disorders, particularly of the stomach, with advantage; in torpid and phlegmatic constitutions, to excite brisker vascular action; and to correct the griping quality of purgative medicines; for which purpose its effects are more durable than those of pepper. The London College order syrup of ginger, to be made by macerating four ounces of bruised ginger for four hours in three pints of boiling water, strained and made into syrup with the addition of clarified sugar. Ph. Lond. 1788. See Lewis's Materia Medica.

ZI'NGEN. See GENSING.

ZI'ZIPHUS, ZI'ZIPHA. See JUJUBA, AZADARACH, and LACCA.

ZODOA'RIA CA'NDIDA. See AZEDARACH.

ZODOA'RIÆ SEM. See SANTONICUM.

ZO'NA, (from ζωννυμι, *to bind*), *cinzilla Paracelsi*. A kind of herpes, which encircles the body, like a girdle. See ERYSIPELAS.

ZOO-PHYTON, (from ζωον, *animal*, and φυλον, *planta*). A ZOOPHYTE, or PLANT-ANIMAL, supposed to be an intermediate body between plants and animals, but now known to be a congeries of the habitations of animals.

ZOOLOGIA, (from ζωον, and λογοσ). The natural history of animals.

ZOO'NOMIA, (from ζωον, and νομος). The laws of animal life: the title of Dr. Darwin's works, on principles not very different from the BRUNONIAN SYSTEM, q. v.

ZOOTO'MIA, (from ζωον, *an animal*, and τεμνω, *to cut*). The dissection of animals.

ZO'STER ERYSI'PELAS, (from ζωννυμι, *to gird*). See ERYSIPELAS.

ZO'STER HE'RPES. See ERYSIPELAS PHLYCTÆNODES, and HERPES.

ZU'CHAR, (from the Arabic term *sachar*). See SACCHARUM.

ZYGO'MA, (from ζυγος, *jugum, a yoke*); a bone of the cheek, forming with the other bones a bridge like a yoke, under which the tendon of the temporal muscle passes.

ZYGOMA'TICA O'SSA, (from ζυγος, *jugum, a yoke*). See MALARUM OSSA.

ZYGOMA'TICÆ SUTU'RÆ, the sutures uniting the processes of the temporal and cheek bones.

ZYGOMA'TICUS MUSCULUS, *zygomaticus major*, of Albinus and Winslow, *distortor oris*, arises fleshy from the zygomatic process of the cheek-bone, and is inserted into the corner of the mouth, which this muscle draws outwards and upwards.

ZYGOMA'TICUS PROCE'SSUS. From the anterior middle part of the temporal bone a process arises and joins another from the cheek-bone. Together they form an arch. See TEMPORUM OSSA, and ZYGOMA.

ZYTHOGA'LA, a posset drink made with beer and milk often recommended by Sydenham. We cannot conclude with a more respected name—MANEANT SEMPER HONOS NOMENQUE SUUM LAUDESQUE ——.

CURÆ POSTERIORES.

ABDOMEN.—Page 2, col. 2, line 55; "*useful in the colic are without effect in this complaint.*"—Blows on the abdomen are often dangerous, though no wound be inflicted, and they seem to act by destroying irritability of the stomach, as they are more fatal, the nearer the shock is to that organ; for immediate percussion is not always necessary. Fluids of different kinds also are often effused from a rupture of different viscera, or from the bursting of an abscess in any contiguous part. Purulent matter is most frequently found in the interstices of the muscles, or on the peritonæum. David (Memoires pour le Prix, vol. x.) describes the operation for an abdominal empyema, and Fabricius drew from the abdomen eleven pints of purulent matter. Blood, bile, urine, fæces from the colon (Histoire de la Societé de Medecine, an. 1786), have been found in the cavity of the peritonæum, from ruptures of the containing receptacles of these fluids, and such accidents are usually soon fatal.

Tumours of the abdomen are frequent from schirri of the different viscera; from cartilaginous tumours, and steatoms; from water or flatus. After intermittents they were formerly frequent, in part from their continuance, as they were supposed to be salutary, and little attended to, in part perhaps from the abuse of the Peruvian bark. The tumours from flatus appear sometimes to be general, when only a small portion of the intestine is distended; but in that case the distension is so considerable as to occupy the whole abdomen. Steatoms are often in the mesentery, sometimes in the omentum; and bodies of an anomalous nature are found in different parts of the cavity. There is a curious story of a woman at Strasburg who could produce, at pleasure, a considerable distension of the abdomen, which she conducted with an ingenuity and address not inferior to the famous rabbit women. Tumours sometimes appear preternatural, from some change in the situation of the viscera; and there is a very useful dissertation on this subject in Haller's Practical Collection, iv. 118, by Troschel, originally published at Frankfort.

The diseases of the ovaria often render this part so large as to occupy the whole abdomen, and the real complaint can only be distinguished by the patient's report of the original situation, and the progressive increase of the swelling. It sometimes contains a fœtus, occasionally irregular ossifications, masses of hair, hydatids, and a watery fluid. Every organised substance, contained in an enlarged ovarium, is probably a part of an imperfect conception. The kidneys (Martinau in the Medical Commentaries), and the urinary bladder (Morgagni de Sedibus, xxxix. 33), sometimes form considerable tumours. See SPLENALGIA, HEPTALGIA, SCHIRRUS, VESICA. See Pemberton on the Diseases of the Abdominal Viscera.

ABORTUS.—Page 5, col. 1, line 10; "*stated time of the woman's pregnancy.*"—Violent exertions in lifting weights, and every action of the abdominal viscera, even the straining to void the fæces and urine have induced abortion. Every thing which checks the circulation suddenly, or produces faintness, has a similar effect. It is consequently occasioned by passion, terror, anxiety, sorrow, and even immoderate joy; by unpleasing smells, as rotten eggs, or carbonic acid air, by harsh sounds, &c. Venereal complaints often induce abortion; and excess of venery, small-pox, malignant fevers, a blow on the abdomen, a shock by a fall, tight stays, and even the bite of a viper, have had a similar effect.

ABROTANUM.—Page 8, col. 1, line 38; "*Santolina Chamæ Cyparissus L. 1179, Fol.*"—The female southernwood is bushy, hoary, with oblong, slender leaves, composed each of four rows of little yellow knobs, set along a middle rib; naked, discous, yellow flowers, standing solitary on the tops of the stalks; a native of the southern parts of Europe, evergreen, flowering from June till the winter approaches.

The male of a shrubby plant, with woody brittle branches, numerous greyish green leaves, divided into slender segments; small, yellow, naked, discous flowers, hanging downwards in clusters; a native of open mountainous districts of warm climates, flowering in July and August. In this country it is raised from cuttings, and seldom produces seed: the leaves fall off in winter.

Both are used in fomentations, as discutients and antiseptics; in liniments and ointments for cutaneous eruptions and incipient baldness. Heister uses a decoction in salt water as an antiseptic. Each is a warm, perhaps an useful, stimulant, though seldom employed internally. They may be probably carminative; but have little pretensions to the virtues so liberally assigned them, of relieving obstructions, and restoring the menstrual discharge.

ABSCESSUS.—Page 8, col. 2, line 29; "*abscess is the*

consequence of inflammation."—But, though abscesses are the consequence of inflammation, yet there are many remote causes which contribute to it. A frequent one is what authors have styled a metastasis, and diseases in situations the most remote, and circumstances the most improbable, have been relieved by the sudden formation of an abscess, with little previous inflammation, while, on the other hand, purulent matter has been as suddenly taken up, and thrown out by the urine or some secretory organ. Abscesses also often occur with very indistinct and obscure inflammation, as we have found from falls and shocks. These occur in internal organs, where the circulation is languid, particularly in the liver. Other languid inflammations, with little pain, are those of the joints, which depend on a scrofulous diathesis.

One frequent cause of abscesses are foreign bodies introduced into the system, and afterwards deposited in the cellular substance; or passing under the skin, and appearing in distant organs. Such bodies are sometimes also formed by disease. Of the first kind, more strictly, are the causes of exanthemata, and if the tales of living animals found in abscesses be true, their ova must have been taken in, and again separated. This at least must be the case with the fasciola which sometimes infests the liver, and occasions little abscesses. Hard substances swallowed have forced their way through the skin and formed abscesses in the umbilicus, the groin, or the epigastrium. Needles swallowed, or penetrating through the glutæi, have been taken out of an abscess at the top of the shoulder and even a beard of wheat has passed from the stomach to the side of the spine (Watheri), and to the right hypochondrium, (Haller Dissertationes Chirurgicæ, v. 127). It is not difficult to explain the cause of their progress, for, since the resistance at the point is less than at the extremity, every motion assists rather the other progressive than the retrograde course.

Bodies generated in the system from disease are chiefly calculi, which form abscesses in the side when biliary; in the lumbar region when renal; in the perinæum or rectum when vesical; and in the joints when arthritic. Numerous instances of each kind might be adduced from respectable authorities.

In general, abscesses proceed from some disturbance of the balance of the circulation; and, therefore, to avoid them, rest, a gentle diaphoresis, and particularly a discharge from those organs where the abscess is threatened, with every remedy which will prevent too great excitement of the arterial system, will be highly useful. Emetics which assist absorption often prevent the formation of abscesses, and the cooling laxatives repress with certain effect the febrile tendency.

To the references in the text the following may be added: Baglivi Praxis Medica, i 9; Stahl de Abscessu et Furunculo et Ejusdem de αποςτασεος and υπος-τηματος Hippocratis Differentia; Memoires de l'Academie de Chirurgerie, i. 118; Petit Traite des Maladies Chirurgicales, a posthumous work.

ABSINTHIUM.—Page 17, col. 2, line 34; "*often substituted for it.*"—Wormwood is a perennial plant, with hoary divided leaves, firm woody stalks, which die in winter, small yellow, pendent, discous flowers. The common wormwood grows in hedges, hath large leaves, divided by deeply indented segments, of a light green above, and whiter underneath; flowers in June and July, and dies almost wholly to the ground in winter. The leaves of the Roman wormwood are numerous, finely divided, dark coloured, and hoary underneath. The stalks are purplish, and all the parts comparatively small. The leaves of the sea wormwood are also finely divided, and hoary all over.

The preparations of wormwood were, by accident, omitted. These are a tincture, an extract, an essential oil, a conserve, and a salt. The *tincture of wormwood* is retained only in the Edinburgh Pharmacopœia, and made by macerating four ounces of the dry flowering tops of wormwood in a quart of rectified spirits for two days. After pressing out the tincture, it is poured on two ounces more of wormwood and macerated for four days, then filtered.

The *extract* is made from a strong aqueous decoction, evaporated in the usual way, and it contains all the bitter of the herb, without its ill flavour, which resides in the oil, so that this may be separated before the decoction is inspissated. A spirituous extract contains the flavour, as well as the bitter.

The *oil* comes over with the distilled water, and may be easily separated. Ten pounds of the herb will, in favourable seasons, yield two ounces of oil. In rainy seasons, and moist situations, the oil is most copious; in dry ones most resinous.

The conserve is made from the tender tops of the Roman wormwood, with triple the weight of lump sugar. The salt is made by burning the dry herb to ashes in a close vessel; but the salt of tartar is usually substituted for it.

ACEPHALOS.—Page 22, col 1, line 3; "*modern collections contain similar instances.*"—See NERVUS, and the distinction between the cerebral and the ganglionic systems.

ACHOR.—Page 26, col. 1, line 8; "*has appeared more effectual than the oil-skin cap.*"—When the roots of the hair are not affected, the disease is more certainly a general one, and various complaints have arisen from its repulsion, or drying it by astringents. It has appeared in numerous instances almost critical, so that in Baldinger's collection there is a proposition to communicate it by inoculation. Stoll (Prælectiones, p. 48) and Morgagni (de Sedibus, &c. lv. 3), record many dangerous diseases arising from its retrocession, and epilepsy, apoplexy, and even death, have been said to follow rapidly.

The remedies, in such cases, have been antimony, sulphur, the viola tricolor (Strack de Crusta lactea Infantum), the seeds of the lycopodium, hemlock (Fischer de Morbis Cutaneis, sp. 1), the bardana, and, above all, the soda. But, in general, the cooling saline purgatives, with a moderate exercise in the open air, will complete the cure. See also TINEA CAPITIS.

ACOUSTICA TUBA, in common language, the *ear-trumpet*, is an instrument contrived to augment the sounds, so that the impression on the ear may be more considerable, when the powers of the organ are diminished. The speaking trumpet is a similar instrument, by increasing the intensity of sounds to

render them audible at a greater distance. We find (see SONUS) that sound is propagated in straight lines, so that unless the acoustic tube is nearly straight, sounds will be lost, or taking a new direction will be suffocated. If, however, it is only bent in the segment of a very large circle, which is often done to render its use more convenient, the distinctness is not greatly lessened: it is always, however, more advantageous to preserve the straight line. The aperture is wide at the extremity to take in a larger volume of sound, the whole of which is conveyed with increased force, in proportion to the diminution of the diameter to the ear. The instrument itself is made of some sonorous metal, that no portion of the sound may be suffocated or lost.

ACUMEN. A sharp point; an appellation in Daventer's Midwifery of the protuberances of the ossa ischii. The coccyx he also calls *acumen ossis sacri.*

ADHESIVUM (*emplastrum*). Adhesive plaster is of the greatest importance to confine dressings, to preserve the union of lips of wounds, and to bring the edges of ulcers nearer together. (See VULNUS and ULCUS.) It is formed by adding five or six parts of resin to the litharge plaster; but, for less important wounds, an elegant adhesive plaster is prepared by spreading isinglass dissolved in brandy, generally with the addition of gum or flowers of Benjamin, on black silk, styled *court plaister.*

ADIANTHUM.—Page 34, col. 1, line 26; "*expressive of a capillary herb.*"—Maidenhair is an evergreen, low plant, with slender, smooth, shining, blackish stalks, without any manifest flower. The seeds resemble fine dust, lying in roundish specks about the edges of the backs of the leaves, which curl around to protect them. The first species mentioned is the true maidenhair, *adianthum foliis coriandri*; the second is the Canadian, *adiantum fruticosum Brazilianum, avenqua, adiantum Americanum*, cultivated in our gardens, the strongest and most agreeable of all the species.

The *a. nigrum, onopteris mas, adiantum foliis longioribus, filicula, caliphyllum, asplenium trichomanes* Lin. Sp. Pl. 1540, grows wild on old walls and shady places, and is in taste roughish and mucilaginous, though with but little flavour. Two other capillary plants are mentioned under this title; the *a. album* (*osmunda crispa* Lin. Sp. Pl. 1522) and the *a. aureum* (*mnium polytrichoides* Lin. Sp. Pl. 1570); but they merit no particular notice.

ÆGOPODIUM.—Page 35, col. 2, line 46; "*is tender and esculent*"—the *æ. podagraria* Lin. Sp. Pl. 379.

ÆORA.—Page 37, col. 1, line 47; "*assisted, perhaps, by the nausea.*"—In these passive exercises, the constant renewal of the fresh air probably assists the discharge of that insensible perspiration, which we have distinguished by the appellation of diapnoe, and which, in every circumstance, is most essentially beneficial. See DIAPHORETICA.

ÆRIS.—Page 42, col. 1, line 3; "*the best detergent of foul ulcers.*"—See CUPRUM, ÆRUGO, and ÆS. The reference to the dictionary of chemistry, retained by accident, has no object. It was meant for Mr. Nicholson's, now wholly superseded by Dr. Aikin's publication, which appeared only near the conclusion of the present work.

ÆSTUARIUM—Page 43, col. 2, line 50; "*machines for conveying heat to rooms.*"—A vapour bath, designed according to its construction either to produce a partial or a general sweat.

ÆTHIOPS JOVIALIS.—Page 46, col. 1, line 61.—Read as tin *often* acts mechanically *only*. See STANNUM.

Page 55, col. 1, line 4.—For QUIESCENT and DWELLENT read DIVELLENT.

Page 56, col. 1, line 28.—For AMANTIA read AMANITA.

AGERATUM.—Page 56, col. 2, line 37; "*as a remedy for palsy.*"—The maudlin tansey is a perennial, slender plant, with indented, narrow leaves, and yellow, naked, discous flowers, set in umbels, on the tops of stalks. It is a native of the southern parts of Europe, cultivated in our gardens, flowering in July and August.

AGITATION.—Page 57, col. 1, line 43; "*spasmodic attacks.*"—It has also been recommended as a remedy, and older authors have gravely directed us to agitate a hectic patient to break the abscess. Modern practitioners have recommended agitation to *rouse* a person when torpid, and often dying. It *was* not an uncommon practice with the followers of Brown; and many candles have been brought round the bed, loud noises made, the patient has been forcibly taken from bed and put into a carriage to rouse, when the sleep of *death* was oppressing him. It was the consequence of that most pernicious principle that life was a forced state. We have said that it *was* not an uncommon practice. We fear, indeed we *know*, that with all its inhumanity and absurdity, it is not yet wholly disused.

AGUE CAKE.—Page 58, col. 2, line 53; "*bark has been generally employed.*"—Farther examination has led to a somewhat different conclusion from that in the text, which is the common opinion of authors; and there is greater reason to suppose that these tumours arise from the too early and indiscriminate use of the bark before proper evacuations have been employed. See FEBRIS.

ALABANDINUS.—Page 59, col. 2, line 64; "*Probably black-lead.*"—This account is full of error. The alabandine of Aldrovandus, mentioned by Wallerius, i. 252—*i.*, is the quartz hyalin rouge, noiratre of Haüy, a precious stone of a deep red, properly classed between the ruby and the hyacinth. Pliny mentions a black stone under this title, xxxvi. 8.; but this was apparently a garnet.

ALÆ VESPERTILIONUM. The broad ligaments of the uterus, supposed to resemble a bat's wings.

ALEDO.—Page 60, line 12, col. 1, for (from ALBIS) read (from ALBUS).

ALBI. SUBLIMATE, &c.—Page 60, col. 2, line 21. —read MERCURIUS CORROSIVUS ALBUS.

ALBUGO. M. Pellier's ointment consists of the red nitrated mercury, and prepared calaminaris, of each a dram and a half; levigated litharge, a dram; prepared tutty, half a dram; red sulphurated mercury, a scruple; balsam of Peru, fifteen drops; made into an ointment with two ounces of axunge. The unguentum citrinum, and the unguentum cerussæ acetatæ, in the proportion of eight to one, or sometimes a larger one, will often succeed, to which opium may be added. A dram of the red nitrated mercury, with twelve grains of powdered opium, made into an ointment, with six drams of axunge and two of wax, is often highly useful. The great object of all the forms is to combine the stimulant with the sedative applications, so as gently to excite the action of the vessels without too greatly irritating them.

ALCHEMILLA VULGARIS, Lin. Sp. Pl. 178. It flowers from May to August, and the leaves seem as if folded together, from whence its name is derived.

ALCYONIUM.—Page 67, col. 1, line 42; "*used to remove spots on the skin.*"—The opinion of this substance being the dried froth of the sea is truly ridiculous. It is, as the English name imports, a kind of sponge, the residence of a polypus, or of polypi. The internal part is fibrous, rough, hard, and almost horny, encrusted with a fleshy covering, which becomes firm, coriaceous, and almost earthy, when dried pierced with innumerable holes or polypiferous cells. In its freshest state the alcyonium gives no marks of sensibility, but is apparently composed of longitudinal fibres, in such as resemble ramified stalks; and diverging from the centre to the circumference in those whose form is more nearly globular. The animal, when it appears beyond the holes, appears to be cylindrical, terminated above by ciliated tentacula, which form a star round an opening in the centre. These organs do not vary in the same species, and are apparently destined to seize their prey, and convey it to the mouth. One species, the sea-fig, is delineated by Ellis, tab. 17, fig. 6; another, the devil's hand, by Seba, vol. iii. tab. 97, fig. 3. The alcyons are sometimes found in a fossil state.

ALGA.—Page 69, col. 1, line 14; "*a species of alga is gathered and dried to feed oxen.*"—Algæ are employed, when bruised, as applications to scrofulous swellings, and are often rubbed on the hip-joint in the morbus coxarius, white swellings of the knee, and those diseases of the joints which are apparently connected with scrofula. They are supposed to act not only from their stimulus, but the supposed solvent power of the sea-salt (see SCROFULA); and whatever be the mode of their operation, their good effects are indisputable.

ALKEKENGI.—Page 78, col. 1, line 10; "*physalis alkekengi* Lin. Sp. Pl. 262."—It is a low plant with unbranched stalks, heart-shaped acuminated leaves, standing in pairs on the joints and whitish bell-shaped flowers. The flower-cup changes to a pentagonal bladder, concealing a red fruit, like a cherry, containing under a juicy pulp many small seeds.

ALLIARIA.—Page 79, col. 1, line 12; "*erysimum alliaria* Lin. Sp. Pl 922."—The leaves of the alliaria are roundish heart-shaped, and slightly indented; the stalks upright and firm, on the tops of which, and in the bosoms of the leaves, clusters of white flowers proceed, followed by oblong bivalvous pods full of black seeds. It is biennial, grows in shady wastes, and flowers in May.

ALLIUM.—Page 79, col. 1, line 36; "*it flowers in July.*"—Garlic hath long grass-like leaves, a single strait hollow stalk, bearing on the top a cluster of small white flowers, each of which is followed by a fruit about the size of a pea, full of dark-coloured, roundish seeds. The roots are bulbous, of an irregular, roundish shape, fibrous at the bottom: the smaller bulbs are inclosed in a common coat, and styled *cloves*. The root not divided into cloves is called molyza and diaitides; but these are neither species of allium, nor medicinal.

The root of the garlic is full of a limpid fluid, of which it yields one fourth of its weight by expression; and, according to some authors, it loses half its weight, occasionally two-thirds, on drying, though scarcely any of its smell or taste. Neumann found that nine hundred and sixty parts yielded three hundred and eighty to water, the remainder twenty-seven to spirit. Inversely the alcoholic extract contained a hundred and twenty-three, and the watery a hundred and sixty-two parts. The former was unctuous and ropy. Mixed with oils, and applied externally, it resolves indolent tumours, is useful in stiff joints, and applied to the pubes, in the form of a cataplasm, sometimes relieves suppression of urine.

ALNUS.—Page 80, col. 1, line 58; "*Avnus.*"—The common elder is tall and coniferous, grows in watery places with little branches: its leaves are clammy, the bark of a dark brown, and the wood reddish.

ALOIDES, (from αλοη, and ειδος). *Stratiotes aloides* Lin. Sp. Pl 754. WATER-ALOES, FRESH-WATER SOLDIER, *aloe palustris, aizoon militaris aizoides, stratiotes*. It grows in water, or in watery places; the leaves, which resemble those of the aloes, are always above water. It is found in England, and flowers in July and August. It was formerly used as an emmenagogue; but the roots, inclosed in phials of water, by which they are magnified, are shown by worm doctors as vermes discharged from the intestines.

ALOPECIA.—Page 82, col. 1, line 60; "*gentle stimulants should be continued.*"—Some of the phenomena of this disease show that the state of the hair has some connection with that of the genital system. It is remarked that eunuchs are never bald; women, and children before puberty, very rarely. Alopecia, a name apparently derived from the fable of its being produced by the urine of a fox, is owing, it is said, often to venereal excesses, to the intemperate use of tobacco, to lues, and exposure to the sun. It is more certainly owing to copious perspiration from the head, and violent headachs, sometimes to apprehension or fright. Topical stimulants,

and some of the most disgusting kind, have been recommended for its relief. The myrrh, leaves of box, the oil of paper, the fat of a serpent, tar, white hellebore, Hungary water, and oil, with rum, are frequently employed, but seldom with any good effect. Numerous washes and liniments for this purpose are supplied by the perfumers.

ALTHÆA.—Page 83, col. 2, line 12; "*Columnaceæ.*"—Althea is a soft hoary plant, with oblong, undivided leaves and pale, flesh-coloured, monopetalous flowers, cut deeply in five sections, set in a double cup, the outermost of which is divided into nine parts, the innermost into five. The fruit consists of numerous capsules, set in the form of a flat disk, with each containing a single seed; the roots are long, slender, and fibrous, the fibres yellowish without, and white within. It is perennial, grows wild in moist places, and some of the more beautiful varieties are cultivated in gardens.

The *althæa of Theophrastus, althæa indica, abiscus Theophrasti, abutilon*; the YELLOW MARSHMALLOW, *sida abutilon* Lin. Sp. Pl. 963, does not differ from the officinal althæa.

ALSTROMERIA SALSILLA, Linnæi Sp. Pl. 462. The root is considered as a diaphoretic, and inferior to the sarsa.

ALTUS, high, used in medical authors, to express superior degrees, as *altus sopor*, the sleep of lithargic persons; *alta salus*: we preserve its force in the last by styling it *high health*.

ALUMINE. Clay is scarcely to be considered as a medicinal substance; but the term is introduced merely to suggest whether it may not be useful as a demulcent. The boles formerly employed for this purpose are almost wholly of the nature of alumine.

ALUMINOSÆ.—Page 85, col. 1, line 41; "*with alum would induce us to conclude.*"—The only mineral water of this kind which we recollect is that of Somersham, which contains also iron and selenite, probably sea-salt.

AMARA.—Page 88, col. 2, line 4; "*reside in the greater number.*"—Bitters, though not strictly lithontriptic, are highly useful in calculous cases, probably, as we shall find, from the effects on the stomach; nor is the virtue confined to the uva ursi; that they injure the sight may be attributed to their narcotic power, if the fact be admitted.

Bitters are distinguished into the amara simplicia, calida, and narcotica. The simple bitters are the gentian, the camomile flowers, the quassia, the columba, the aloes. The amara calida are those which contain some aroma; and the narcotica, the bitters which more decidedly combine a narcotic principle. We mention this particularly, as we perceive some confusion to have crept into this part of the list of the materia medica. The limits between the first and last kind are not easily fixed, and the narcotic power seems to differ only in degree. Yet if the bitters here mentioned are separated from the amara calida and narcotica, no material error can ensue.

AMAUROSIS.—Page 88, col. 1, line 61; "*species of this complaint.*"—It is of consequence to point out more distinctly that the pupil is not always dilated and immoveable. Numerous are the observations by Plenciz, Caldani, Richter, Hey, De Haen, &c. where it was either contracted, or at least affected by a strong light. It is sometimes also pale and cloudy; but in these cases a cataract seems coming on; indeed, a cataract often supervenes, and in the latter case it is always of importance to ascertain whether amaurosis has not preceded. Among the causes which we have omitted, or at least not mentioned with sufficient distinctness, are contusions and concussions of the brain, in some cases from a leaden bullet passing near the head. Compression, when a cause of amaurosis, has arisen from steatoms in the cavity of the cranium, from accumulations of blood, serum, or purulent matter, from an excrescence in the thalamus of the optic nerve on that side (Medical Communications, i. 4), from a greyish substance pressing on it (De Haen Ratio Medendi, vi. 271), from a dissolution of the corpora striata (Petit), from a wasting, and various other diseases, of the optic nerve (Morgagni de Sedibus, &c. ix. 20): in some instances the optic nerve was become of a bony hardness (Haller Pathologia Obs. 65; Morgagni, lii. 30). Various cases are recorded of its following severe headachs, which may perhaps have been owing to some of the other causes; and the eyes, as well as the rest of the nervous system, have suffered from the poison of lead, the abuse of spirituous liquors, mercurial salivation, asthenic fevers, coup de soleil, repelled gout, suppressed hæmorrhages, and excess of venery. In some instances the vitreous humour is said to be of an unusually loose texture. The disease, according to Piso, is common among the Brazilians.

Among the remedies we have omitted several on which the foreign, and particularly the German, physicians rest with much confidence, as the hemlock, the smoke of tobacco, belladonna, the aconite, pulsatilla, iron, arnica, bark, volatiles dropped into the eye, cold topical effusions, small doses of mercury, and anthelmintics. Evacuations from the head are promoted by every means, viz. leeches, setons, blisters, the actual cautery, errhines, exciting bleeding from the nose, frictions on the eye, and rubbing the frontal nerve (Morgagni). The suppressed evacuations, whatever they may have been, are with the greatest anxiety restored.

Add to the references, Truka Historia Amauroseos; Stoll Prælectiones; Plenciz Acta et Observationes Medicæ.

AMBLYOPIA. See MYOPIA, PRESBYTIA, and OCULUS.

AMBUSTA.—Page 92, col. 1, line 28; "*known by the practitioner.*"—The principle of Mr. Kentish is, to apply a stimulus, somewhat inferior only to the cause, since, if the excess of action is at once destroyed, the irritability is also lost. On the same principle, the use of the volatile alkali, recommended by Sage, may be explained, and even of common vinegar, as well as its different forms of preserved cabbage, &c.; the spirit of wine used by Sydenham; the goose and pigeon's dung of Rulandus. Various other applications may be found in authors, as sliced potatoes, the juices of leeks, of onions,

of the sedum semper vivum, of the hypericum, of white lily roots, &c. &c ; trifling remedies, though of boasted value.

AMENTIA.—Page 92, col. 2, line 4 ; "*for performing a cure.*"—Amentia, however, sometimes arises from topical injuries and diseases of the brain or cranium. Bonetus mentions as a cause a thickness of the skull; Spon, in his Travels through Italy, speaks of the sutures separating; but this seemingly arises from hydrocephalus; for water in the head is usually enumerated among the sources of the complaint. Haller, in the Gottingen Commentaries, mentions, that in a case of this kind he found the brain of a soft pultaceous consistence, and in the Philosophical Transactions is a case where the pineal gland was apparently petrified. Morgagni mentions different cases where the brain was hard, or the cerebellum soft and flaccid. Excess of spirituous liquors or of venery, long continued cold, and the immoderate use of opium, and other narcotics, will produce the disease.

In the greater number of these cases medicine is useless; but we may expect the greatest benefit, if benefit is to be obtained, by topical evacuations from the head, warm tonics, the greatest temperance, cold bathing, and frequent exercise in the open air in proportion to the strength.

AMMITES. See BEZOAR FOSSILE.

AMMONIACUS,SAL.—Page 94, col. 1, line 44 ; "*long shining spiculæ.*"—The sal ammoniac of commerce crystalises in quadrangular prisms, terminated by short, quadrangular pyramids. When sublimed, it sometimes appears in rhomboidal crystals, and the concave surface of the cakes is occasionally covered with crystals of this form. The taste is acrid, penetrating, and urinous; it yields to a slight blow, and does not deliquesce in the air, though the salt described by Pliny and Agricola attracted humidity from the atmosphere. One part of sal ammoniac dissolves in three and a half parts of water. One hundred parts contain fifty-two of acid, forty of ammonia, and eight of water.

When purified it is somewhat less soluble in water, and it dissolves in four and a half parts of alcohol. By gentle heat it may be deprived of its water of crystalisation, and reduced to a dry powder. In that state its crystals are six or four-sided pyramids, connected so as to resemble feathers, and it contains 42.75 of acid, 25 of ammonia, and 32.25 of water.

AMMONIACI VEGETABILIS.—Page 94, col. 2, after line last, "*under* ALCALI."—The importance of this preparation is so considerable, at least its use is so frequent, that a somewhat fuller account of it is necessary. As it is usually made with distilled vinegar, its strength is unequal, and the process of crystalisation is troublesome and expensive. When it succeeds happily the crystals are long and slender, flattish, of a pearly white, melt at 70°, and sublime at 250°. A more uniform preparation is that of Mr. Lowe, who saturates four ounces of carbonat of potash with distilled vinegar, and evaporates the solution to thirty-six ounces. Two ounces of muriat of ammonia are then added, and the acetat of ammonia is separated by distillation. In the last edition of the Prussian Pharmacopœia a strong acetic acid is first prepared by dissolving acetat of soda in two parts of water, separating the acetic by the sulphuric acid, and then distilling it. The solution must be diluted, so that it shall weigh twenty-four ounces.

Mr. Lynam prepares it by filling a bottle with two-thirds of distilled vinegar, and then adding the ammonia in moderate lumps, as quick as possible. The stopper must be confined by a strong pressure, so that the carbonic acid gas may combine with the water. This preparation is probably an improvement. It is said to be much more pleasant than the common acetated ammonia, to sit more easily on the stomach, and to be slightly laxative.

According to Bergman, ammonia contains nearly half its weight of carbonic acid gas, so that in a pint of the aqua ammoniæ acetatæ, containing four drams of ammonia, there are about a hundred and eight grains, or nearly a hundred and sixty cubic inches of air.

The aquæ ammoniæ acetatæ is used in fevers, chiefly of the inflammatory kind; and in the early periods of others. It is supposed to promote perspiration, and occasionally to become diuretic. It is given in doses from one dram to six, or even an ounce. Less than six drams can do little service, and perhaps half an ounce would not be too large a dose.

AMNESIA.—Page 95, col. 1, line 10 ; "AMENTIA."—The causes and cure do not greatly differ from those of amentia. In fact, this is a loss of one intellectual function, while, in the other, more important ones are destroyed. Weak memories are strengthened by moderate exercise, and good ones are seldom overburthened. Like Milo bearing the ox from first carrying the calf, a memory, if trusted, is coextensive with the demands made on it. The artificial helps to memory often destroy it.

AMOR.—Page 95, col. 2, line 35 ; "*constitute the sad catastrophe.*"—The inverted commas designed to show, that this strange rhapsody was taken from the authors quoted below, were by accident omitted.

AMPHEMERINOS.—Page 96, col. 1, line 29 ; "*twenty-four species.*"—The term amphemerina undoubtedly means the quotidian remittents, and authors have applied the appellation to those returning fevers which arise from debility, from internal abscesses, and schirrous viscera. The greater number of fevers, however, which have been thus distinguished, appear to be truly tertians, and often double tertians. Thus the amphemerinæ of marshes are the worst kinds of remittents, and strictly tertians, though they appear to return daily; but, if minutely examined, the alternate paroxysms only are equal. See FEBRIS and INTERMITTENS.

AMPUTATIO.—Page 97, col. 2, line 29 ; "*now introduced or improved.*"—The author, who first published the improvement of the operation by the flap was a Mr. Young of Plymouth, whose latter is dated in 1678, and it is there attributed to Mr. Lowdham, a surgeon of

Exeter. Verduyn's Dissertatio Epistolica de Nova Artuum Decurtandorum Ratione, appeared at Amsterdam, in 1696; but we introduced these remarks chiefly to observe, that the proposal did not meet with general approbation: Koenerding, Acrel, and Nannoni (Discorso Chirurgico, &c. 39), opposed this plan, and, though mentioned by numerous surgical authors, it was neglected till the time of Allanson.

Amputation at the joint appears to have been more extensively practised than has been stated in this article. Numerous instances are recorded of the arm having been taken off at the joint of the shoulder; of the leg at the articulation of the knee; of the fingers and toes at their different articulations. The amputation of the thigh at its articulation is an object much more terrific. The subject was proposed by the Academy of Surgery, in 1756, in the following words. "To determine, in cases where amputation at the joint of the thigh appears the only method of saving the life of a patient, if this operation may be attempted, and to point out the most advantageous method of performing it." The question was again proposed in the year 1759, and Barbet succeded in ascertaining the cases in which it might be attempted, though he does not venture to determine the method of performing it. The emergencies in which it may be attempted are, in his opinion, a gun-shot wound, or any other violent contusion which would leave few parts to separate; a complete sphacelus, terminating near the articulation, having destroyed a great part of the substance. It would not be equally advisable if the femoral artery was opened near the ligament of Fallopius, or if an aneurism had been formed in this place: for the depth and extent of the wound would render it highly dangerous. An instance seems to support his ideas. In 1748, a lad of fourteen was brought to the hospital at Orleans, with a sphacelus in both legs, and one thigh, by eating ergoted corn. It terminated, however, on the right side, round the articulation of the thigh, and on the left, near the great trochanter. The suppuration almost wholly separated the right thigh, which was held only by the round ligament of the femur and *the sciatic nerve*. The connecting parts were divided, and the operation succeeded so well that the surgeon amputated the left thigh four days afterwards. The operation was attended with neither pain nor hæmorrhage, and granulations were springing on the right side, on the tenth day, when fever came on, which checked the suppuration. Another instance occurred at Ormes, in 1773. The right thigh of a young man, aged twenty-one, was broken, and excessively bruised by a carriage against a wall. The pain, swelling, and fever were considerable, and a gangrene came on in three days. By an active employment of the usual remedies the gangrene was stopped; but the soft parts were destroyed, and the thigh was dissected on every side. Little remained to be divided, and the operation was performed without any bad consequence. The ulcer cleaned, the teguments advanced, and the cure was completed in eighteen months. The man was alive in 1796, had married and had one healthy child. He was cook at an inn in St. Maure.

In this country the same operation has been performed by Mr Ker of Northampton (Medical Commentaries, vi. 337), in the case of a girl, exhausted by an abscess, near the great trochanter. It seems to have been conducted with great steadiness and ability; but little expectation could be entertained of its success, from the previous state of the patient. In fact, the acetabulum was carious, the ligamentum rotundum destroyed, an abscess had taken place on the psoas, and the lungs were, in a great part, lost in a mass of purulent matter. The operation, however, was completed with little difficulty, though Mr. Ker candidly acknowledges that he should probably have experienced greater embarrassment, had the round ligament been sound.

To *prevent hæmorrhages*, modern surgeons make their ligatures by means of flat crooked needles with cutting sides, furnished with threads, more or less numerous, waxed and flatted in the form of a ribband. With these they compressed the artery, usually taking in some of the surrounding flesh to prevent the thread cutting through the vessel. In general, when the vessels are large, more of the surrounding substance is taken in, and the ligature is made less strait; for in the smaller vessels the ligature may be allowed to separate more quickly. Mr. Broomfield, however, restored the old method of Paré to draw out the vessel, and tie it by a thread passed around.

When ligatures are not employed, buttons of lint, filled with flour, and a proportion of blue vitriol, or a bit of alum applied to the mouths of the vessels, or introduced into them, are recommended; but the security they afford is not great, and the escar often separates before the vessel is sufficiently firm. Compression, if not made by the hand, is effected by a mass of lint secured by slips of sticking plaster, with bandages crossing in every direction over them; but this method, which prevents the swelling that the necessary inflammation would produce, often brings on inflammation above, with severe fever. The difficulty attending these methods has introduced the agaric (see AGARICUS QUERCI), which we perceive the original author, Brossart, used to sprinkle with gun-powder. The agaric did not act by its astringent powder, as was at first supposed, but from its softness and elasticity, properties in which it was excelled by sponge. This the surgeons of this country for some time employed; but found it adhere strongly to the wound, from which it was separated with difficulty.

The situation of the patient after the operation has been described with too great refinement. Louis (Memoires de l'Academie de Chirurgerie, ii. 268, iv. 40) contends that it should be the same as during the operation; others, that it should be horizontal for the first fourteen days, and then more elevated (Memoires de Dijon). The object of these regulations is to prevent the projecting bone, which the modern methods of performing the operation render no longer important. An author in Richter's Bibliotheca contends that the position, during the operation, should be that of the member at rest; Valentine, on the contrary, that it should be so changed that every muscle should be cut in their strongest action, when most retracted.

After the operation of amputation the patient should be laid in bed, and the stump placed on a soft pillow to guard as much as possible from the effects of involuntary startings; or it may be fixed to the bed by two straps. The patient should immediately take an anodyne draught; and a large dose of the tincture of opium

is sometimes given, previous to the operation, to lessen the pain. The spasms generally arise from the irritation of some nerve included in the ligature. The patient should be carefully watched, lest any bleeding should occur. If a little oozing only appears, no alarm will be excited; but if it is found to come from a large artery, a ligature should be immediately applied. A strict antiphlogistic regimen should be observed, and the bowels kept gently loose.

If the stump swells considerably, the bandages should be somewhat slackened, and a saturnine lotion employed. To which may be added the loss of a few ounces of blood. If, on opening the wound, the parts appear loose and flaccid, they should be brought more carefully together, secured more firmly, and a little of the bark may be given. In about a week the ligatures separate with ease; but if they do not, they may be gently pulled at every dressing. After this time the patient should be supported by tonics and strengthening diet.

AMYLUM.—Page 103, col. 2, line 22; "*its lightness, neatness, and smoothness.*"—This fœcula is separated by fermentation, and forced through the interstices of a canvas bag by beating. The proportion of starch in wheat is a little less than one half. It is contained in a variety of vegetables with different substances: in wheat and rye, for instance, with gluten; in beans, pease, and lupins, with extractive matter; in the potatoe, and some other roots, with mucilage; in germinating corn, the parsnip, Jerusalem artichoke, &c. with sugar; in almonds, with oil; in the bardana jatropha manihot, arum, asarum, and other tuberous roots, with an acrid matter.

ANÆMIA (from α *non*, and αἷμα, *sanguis*). It has been remarked, that animals bled to death still retain so large a proportion of this fluid, that the redness of the muscles is scarcely diminished. It has occurred, however, in numerous dissections, where no very dicriminated complaint had preceded, that the large vessels were found peculiarly empty. C. L. Hoffmann has published a singular case of this kind, and similar ones may be found in De Haen (vi. and ix.), in Lieutaud, Freytag (Diss. de Anæmia Gottingen, 1785), and Schwencke apud Halleri Dissertationes Practicæ, vii. 469). Lieutaud (Synopsis Medica, i. 52) has noticed this disease at the greatest length, and observed, that no preceding evacuations will point out the cause, as these are fatal before any large quantity is lost; and if death is not immediate, plethora rather than inedia is the consequence, from the suppression of the secretions. The symptoms, in his opinion, are languor, great debility, loss of appetite, a noise in the ears, and a peculiarly resplendent complexion. Many, he remarks, are worn down by profuse perspirations, diabetes, or diarrhœa; and dropsical exudations close the scene. These are, however, the symptoms of general debility, or, as it may be styled, cachexy only. Sometimes the vessels are full of air, sometimes like wax, and, in one instance, which opposes indeed his general doctrine respecting evacuations, not a drop of blood was found in the vessels of the brain of a young woman, who was bled, for some unknown reasons, one hundred times within the year. It occurred also in a man who died suddenly after having recovered of a peripneumony, in which he had been bleed freely.

In the case recorded by Schwencke, the person had been long insensible in consequence of a fall; and he drops a casual observation which merits some attention, that, when the function of the brain is injured, the sanguification is checked.

ANÆSTHE'SIA.—Page 104, col. 2, line 22; "*dysæsthesiæ* of Cullen."—While, however, we cannot perceive that any nerves are so distinct in their office as to supply simple sensation (that is, sensation independent of what is modified by peculiar organisation), or muscular action exclusively, it is not easy to explain anæsthesia when it occurs as a symptom of palsy. Yet we have found that, when this disease is general, the sensation is sometimes destroyed with little injury to the moving powers, and at others, motion is lost, while the sensibility remains, or is increased. It is also an observation as old as the time of Galen, that the sensation of the fingers has been restored by stimulating applications to the spine.

We can only perceive with distinctness the cause of this complaint when it arises from the application of narcotics or sedatives topically. Yet even in these there is apparently a distinct action. Cold, with numerous sedatives; opium, with many other narcotics; will destroy the sensibility of the skin. Belladonna, on the contrary, will produce a dilatation of the pupil, without impairing the sensibility of those parts of the eye to which it is applied. We must leave, therefore, this subject among many of the arcana of the nervous system, and be contented with reflecting, that topical stimuli will often restore the feeling completely, when not connected with any disease of the brain or spinal marrow.

ANAGA'LLIS.—Page 104, col. 2, line 28; "*anagallis arvensis* Lin. Sp. Pl. 211."—The plant is low and succulent, differing in its appearance from chickweed, by the spots underneath its leaves, in having no pedicles; the seed-vessels opening horizontally; the colour of the flowers, which is red or blue: it is annual, flowers from May to August, and grows wild in cultivated grounds.

ANAGYRIS.—Page 104, col. 2, line 47; "*Fœtida* Lin. Sp. Pl. 534."—The species is erroneous. It is the *cytisus laburnum* Lin. Sp. Pl. 1041.

ANALO'GIA.—Page 105, col. 1, line 32; "*from their similitude.*"—Analogy is of considerable use in our reasoning in medicine where certainty is often denied. In anatomy the comparative structure of organs in animals, destined to a different mode of life, will often lead to a knowledge of their functions in the human body, when this difference is considered. In the practice of physic the analogy of a medicine with one known to be advantageous, and which cannot be procured, will lead to an useful substitute. When we find an intermitting disorder, whose nature we are unacquainted with, the same principle leads us to try those remedies which relieve intermittent fevers. Analogy should not, however, be too securely trusted, nor indeed should it be employed but by a practitioner of judgment and experience. The advantages, for instance, of balsams in external wounds led our ancestors to employ them in hectic cases; and the astringents, which would stop external hæmor-

rhages, were absurdly given to remove internal ones. Each was injurious.

Page 106, col. 2, line 28, read *which open into* the cellular membrane. At the end of the following paragraph, read for DROPSY, HYDROPS.

ANASTOMOSIS.—Page 107, col. 1, line 53; "*the discharge is per diabrosin, erosion.*"—Anastomosis, in its first and strictest sense, viz. the union of different arteries, either by the connection with the common trunk, or by their mutual inosculations, is of the greatest importance, as when even a considerable branch is destroyed, the circulation is supported either by the enlargement of the smaller ramifications which arise from above, or of those which communicate below with these smaller branches. Thus the coldness and paralytic state of a limb, after an operation for an aneurism, are gradually lessened, till almost the former healthy warmth and motion are restored. There are, however, more important advantages from the union of the larger circles in the arterial system, which we shall shortly mention.

We have observed (see NERVUS) that there is little communication between the two sides of the body except by the intercostal, which we have styled the ganglionic, system. It is necessary, however, at present, to remark, that the two sides are not wholly distinct in the distribution of the arteries. The femoral and mammary arteries communicate on the fore-part of the abdomen, by their extreme branches, a circumstance not unobserved by anatomists, who from thence have, with little foundation, explained the secretion of milk when a supply was no longer wanted for the fœtus. M. Paris, however, has shown that this communication may be important in supplying any obstruction to the circulation through the aorta. He found this large artery contracted a little below its arch, and the anastomosing vessels considerably enlarged.

A very striking anastomosis takes place in the smaller ramifications of the arteries of each extremity, contrived to support the circulation in the limb, when the principal branch is obstructed. In the upper extremity, for instance, the subclavian artery, before it enters the axilla, sends off the thyroid and cervical arteries, which ramify round the joint, and anastomose with the extreme branches of the brachial artery. In the lower extremity, the ischiadic, thyroid, and pudic arteries anastomose with the smaller branches of the profunda, and will supply the limb if the external iliac is destroyed. The elbow and the knee are equally surrounded by arteries, which anastomose in their extreme branches.

ANATOMIA.—Page 107, col. 2, line 41; "*did honour to their profession.*"—The history of anatomy, for the reasons afterwards assigned (see CHIRURGIA), we have united with that of surgery, and the objects of the anatomist we need not point out at present, as every part of the human body, whether solid or fluid, are the subjects of his attention. On examining our list of anatomical plates we perceive that we have omitted Sue's Osteology designed to illustrate the first Dr. Monro's work on the Bones; Meckel on the Nerves; Caldani on the Ligaments; Zinn and Soemering on the Eye; Cotunnius and the younger Meckell on the Ear; Mascagni on the Lymphatics; Walther on the Nerves of the Thorax and Abdomen; Bidloo or Cowper on the Muscles; and Loder on the minuter Structure of many Parts of the Body. But on this subject we have already spoken (see Plates), and shall probably return to it when we explain the sources, and the objects of those which contribute to illustrate the present work.

We have omitted, we perceive also, some authors of value on the subject of COMPARATIVE ANATOMY; particularly a very early work, Blasius on the Anatomy of Animals; Camper; Blumenback's comparative Anatomy; the works of Pallas, Scarpa, Comparetti, and, above all, D'Aubenton, the companion and assistant of Buffon. The remaining part of Cuvier's lectures are since published, and the whole is comprised in *five* volumes. Mr. Bell's anatomy is in *four*.

ANATOMY VEGETABLE. See PLANTA.

ANAUDIA.—Page 109, col. 1, line 6; "*aphonia signifies the loss of voice.*"—The loss of speech must arise generally from a paralysis of its organs, while the loss of voice is owing, as we have seen, to a relaxation of the ligaments and muscles of the glottis. We find instances, but on no very good authority, of speech being lost by drinking cold water when heated, and in another case it was recovered in consequence of a fever. Neither fact is incredible. The loss of speech, while the voice is retained, should be more properly denominated the loss of articulate sounds.

ANCHUSA TINCTORIA, Lin. Sp. Pl. 192.—The anchusa tinctoria is rough, hairy, and perennial, with unbranched procumbent stalks, resembling the bugloss, but differing from it in the colour of the roots. It grows in the south of France and in the Levant; but is raised in our gardens, though the roots in this country are of a lighter colour.

ANCHYLOSIS.—Page 109, col. 2, line 62; "*are considerably beneficial.*"—Many instances have occurred of an universal anchylosis. Columbus (De Re Anatomica, xv. 489) mentions a case of this kind; another is described by Connor (De Stupendo Ossium Coalitu Oxoniæ, 1695), and another is recorded in the Memoirs of the National Institute. Lues is mentioned among the causes, and Morgagni describes it, in one case, as arising from the formation of a firm membrane (De Sedibus, lxix. 12). Among the remedies we find the hemlock, the aconite, the pulsatilla, and mercury, recommended internally. Burning with moxa, galvanism, and electricity, externally. We perceive an instance recorded by Sandifort (Exercitationes Academicæ, p. i. &c.) of an anchylosis of the occiput with the atlas, and of the latter with the epistropheum.

ANDIRA.—Page 111, col. 1, line 55; "*It does not occur in the system of Linnæus.*"—It is a tree of the class diadelphia and order decandria. The calyx is urceolated with five indentations, the corolla has two petals, the legumen fleshy, with a single seed. The leaves are alternate, with an unequal one, the folioles lanceolated, and nine in number. La Marck thinks that it may be

referred to the vouacapoua of Aublet; but it is a different species from any yet described.

ANDROSACES.—Page 111, col. 2, line 62; "*The species is uncertain.*"—On examination we find it the *androsace maxima* Lin. Sp. Pl. 203.

ANDROSÆMUM.—Page 112, col. 1, line 3; "*It grows in hedges and thickets.*"—It is a slender plant with thin, bitter stalks, without leaves, but with small pods on the top of the stalks, containing the seeds.

ANEMONOIDES.—Page 112, col. 1, line 44; "*resembling in virtues the garden anemone.*"—Anemone nemorosa Lin Sp. Pl. 762.

ANETHUM.—Page 112, col. 1, line 58; "*anethum graveolens* Lin. Sp. Pl. 337."—It is an annual umbelliferous plant, with finely divided leaves, and yellow flowers. The seeds are oval and brown, flat on one side, convex, and marked with three longitudinal ridges on the other, surrounded by a yellow leafy margin. The plant is a native of Spain and Portugal; but flourishes in our gardens, and flowers in July.

ANEURISMA.—Page 114, col. 1, line 42; "*formed in consequence of ruptured veins.*"—We shall divide our additional observations in aneurisms as they relate to the causes and diagnosis, or to the treatment. We have not, we perceive, noticed one circumstance which has occasioned some controversy, viz. whether in aneurisms, the external, the muscular, or the internal coat is ruptured or dilated. It is generally admitted that the whole canal is occasionally dilated, and that, in some instances, one of the coats at least, in others all, are ruptured. It was the opinion of the ancients, that all the coats were ruptured, and Fernelius, we believe, first supposed that the tumour arose from dilatation only, while Sennertus admitted that the outer coat was dilated, and the muscular one ruptured. It is not easy to ascertain the facts, as in aneurismal sacs the coats are thickened and confounded; but, in general, the internal coat, though strong, is composed of annular fasciculi; which will admit of rupture between the rings, and the muscular coat will, of course, admit of the separation of its fibres. If the distension be sudden, we should doubt whether the muscular coat would burst, as distension is the stimulus exciting the action of hollow muscles; but we know that they will admit of gradual distension, without any excitement; and Haller, as well as Dr. Monro, have found the muscular coat distended only, and sound. Dr. Nichols, in an experiment tried before the Royal Society (Philosophical Transactions, N° 402), burst the internal coat of the pulmonary artery by blowing into it, and the external was distended in "aneurismous sacs." From this sudden distension, the muscular coat, instead of yielding, suffered the air to escape between its fibres; and in aneurisms at the curve of the aorta, where the muscular fibres are strong, the same appearance is observed. It is highly probable, therefore, that, in the greater number of instances, the internal and the muscular coat are ruptured, when the whole canal has not yielded. This is decidedly Scarpa's opinion, whose work we unfortunately did not see until this sheet was in the press.

Among the causes, those of debility are usually enumerated. We find a singular instance of what we have styled the aneurismatic diathesis in De Haen (Ratio Medendi, iv. 2, § 7), in a boy of seventeen, accustomed to work in gardens; and Lancisi has observed, that the larger the aneurisms near the heart, the more distant arteries are weaker and smaller. The causes of debility, supposed to induce this diathesis are, gout and rheumatism, apoplexy and palsy, a sedentary life (Lancisi de Subitanea Morte, 100), and syphilis (Guattani de Aneurismatibus; Morgagni de Sedibus, lviii. 13). To these causes Mr. Freer adds, in a late work, inflammation of the coats of the arteries. Worms found in the arteries of animals by Morgagni, Ruysch, &c. are supposed to be occasionally the cause of this disease, by knawing the internal coats.

Aneurisms may be distinguished from palpitations of the heart, which are sometimes so violent as to produce a pulsation equally strong, by the intermissions of the latter. If there are moments when the heart can be felt in its proper situation, and regular both in strength and frequency, no aneurism has probably taken place. In the advanced stages of aneurisms, however, when the coats thicken, and polypous concretions are formed, there is often no pulsation. The symptoms of suffocation in hysteria are also not constant. Varices in the veins are usually soft, and do not beat unless seated on an artery; and emphysema or echymosis is scarcely in any instance found to pulsate. Abscesses may be mistaken for aneurisms, if their first appearance and the progress of maturation is not watched. Aneurisms are often painful; but the pain is not, as in abscesses, confined to the tumour. When the skin is distended by aneurism, inflammation comes on; but the beating is then so strong and distinct in the greater number of instances as to preclude mistake. In the extremities we can always distinguish aneurism by stopping the circulation in the artery above, and in the larger vessels the strength of the pulsation, its constancy, the dyspnœa with which it is attended, the languor, debility and syncope which generally accompany the disease, will point out its nature. It is necessary, however, to add, that even experienced practitioners have been deceived.

The palliative cure, recommended in this article, has sometimes succeeded when carried to a great extent, in proving a radical one. It was first employed by Valsalva; but published by his friend Albertini, in the Bologna Transactions, and communicated to Morgagni at that city in 1728. A considerable bleeding was premised, and then the aliment gradually lessened, till the patient could scarcely move from his bed. A little more food was at this time allowed, but given sparingly till the symptoms disappeared. In one instance, where the patient died from another disease, the tumour was found considerably lessened, and even callous. Sabatier (sur la Medecine Operatoire, iii. 200) relates a case in which the same method succeeded under his care. We have not mentioned the osteocolla given by Valsalva, or the alum pills of Sabatier, as they had probably no particular effect in reducing the tumour. The astringent fomentations directed by the latter may have been useful.

The advantages of compression, in this article, are chiefly confined to early pressure, when the accident

s known. The same means of relief, however, have been employed in aneurisms from an internal cause; but this mode is chiefly applicable to those in the extremities. Pressure is of two kinds, viz. on the aneurismal sac, and on the artery above. The older surgeons employed a plate of lead; we find it still recommended by some modern authors, and Vicq. D'Azyr, in the History of the Royal Society of Medicine for 1779, has proposed a new tourniquet for this purpose. It certainly sometimes succeeds in small aneurisms, where an equable force can be obtained in the neighbourhood of a bone; but, where the tumour is surrounded by soft parts, it escapes the effect of the pressure, by passing between the muscles, or the force is exerted unequally. Mr. Freer, in a late work, has proposed what he considers as a new mode of compression, viz. on the artery above. This method, however, is by no means a new one. It was employed many years since in Italy with some modifications, which we shall soon notice, and is mentioned by Sabatier in his Operative Medicine, iii. 219, published in 1796. It seems not to have succeeded very perfectly in Mr. Freer's hands; but the Italian method, which combined the effects of the bandage above with compression on the tumour, promises to be more advantageous. It appears probable, that, if the current of the blood could be checked rather than stopped in the artery above, while a compression, just sufficient to prevent the tumour from enlarging, was made on it, we should gain the desired end with little inconvenience to the patient; and we have now, also, in our power a medicine which represses very actively the force of the circulation (digitalis), which will render the starving plan of Valsalva less necessary. We know, from Mr. Hunter's operation on the popliteal aneurism, that the sac, when no longer within the course of the circulation, is often absorbed.

When in the operation the wound of the artery is discovered, the hæmorrhage has been sometimes checked by the agaric and the vitriol buttons; but the application of these is limited to small wounds, though, if cases occur in which they will probably succeed, the circulation will be in some measure preserved. The ligature is, however, now constantly employed. There has been much apprehension of wounding the artery with the needle, and blunt ones, or different contrivances to raise the artery, have been suggested (Petit). There is, however, little reason for the caution, and the laceration from a blunt needle is more injurious than any wound, which can be at once perceived, and the effects easily guarded against. To avoid the median nerve in the operation of the humeral artery, where it sometimes closely accompanies the vessel, Sabatier advises the surgeon to carry the needle from the internal to the external condyle of the humerus; but, in general, there is little danger in including the nerve in the ligature, if we except the pain on tying. Thierry made many experiments on dogs of different sizes, where he purposely included the nerve, without any inconvenience; and it is of consequence to keep this fact in view, as the nerve is with difficulty discovered from the effusion of blood. Mr Abernethy advises two ligatures, and the division of the artery between; because when the artery is tied in the middle of a detached portion, so as to cause the death of the part which it incloses, there will still be a portion of some extent both above and below liable to ulcerate, particularly in unsound arteries; and in these chiefly aneurisms take place. The greatest inconvenience of the plan is, that it requires farther dissection; but the advantages of this precaution seem to overbalance the disadvantages; or, as we have observed, the arteries are sometimes ossified, more frequently preternaturally weak. Petit, who adopted the plan of two ligatures, employed a needle with a double eye; but this method was not particularly advantageous, as the ligatures were so near each other.

After the operation the parts below are for a time cold and insensible; but, it is said, they soon recover their heat, chiefly from the dilatation of the collateral branches. This opinion has been repeated, like ten thousand others, from one author to another, with little inquiry, probably because it was sanctioned by Haller, in an early work, the Commentary on Boerhaave's Lectures. Morgagni, however, records a fact of importance from the communication of Molinelli, where the operation was performed on the brachial artery. The pulse was no longer felt, and the arm lost its feeling and motion, both of which in part returned after about fifteen days, and wholly in nine months. On dissection the humeral artery was obliterated about the breadth of three fingers, and there was no communication between the portion above and the radial artery, but by a very small tortuous branch. (Morgagni de Sedibus, l. 8; Molinelli in the Bologna Transactions.) The nerve, where it was included in the ligature, had swelled to the size of a ganglion.

Desault adds his testimony on the same side, for he never found the collateral branches enlarged; yet it is well known that the pulse often returns, so that probably the numerous capillaries supply the place of the artery, which has been tied without any change in their dimensions. It is often a long time before the pulse returns, and in some instances a gangrene comes on, which makes the operation of amputation indispensable.

Rest, and a cooling regimen, are constantly necessary after the operation: the dressings must be removed with the greatest precautions, and the separation of the ligatures must be prevented with care. They generally separate from the twelfth to the fifteenth day after the operation, and they usually bring with them the extremity of the artery which they have apparently cut through. This is evinced by the difficulty of removing them when they have been tied too slack, and remain so long as to impede the cure. In the operation of the aneurism of the femoral artery, where the coats are so thick as to be with difficulty brought together, M. Deschamps invented an instrument to draw the knot tighter, and the ligature was made with a flat lace, which would not cut through them; but this instrument is now disused.

We might add some additional remarks on the dilatations of the arteries in different parts of the body; but the judgment of the practitioner will easily apply these general observations, and we must not fill a disproportioned space with one subject.

Lauth's collection contains the treatises of Lancisi, Guattani, Verbrugge, Mattani, Weltinus, Murray, Trewe, and Asman.

ANGELICA SATIVA.—Page 116, col. 1, line 52; "*virtues of the dried roots reside.*"—The English angelica is mostly employed in this kingdom, particularly by the

confectioners. The root is brown, oblong, about two inches thick, acrid, and fragrant, though to many the smell is unpleasant. The leaves are large, composed of pinnated folioles, of an oblong oval figure, dentated at the edge, and the odd leaf at the end of the pinna is lobated. The umbels are large and globular, the flowers very small, and greenish. Those of the foreign archangelica are yellow, and the leaves larger. The roots retain their flavour longer than the leaves, but lose it by keeping. The fresh root wounded early in the spring yields an odoriferous, yellow juice, which, when dry, concretes into an elegant gum resin, containing all the virtues of the angelica. When the root is dried this resin appears to be distributed in little veins, and is soluble in spirit only.

ANGINA.—Page 117, col. 1, line 11; *"a species of quinsy to which children are subject, called pædanchone."*—We are reminded by an observation in Riedlin's collection (Linea Medicinæ) of a species not uncommon, but which may be termed symptomatic. It is that angina which arises from inflammation of the muscles, and may be styled cynanche rheumatica. We perceive also that we have omitted, among the remedies, calomel and opium, recommended by Dr. Hamilton. Rush mentions calomel, in what he styles angina humida; and Hoffmann mentions the utility of mercurial ointment, rubbed in externally.

Tournefort, in his Travels through the Levant, observes that it appears to be an endemic disease in the islands of the Archipelago, apparently belonging to the angina maligna, viz. an anthrax in the back part of the throat, which is quickly fatal, attacking most commonly infants.

Page 121, col 2, line 33, for *washing* read *wasting*.

ANGINA PECTORIS.—Page 121, col 2, line 24; *"are peculiarly apt to return, or to be aggravated."*—The causes to which this disease has been attributed are various. Dr. Haygarth (Medical Transactions, iii. 6) thinks it owing to an abscess in the mediastinum; Dr. Hooper (Memoirs of the Medical Society, London, i. 19, 21), to blood effused into the pericardium; Wall to an ossification of the cartilages of the ribs; Butter, Macqueen, and others, to a gouty diathesis. The former opinions are not, however, supported by dissection; and the last, though more probable, has not been established by observation.

Dr. Smyth, in the Medical Commentaries of Edinburgh, has observed some advantages from the occurrence of the hæmorrhoidal discharge; and, in the same collection, we find that arsenic has been useful as a remedy.

ANGUSTURÆ CORTEX.—Page 122, col. 2, line 32; *"proved to be very different."*—Wildenow, it is said, suspects it to be the production of the magnolia Plumieri, vol. ii. 1256; but there is not the slightest hint of it in his edition of the species plantarum, and this tree is a native of the American islands. Mr. Brande found that 3840 parts yielded to alcohol 144 of resin, and 300 of an acrid unctuous substance: the residuum gave to water 1500 of dry gummy extract. Inversely he obtained 2110 of a clear brown extract, bitter, but not acrid, and 161 of a light brown resin, extremely acrid. By distillation it yielded 26 of essential oil. The tincture is of a deep yellow, reddens the infusion of turnsole, and becomes turbid and white on the admixture of water. It is not precipitated by gelatin, but by galls, and, therefore, according to Dr. Duncan, it does not contain tanin, but cinconin. He adds, that it has the peculiar property of acquiring a deep red colour with red sulphat of iron, and depositing a purplish slate-coloured precipitate.

As a bitter it seems to possess a peculiarly soothing quality, checking irritation, without increasing dyspnœa. In this respect it resembles the myrrh; and, since the printing of the article, we have found it peculiarly beneficial in hectics, though not powerful as a general corroborant.

ANHIMA.—Page 123, col. 1, line 20; *"is esteemed an antidote against poison."*—The anhima of Ray and Willoughby is the palamedea cornuta of Linnæus and Latham (Index Ornithologicus, p. 669). Besides its distinguishing horn, it has two strong triangular spurs, directed forward when the wing is closed: these are the apophyses of the bone. The bird, which is of the order grallæ, is, however, mild and peaceable, except in the season of its amours, and then the males only attack each other.

Page 125, col. 1, line 15; *"from vegetables."*—See CHEMIA, versus finem.

ANISUM.—Page 128, col. 1, line 33; *"are generally the most esteemed."*—The herb is small, annual, and umbelliferous; the seeds rounded, striated, flat on one side, and pointed at one end, of a pale greenish colour: the upper leaves are divided into five segments, the lower entire, roundish, and serrated about the edges.

ANISUM INDICUM.—Page 128, col. 1, line 21; *"Indian or stellated anise."*—The seed-vessel of this species consists of brown, hard, wrinkled capsules, more than half an inch in length, joined at their bases, forming a star: the number is usually six, and each contains one seed, externally glossy, of the colour of lintseed, internally white.

ANOREXIA ATONICA.—Page 131, col. 1, line 40; *"mint and its preparations."*—Anorexia sometimes arises from other causes, viz. from the use of narcotics, as smoking or chewing tobacco, drinking frequently strong tea and coffee, a defect of saliva, or too great discharge of it from any cause; from grief, terror, inactivity, expectation, disappointment, ulcers, schirri, &c. of the stomach. It is often also a symptom of various disorders of the chylopoetic viscera; of the pancreas (Boneti Sepulchretum, iii. 1, obs. 16), of the spleen (Ejusdem, 10, 15), of the stomach (4, 9), of the mesentery (16), and of the liver. When it has continued long, the cure is peculiarly difficult, and the progress slow. Garlic has been recommended; and, with many authors, steel is a favourite medicine. Wormwood and the mineral acids are also often highly useful.

ANOSMIA ATONICA.—Page 131, col. 1, line 56; *"cause will lead to the means for relief."*—Among the causes may be also enumerated inflammation from cold, and we perceive that it has been attributed to a stimulating fluid injected into the nostrils in an errhine. A

destruction of the bones of the nose, and ulcers, from lues, are alike injurious in this respect.

It is seldom an object of practice, except when it arises from catarrh or lues. A thin acrid defluction, independent of catarrh, is spoken of, but so vaguely that its existence is doubtful. In such cases, warm, stimulating vapours are usually employed, as those of frankincense, &c.; nor is the practice very different when the mucus is supposed to be too viscid. The fumes of vinegar are, however, more successful. The best sternutatory, in such cases, is the vitriolated mercury, with ten times the quantity of any mild powder, as that of liquorice. In the venereal anosmia the fumes of cinnabar may be drawn up the nostrils. In the atonic anosmia we must depend on general stimulants, or, where the vessels are loaded, on topical evacuants. The nerves are too distant to be affected by stimulating applications.

ANSERINA, (from *anser*, because geese are fond of it). *Potentilla anserina* Lin. Sp. Pl. 710; SILVER CINQUE-FOIL or WILD TANSEY. It was supposed to be an astringent, as the *p. reptans* is slightly so, and was consequently recommended in diarrhœa, and in hectics. It was sometimes also employed in calculous complaints; but its sensible properties are inconsiderable, and it is now wholly disused.

The different species of chenopodium, a genus which affords the bonus, henricus, &c., are collected by the French naturalists under the term *anserine*. To this genus they refer the quinoa, a plant carefully cultivated in Peru; for the leaves are eaten as spinage, and the seeds as millet. The latter make excellent beer. The seeds hitherto brought to Europe have not germinated.

ANTACIDA.—Page 131, col. 2, line 8; "*for which purpose.*"—Bitters have been considered as antacids, and, in a chemical view, seem to have some effect; but their chief utility in acid stomachs arises from their tonic power. They are undoubtedly often beneficial, and, by their effects on the stomach, we have chiefly found them advantageous in gout and calculus.

Acid not only abounds in weak stomachs, but in those also where vegetables have been employed in too large a proportion, or where tea, and similar infusions, but weakly alimentary, have been used instead of animal food. There is not the slightest evidence that acid is found beyond the duodenum: it certainly never enters the circulating system. See MORBI FLUIDORUM.

The present practice, when antacids are required, is confined to magnesia, chalk, lime-water, or the different alkalis. We have not yet sufficient experience of the alkalescent earths to employ them freely, or have not yet conquered the apprehension of their deleterious power. The common opinion that chalk, with the acid in the stomach, forms an astringent, and magnesia a laxative neutral, is doubted by Dr. Cullen. Such, however, is the general idea, and we suspect that it is not without foundation.

ANTALIUM.—Page 131, col. 2, line 23; "*the same with the shells of oysters, &c.*"—It is a coral, the *dentale entale* of Dargenville. The dentalia are sometimes found fossil.

ANTALKALINA.—Page 231, col. 1, line 26; "*Such medicines as resist or destroy acids.*"—In the Boerhaavian school among the diseases of the fluids, an alkaline acrimony held a distinguished place; but, if an alkali appears in the circulating system, by the laws of the animal economy, it must be the ammonia, and an ammoniacal neutral occasionally prevails. This salt cannot, however, be destroyed by any acids, for they cannot be conveyed unchanged into the arteries, nor is it probable that, if this were practicable, any advantage would result. The only disease, in which observation still supports the existence of an ammoniacal salt in excess, is in scurvy (see SCORBUTUS); and in that article we have sufficiently considered the subject.

In the stomach alkali may be more readily found; but, except as mentioned in the article, we see no traces of it. What has been styled alkaline, or putrid, saburræ consist chiefly of bile. Nidorous eructations, which resemble in smell rotten eggs, arise generally from this fluid escaping, by a retrograde motion, into the stomach; for the powers of life will render even putrid substances sweet.

ANTEMETICA.—Page 132, col. 1, line 2; "*a glass of wine, or even brandy.*"—In some instances, vomiting is so obstinate as to continue, notwithstanding these remedies, and occasionally from the harassing action, as well as from the want of a due supply of nutriment, the patient sinks. To be more distinct, we must divide these cases into the more acute and chronic. The more acute cases sometimes arise from inflammation of the stomach; often from bile, brought back by the inverted motion of this viscus, communicated to the duodenum; sometimes from irritability only. In the former case, there is generally fever, but very constantly a soreness on pressing the epigastric region: the latter we distinguish by the bile brought up, by the season in which bilious discharges are most troublesome and violent, and by the constitution of the patient. When there is soreness in the epigastric region, the best antiemetic is a blister, and moderate draughts of lukewarm gruel, with a small proportion of the syrupus e mecomo. It must be remarked, that bile is often discharged by vomiting when brought into the stomach by this action only, and it must not then be considered as a cause, but as a symptom of the disease. In such circumstances it is not uncommon to give an emetic; and if what is taken in be again discharged with little violence of effort, it is not improbable that some exciting cause remains at the bottom of the stomach (see VOMITUS); but, if the bile is brought up by violent straining, the emetic will only increase the distress. In this case, the effervescing draughts and opiates are chiefly applicable; but these are often again rejected, and even a single grain of opium, in a pill, is sometimes returned. When the vomiting has been so violent, we have found a tea-spoonful of the tinctura opii camphorata swallowed, alone, effectual. It is scarcely sufficient to reach the stomach, but is lost in the back part of the throat; and, by thus checking one of the train of associated motions, it by degrees lessens the others. Sipping, in the same way, a little water with toast, is grateful, refreshing, and often useful. The vomiting from irritability chiefly occurs in PREGNANCY, perhaps in SEA-SICKNESS, q. v.

The more chronic species of vomiting is found in

exhausted constitutions, in schirrus or ulcers of the stomach. In this kind the indirect stimuli are indicated, but the opiates are often required, and the blister to the pit of the stomach is sometimes necessary. In such circumstances the vomiting is frequently connected with eructations of wind, and it is probable that the oxide of bismuth, recommended by Dr. Bardsley, may be of service. But we cannot speak of it from experience. In this kind of vomiting the most powerful antiemetics are palliative only. See STOMACHUS and VOMITUS.

ANTHELMIA.—Page 132, col. 1, line 38; *"the other windward islands."*—The spigelia anthelmia springs from a small tapering root, fibrous on every side, by a strait, smooth, roundish, and hollow, stalk, rising sometimes to the height of nine inches. At the top are four leaves, almost equal, oblong, and sharp-pointed, with veins running obliquely towards the edges, terminating in the point. From the centre of these leaves rise two or three spikes bearing flowers, which, with the seeds, are numerous on one side. The principal stalk has generally two or three joints, out of which spring twice as many leaves, opposite, resembling those on the top, with as many branches in alternate order.

ANTHELMINTICA.—Page 133, col. 2, line 15; *"inimical to the general health."*—Dr. Heberden (Medical Transactions, vol. i.) records a case in which common salt was very useful in discharging ascarides, with a flat worm resembling the botts in horses. Two pounds were taken within the hour, and repeated the following day. See ASCARIDES, LUMBRICUS, and VERMES.

ANTHERA.—Page 133, col. 2, line 28; *"collyriums, dentifrices, &c."*—In botany, the antheræ are the enlarged extremities of the stamina, the male organs coloured by the pollen, or the fecundating farina.

ANTIHECTICUM.—Page 135, col. 1, line 2; *"see Lewis's Dispensatory improved."*—As this excellent collection of the more valuable portions of the older pharmacy is now scarce, we shall transcribe, in an abridged form, the process. Six ounces of martial regulus of antimony are melted together, with half as much fine tin, poured into a warm *greased* mortar, and when cold, powdered. The powder is deflagrated with three times its weight of pure nitre; calcined for an hour and half, and finely powdered. Water is then successively poured on the powder, and triturated, till it becomes no longer milky, and the part suspended in this milky fluid is the medicine. The regulus should be melted before the tin is added, and, if a blueish colour be required in the antihectic, as some authors describe, it must be calcined after its separation from the water. As the antimony is too much oxidated to be useful as a medicine, the chief dependance is on the tin, whose medical powers have not been sufficiently appreciated. See STANNUM.

ANTIPATHEIA.—Page 142, col. 1, line 18; *"disproportion, excite it."*—If sympathy or a peculiar attraction in the air, the countenance, and the manner of any individual exists, we must also admit of the existence of antipathy; and it is singular that it is sometimes found in very unexpected circumstances. A father has felt it for one of his children; and, after paroxysms of mania, though the mind is completely restored, it has been experienced towards those who have been particularly kind and attentive. In pregnancy also antipathies are not uncommon, though concealed by sensible women with peculiar anxiety. We have known women who have suddenly and unexpectedly fainted, who have in confidence confessed that it was at the sight of an object, or of a colour, peculiarly disagreeable; these have been females neither fanciful nor affectedly delicate, and the cause has been carefully concealed. The antipathy to some foods is well known, so that even their appearance or smell excites horror. If then antipathy exist, why may it not be felt on the appearance of objects confessedly disgusting to every one, as serpents, toads, &c.? We should have added *women*, as we could adduce our authority (Ephemerides Naturæ Curiosorum, An. vi. and vii. Obs. 14); but that it is one of those collections which we have said rather excite our wonder than command our confidence: unaccountable antipathies are certainly felt by horses and dogs.

ANTIRRHINUM.—Page 142, col. 2, line 10; *"snapdragon, and calf's snout."*—Since this ridiculous medicine has been retained, we may add that the species is the *a. majus* Lin. Sp. Pl. 859.

ANTISEPTICA.—Page 142, col. 2, line 60; *"a considerable degree of torpor in the system."*—See PUTREDO and SCORBUTUS. In the list of the MATERIA MEDICA, q. v., we have offered a different, probably an improved, arrangement.

ANTIVENEREALIS AQUA PRESERVATIVA.—Page 144, col. 1, line 25; *"we have not found such consequences."*—From a farther inquiry we can, with respect to lues, speak more confidently, since we have endeavoured to show that this disease is distinct from gonorrhœa. As hernia humoralis is exclusively an inflammatory complaint, the inflammation may be transferred, or so much increased as to extend to the testicle. Since, however, we have resumed the subject, we may add, that the inflammation excited by the antivenereal water is often more violent, more lasting and dangerous, than that of gonorrhœa.

ANTRUM PYLORI.—Page 144, col. 1, line 54; *"stomach approaching the pylorus."*—This article has unaccountably crept in between the two parts of the preceding one. The subsequent paragraph refers to the former article, ANTRUM GENÆ.

ANUS.—Page 144, col. 2, line 35; *"wind from the anus are called crepitus."*—Abscesses often form near the rectum, and are with difficulty cured. If neglected, they are apt to become fistulous, and Petit, therefore, with great propriety, directs them to be opened early. Other surgeons are very cautious in this respect, and are apprehensive of the bad effects of opening them too soon. They sometimes leave ragged foul ulcers, which require stimulating applications, and the mercurial ointment is often of service.

Condylomata, fici, and various tumours, often arise on the edge of the anus, most commonly connected with lues, and removed by the appropriate remedy of this disease. They will not, however, always yield to

the mercurial friction, and must be extirpated, like the other excrescences, mentioned in the article, by ligature. See FISTULA.

Inflammation of the anus is sometimes a troublesome disease, and it arises from acrid discharges; from the discharge of foreign bodies; sometimes from ascarides, occasionally from the causes of pruritus in excess. The irritability of the part renders all violent remedies dangerous, and the most emollient fomentations with poppy heads, the saturnine applications, with sometimes brandy, or a proportion of camphorated spirit, are most useful.

The prolapsus ani has been noticed under "RECTUM," of which it is rather a disease; but we may remark, in this place, that the extent of the prolapsus is sometimes almost incredible. Morgagni mentions from the letters of Haller, that the valve of the colon was within sight (De Sedibus, xxxiii. lxv. 6), and Hagan describes a prolapsus of the whole colon. A paralysis of the sphincter is a frequent disease of old age, and is said to have arisen from anodyne injections in dysentary.

ANUS.—Page 145, col. 1, line 55; "*all inconvenience will generally be ended.*"—The rectum sometimes terminates in the urethra (Histoire de l'Academie Royale des Sciences, an. 1752); in the bladder (Kalchmid de Raro Casu, &c., and Wrisburg Commentaria Gottingens, 1778); in the perinæum (Winkler); and in the vagina. These are instances which do not admit of relief, as the termination of the rectum cannot be ascertained and the sphincter is probably wanting.

AORTA.—Page 145, col 2, line 60; "*aneurisms, ossification, &c.*"—*Aneurisms* of the aorta are not uncommon, and are generally distinguishable by a fulness on one side of the chest, a violent motion of the thorax, syncronous with the action of the heart, livid countenance, and dyspnœa. When the tumour compresses the vena cava, it produces occasional irregularities in the respiration, and in the case described by Dr. Simmons (Medical Communications, i. 7), at times spasms of the diaphragm. In this instance also, as in the cases recorded by Ruysch and Morgagni (De Sedibus, xvii. 17—20), there was no pulsation observable; for it was obscured by the accumulated coagulable lymph. In general, the pulsation is felt under the clavicle or in the epigastric region, according to the portion of the aorta affected. The symptoms, as Morgagni observes (De Sedibus, &c. xvii. 10), are often relieved by flatulent eructations, and the disease is, of course, considered as nervous or dyspeptic. In the latter stages it is often mistaken for hydrothorax. Littre, in the Memoirs of the Royal Academy, describes an immense aneurism of the aorta, rising so high as the jaw; and Morgagni (l. c. lxiv. 13, &c.) an enormous aneurism of the abdominal aorta, in which the posterior coats of the artery were destroyed, and the support supplied by adhesion to the neighbouring parts. The fatal event is usually brought on by a caries of the adjoining bones, more often by a rupture. The causes are, blows, violent efforts, and, according to Morgagni, coughs, and playing on the flute. See ANEURISM.

There are numerous instances of *polypi* in the aorta, though those, usually discovered on dissection, are probably produced in the last moments. It is not easy to ascertain the distinguishing symptoms of these concretions, nor indeed of importance, as we have no method of dissolving or removing them. Their usual effects are said to be anxiety and palpitation; but these symptoms are common, from a variety of causes.

Ossification of the aorta is not uncommon in persons advanced in life, and bony scales, within the coats, are frequently found when no previous disease could be traced. These are generally discovered in the arch of the aorta. Guattani, in his tract on aneurisms, describes a case in which he found the whole aorta osseous of a man whom this disease had confined to an upright posture, and Genga (Anatomia Chirurgica) speaks of a dissection in which the whole abdominal aorta was bony. Morgagni (l. c. xxiii. 2. &c.) describes the valves as ossified, in a case where neither palpitation nor dyspnœa was observable; and, in general, there are no symptoms to point out the morbid change, nor remedies of power to alter it.

The aorta is sometimes indurated, and apparently cartilaginous, sometimes obstructed by steatoms or calculous concretions at its base; in some instances, contracted. Meckel (Memoires de Berlin, 1756), and Weitbrecht (Petersburgh Commentaries, iv. 263), have found it in a suppurating state. Guattani mentions its being wounded, but that the fatal termination did not take place till after eight years; in another case, recorded in the Journal de Medecine, death followed in eight days.

AOVARA, AVOIRA, *elais*, an African palm, the calyx of which is divided into from three to six pieces; the corolla has six divisions, and there are six stamina on the male flowers. A superior ovary is surmounted by a thick style, terminated by three stigmata in the female. The fruit is an oval nut, somewhat triangular, enveloped by a fibrous parenchyma, unilocular, with three obscure holes at its base.

There are several species, but the botanical characters have not been sufficiently attended to. The chief, according to Aublet, is the largest palm that grows in Guiana. Within the external covering of the nut is a yellow, unctuous, substance, eaten by apes, cows, and other animals. After macerating in water for some time, an oil may be expressed from it, used for seasoning food, in medicine, and for burning. From the almond a species of butter of a good flavour, and highly emollient, may be extracted, called *quioquio* or *thiothio;* and the oil is styled palm oil. The nut of the avoira has been confounded with the cocoa nut; and at Cayenne the cocoa nut of Guinea is styled the avoira canne.

APARINE.—Page 146, col. 1, line 23; "*galium aparine* Lin. Sp. Pl. 157."—It is a rough, slender, annual plant, adhering to and spreading over bushes, and sticking to whatever it meets. The stalks are square, brittle, and joined; the leaves oblong and narrow; the flowers white, followed by little round burs.

APHONIA ATONICA.—Page 148, col. 1, line 20; "*ligaments from the artænoid to the thyroid cartilages.*"—Even in this extensive list of the causes of a disease, which, except as a symptom, is peculiarly rare, we perceive some circumstances omitted. Aphonia sometimes

arises from a shock, independent of any wound, which appears, as we have seen, to destroy the irritability of muscular fibres. It has arisen from deleterious exhalations, from eating mushrooms, and, in a singular case recorded in Hufeland's Annals, by repeatedly rubbing the wound, made by a poisonous insect, with saliva, for which purpose the finger was successively applied to the mouth. The disease sometimes attacks suddenly, and it is said to be occasionally periodical. See Vox.

Aphthæ.—Page 149, col. 2, line 26; *"and strength."*—Though aphthæ are undoubtedly sometimes epidemic, yet the fever has no regular type, nor does the appearance or the recession of the eruption preserve any fixed period. In one epidemic, where it attacked almost every boy in a very large school, the fever was so inconsiderable as to be unobserved; and in children where it is more obvious it has not a distinct form. It is an affection of the internal membrane of the mouth; and Sidren, in the Upsal Transactions, had long before the time of J. Hunter pronounced aphthæ to be papulous eruptions, not ulcerations. Stoll thinks that aphthous eruptions are connected with the miliary; but they are communicated from the fauces to the œsophagus, from thence to the stomach, the small and large intestines in succession, appearing at last at the anus, and never attack the skin. When a symptom in the end of long continued fevers, the course appears to be in an opposite direction, if the observation of Stoll is well founded, that the surest presage of aphthæ is a sense of heat and pain at the pit of the stomach. From their extending through the alimentary canal, children in whom aphthæ appear in the throat must be carefully attended to, as gangrene often suddenly comes on; and though the papulæ may have disappeared in the fauces, yet the remaining inflammation will point out the progress of the putrid state, which the appearance of the stools will confirm. The disease has been attributed to the filthy custom of old nurses tasting the pap, and it is certainly more common among children who do not suck.

Among the applications, strong astringents and escharotics are often recommended, and we perceive, in one author, the red arsenic, with alum, lime and galls, advised. In general, if the astringents are active they separate the sloughs, which return again in a greater degree, or produce more considerable inflammation. The more emollient and refrigerant applications are preferable, unless where there is considerable relaxation, and a tendency to putrescency, and in these cases the bark, with the mineral acids, must be freely employed. A weak solution of the white vitriol is recommended in Selle's collection; but it is an old remedy taken from Sala. See Ketlaer de Apthis Nostratibus Leidæ; Memoires de la Societé Royale de Medecine, tom. viii; Stoll's Prælectiones, ii. 436, and Ratio Medendi, ii. 167; Columbier dans l'Histoire de la Societé de Medecine, 1789.

Apium.—Page 149, col. 2, line 57; *"Apium graveolens* Lin. Sp. Pl. 379."—Smallage is an umbelliferous plant with bright green, winged leaves, cut slightly into three-winged portions, serrated at the edges; the seeds are small, oval, plano-convex, furrowed, of a pale brown or ash colour; the root long, about the thickness of a finger, with a number of fibres of a pale yellowish colour on the outside, and white within, biennial, flowering in August, grows wild in moist places, and is frequently cultivated in gardens.

Apoplexia suffocata.—Page 152, col. 2, line 17; *"the gout, &c."*—In some cases, as in palsy, though the heat and the power of motion are lost, the sensation remains; the respiration is not always difficult (Morgagni de Sedibus, &c. iii. 20), but the natural functions are generally injured. It is preceded often by headachs, loss of memory, dimness of sight (Morgagni, l. c. iii. 8.), double vision, flashes of light before the eyes, particularly at night (Lancisi de Subitanea, morte, 69.), in one instance by an excruciating pain of the arm. It sometimes seems to be epidemic (Baglivi), and it appeared strikingly so at Rome in the years 1705 and 1706 (Mistichelli Trattato dell' Apoplessia); but this probably depends rather on the air and the dampness of the season, for it is observed to be more common in rainy seasons and in winter (Lancisi, 69, 90; Morgagni, ii. 3). Its appearance is sometimes periodical. Quarin thinks it dangerous if the patient puts his hand to one part of his head; and that sweats, if they do not relieve, are often alarming symptoms. Morgagni adds, that a fever coming on in sanguineous apoplexy is rather injurious than beneficial.

Among the remote causes, as just mentioned, the state of the air must be considered; to cold and moisture Morgagni adds a sudden change from cold to warm, from the expansion of the blood, a cause admitted too inconsiderately in the article, for we have shown that the blood is by no means an expansile fluid, and that the swelling of the external vessels is rather from the relaxation of the skin than from the expansion of their contents. During the prevalence of the scirocco, which we have endeavoured to show consists of a large proportion of hydrogen, we are informed by Mistichelli that apoplexies are frequent.

Alberti has observed, that learned men are more subject to apoplexy than others, and the predisposition to apoplexy is often induced by intense study, perhaps combined with inactivity, and its consequences, bilious accumulations. Diseases of the stomach and bowels are frequent, remote causes; and repletion is stated, by Dr. Fothergill (Medical Observations and Inquiries), to produce it by its pressure on the aorta, more probably by a greater degree of that cause, whatever it may be, which disposes to sleep after meals.

We have not sufficiently insisted, in the article, on the effects of repelled discharges, or repelled gout, in inducing apoplexy. Of the hæmorrhages, the suppression of those of the nose and of the hæmorrhoidal vessels is apparently most dangerous. The stoppage of the lochia and the menses has often induced the disease, as well as the omission of bleeding, when from frequent and repeated practice it has become habitual. Drying up old ulcers, repelling the plica polonica, or the itch, and checking every habitual evacuation, have had a similar effect. Gout, we think, is a deposition on the joints, which, when regular, is highly salutary to the general constitution (see Arthritis). Repelling it by cold has certainly induced apoplexy, and we suspect that every topical application which checks the natural progress to be equally dangerous. It is not easy to say how rheumatism repelled, or spontaneously changing

its seat, can have the same effect, unless it was gout in disguise; but we cannot reject the authority of Plenciz in the Acta et Observata Medica 156, and of Weikard Vermische Schriften, i. 91, unless a fact recorded by Stoll be admitted as an explanation. He found (Ratio Medendi, iii. 133) that, in a case of this kind, an effusion of serum had taken place in the brain.

Among the causes more distant in their effects, we may mention those which by pressure or other means influence the state of the circulation in the brain. Diseases of the lungs, the kidneys, bilious accumulations, distension of the urinary or gall bladder, gall stones, schirri of the different viscera impeding the circulation in the descending aorta, or in the neck, preventing the return of the blood in the jugular veins, and obstructions in the external carotid, are remote causes of this disease. The most frequent, however, and the most important, are the affections of the head. Blows and depressions of the cranium, concussions of the brain from any violent shock, bony concretions in the sinuses, and other vessels of the brain, exostoses of the cranium, schirrous glands, fungous and polypous excrescences, vomicæ, steatoms, ulcers, hydatids, effusions of blood, or a serous fluid, in different parts of the brain, the ventricles, and the cavity of the spine, sometimes an enlargement only of the vessels have been found, on dissection, to have induced apoplexy. For these causes no authorities need be adduced; but when we find the only change to be a peculiarly florid fluid blood (Reil Memorabilia Clinica, vol. 1. Fasc. 1.; Vieussen's Histoire des Maladies internes); the vessels of the brain empty (Pizzold de Apoplexia, Gotting. 1783); the brain unusually soft on one side, mixed with a sanious fluid (Morgagni de Sedibus, v. 6); the brain itself peculiarly soft and flaccid (Lancisi de Subitanea, morte 120, Morgagni, l. c. iv.), it is necessary to add the names of respectable anatomists, as practitioners are not in general aware of the disease proceeding from such sources. The brain itself has been sometimes found schirrous, almost cartilaginous (Histoire de la Societé de Montpelier); swelled and indurated; and the pia mater considerably thickened.

One of the more immediate causes assigned by Bosch is a nervous spasm, a solecism apparently in pathology. Another author, in a work appropriately entitled "Paradoxa," attributes it to an obstruction of the influx of the spirits into the brain: from whence should they come? Morgagni, with sounder judgment and more acute observation, remarks, that a predisposition to apoplexy takes place if the vertebral artery arise from the arch of the aorta (iii. 23); if the brain is unusually solid, resisting the impulse of the blood, which is consequently thrown on the more yielding cerebellum (iii. 32); and in proportion to the brain having a less relative space (lxii. 13).

The prophylaxis depends on topical stimuli and evacuations, on free discharges from the bowels, regular exercise, free air, and a temperate diet. A seton, or a perpetual blister, are the best evacuants, and the discharge should be from the neck or vertex, certainly as near to the head as possible. One of the collections we have lately reprobated speaks of the effects of a good beating, which we dare not recommend. As a laxative the unbruised mustard-seed has been highly commended.

Besides the remedies mentioned in the article, arteriotomy has been thought highly useful; and an author of the school of Montpelier has proposed tying the carotid. A refinement on arteriotomy has been suggested, viz. at the same time opening the jugular vein on the opposite side; but it must be recollected that while apoplexy arises from such different causes, while the shades between the sanguineous and serous are so imperceptible, we must be cautious of acting with indiscriminate rashness, unless the nature of the disease is clear. If the patient is young, strong, and robust; if the neck is short, the face full, and the disease has followed violent blows, or peculiarly active exertions; we may confidently employ evacuations in all their rigour: but in proportion as we recede from such a pointed case, we must proceed with more deliberation and more careful discrimination. Portal, however, recommends bleeding, even in the serous apoplexy, while Fothergill seems to think it always injurious. Cold applications to the head, which have been recommended, must also be conducted with caution. Quarin thinks that sometimes they fix the disease, and more certainly produce palsy: they are supposed to be more efficacious if the patient is seated in the warm-bath. Burning with moxa, or with a hot iron, has been sometimes advised, and, as a means of inducing artificial ulcers, this, as well as setons and blisters, may be useful. When from injuries in the brain, the trepan is the only effectual remedy.

After the more immediate danger is passed, the arnica is recommended by Quarin, and the chalybeate mineral waters, especially those which are slightly laxative, by Thillenius and others. The laxatives and the topical evacuations must be continued.

Add to the references Wepfer Observationes et Observationes Anatomicæ de Apoplexia; Piso de Morbis ex Serosa Colluvie; Portal Memoires de Paris; Hoffmann, Opera Supplementum, ii. 2; De Haen de Apoplexia et Ratio Medendi, iv. 5; Ferrara delle Malattie Subitanee; Hueber de Casibus improvisis apud Eyerel Dissertationes; Stoll, iv. 14.

Apothecarius. An apothecary, in its original meaning a dispenser of medicines; but within these last fifty years the education of the apothecaries has been liberal, and they now form a highly respectable class of practitioners. We can say, with great justice, that we know among them men whose discernment, judgment, and knowledge of their profession would not disgrace a higher rank. We have indeed spoken with some contempt of those who step from the counter into the chariot, and chiefly for this reason, that the routine of practice, imbibed from their professional education, does not adapt them for those extensive and scientific views which we seek for in a physician; and the time spent in a disgraceful, sometimes a servile, apprenticeship, is necessary for those branches of knowledge which a man of science would blush to be ignorant of. We must recollect also, that the first men of this class are not anxious to raise a step. Diffidence is the constant companion of knowledge; for he who is unacquainted with the various sources of error cannot be conscious that they exist. Those who have anxiously claimed the honours of a degree which is most disgracefully sold with little inquiry, are men whose softer

manners have made them favourites with the ladies, whose connections have fixed them in a superior circle, often those whose confidence is overbearing and too powerful for more modest merit. To speak more particularly from ourselves might be invidious, and we shall, though unused to copy, transcribe the opinions of the modest, humane, and enlightened Dr. Percival.

"I. In the present state of physic, in this country, where the profession is properly divided into three distinct branches, a connection peculiarly intimate subsists between the physician and the apothecary; and various obligations necessarily result from it. On the knowledge, skill, and fidelity of the apothecary depend, in a very considerable degree, the reputation, the success, and usefulness of the physician. As these qualities, therefore, justly claim his attention and encouragement, the possessor of them merits his respect and patronage.

"II. The apothecary is, in almost every instance, the præcursor of the physician; and being acquainted with the rise and progress of the disease, with the hereditary constitution, habits, and disposition of the patient, he may furnish very important information. It is in general, therefore, expedient, and where health or life are at stake expediency becomes a moral duty, to confer with the apothecary, before any decisive plan of treatment is adopted, to hear his account of the malady, of the remedies which have been administered, of the effects produced by them, and of his whole experience concerning the juvantia and lœdentia in the case. Nor should the future attendance of the apothecary be superseded by the physician: for if he be a man of honour, judgment, and propriety of behaviour, he will be a most valuable coadjutor through the whole course of the disorder, by his attention to varying symptoms; by the enforcement of medical directions; by obviating misapprehensions in the patient, or his family; by strengthening the authority of the physician; and by being at all times an easy and friendly medium of communication. To subserve these important purposes, the physician should occasionally make his visits in conjunction with the apothecary, regulating by circumstances the frequency of such interviews. If often repeated little substantial aid can be expected from the apothecary, because he will have no intelligence to offer which does not fall under the observation of the physician himself: nor any opportunity of executing his peculiar trust, without becoming burdensome to the patient by multiplied calls, and unseasonable assiduity.

"III. This amicable intercourse and co-operation of the physician and apothecary, if conducted with the decorum and attention to etiquette, which should always be steadily observed by professional men, will add to the authority of the one, to the respectability of the other, and to the usefulness of both. The patient will find himself the object of watchful and unremitting care, and will experience that he is connected with his physician, not only personally, but by a sedulous representative and coadjutor. The apothecary will regard the free communication of the physician as a privilege and mean of improvement; he will have a deeper interest in the success of the curative plans pursued; and his honour and reputation will be directly involved in the purity and excellence of the medicines dispensed, and in the skill and care with which they are compounded.

"The duty and responsibility of the physician, however, are so intimately connected with these points, that no dependance on the probity of the apothecary should prevent the occasional inspection of the drugs which he prescribes. In London the law not only authorises, but enjoins a stated examination of the simple and compound medicines kept in the shops. And the policy that is just and reasonable in the metropolis, must be proportionally so in every provincial town throughout the kingdom. Nor will any respectable apothecary object to this necessary office, when performed with delicacy and at seasonable times; since his reputation and emolument will be increased by it, probably in the exact ratio of professional merit and integrity hereby discovered.

"IV. When a physician is called to visit a patient in the country, he should not only be minute in his directions, but should communicate to the apothecary the particular view which he takes of the case; that the indications of cure may be afterwards pursued with precision and steadiness; and that the apothecary may use the discretionary power committed to him, with as little deviation as possible from the general plan prescribed. To so valuable a class of men as the country apothecaries great attention and respect is due. And as they are the guardians of health through large districts, no opportunities should be neglected of promoting their improvement, or contributing to their stock of knowledge, either by the loan of books, the direction of their studies, or by unreserved information on medical subjects. When such occasions present themselves, the maxim of our judicious poet is strictly true,

—— *The worst avarice is that of sense.* POPE.

For practical improvements usually originate in towns, and often remain unknown or disregarded in situations where gentlemen of the faculty have little intercourse, and where sufficient authority is wanting to sanction innovation.

"V. It has been observed, by a political and moral writer of great authority (Smith's Wealth of Nations, book i. chap. 10), that 'apothecaries' profit is become a bye-word, denoting something uncommonly extravagant. This great apparent profit is frequently no more than the reasonable wages of labour. The skill of an apothecary is a much nicer and more delicate matter than that of any artificer whatever; and the trust which is reposed in him is of much greater importance. He is the physician of the poor in all cases, and of the rich when the distress or danger is not very great. His reward, therefore, ought to be suitable to his skill and his trust, and it arises generally from the price at which he sells his drugs. But the whole drugs which the best employed apothecary, in a large market town, will sell in a year, may not perhaps cost him above thirty or forty pounds. Though he should sell them, therefore, for three or four hundred, or a thousand per cent. profit, this may frequently be no more than the reasonable wages of his labour charged, in the only way in which he can charge them, upon the price of his drugs.' The statement here given exceeds the emoluments of the generality of apo-

thecaries in country districts. And a physician, who knows the education, skill, and persevering attention, as well as the sacrifice of ease, health, and sometimes even of life, which this profession requires, should regard it as a duty not to withdraw, from those who exercise it, any sources of reasonable profit, or honourable means of advancement in fortune. Two practices prevail in some places injurious to the interest of this branch of the faculty, and which ought to be discouraged. One consists in suffering prescriptions to be sent to the druggist, for the sake of a small saving in expence. The other in receiving an annual stipend, usually degrading in its amount and in the services it imposes, for being consulted on the slighter indispositions to which all families are incident, and which properly fall within the province of the apothecary."

AQUA.—Page 156, col. 1, line 64; "*the bad effects ascribed to them.*"—The assertion at the conclusion of this paragraph is too hasty. Since it was written, we have had reason to conclude that waters peculiarly hard, or rather loaded with a large proportion of selenite, have been highly injurious in inducing constipation. The other supposed dangerous impregnations of water in a late publication are wholly imaginary.

When we speak of the effects of water in diluting the fluids, we must be understood as meaning watery fluids; for it has appeared, that whatever is not subjected to the digestive powers will not form a portion of the animal mixt. Water drank, without addition, is poured out almost unchanged by the kidneys or the exhalents of the skin. The contents of the stomach and intestines, if we except the bile and the viscid mucus, it very certainly dilutes, and whatever fluids are miscible with water are, by its means, carried over the pylorus.

Cold water, when drank, is grateful to the stomach, and the well water, as containing a portion of air, probably common air, is more brisk and pleasant than any other. It often, from its stimulus, proves antiemetic, though a little burnt bread added seems to improve its powers by adding to its relish. Its coldness rapidly abstracts heat, and brings the temperature of the body to that standard which admits more effectually of the discharge of sweat; and, when carried farther, probably to that salutary diapnoe on which our health seems greatly to depend.

The topical and partial application of cold water is highly useful in hæmorrhages, particularly hæmorrhages of the nose, of the bladder, and hæmorrhoidal vessels. It relieves rheumatic pains, chiefly those which arise from a paralytic state of the vessels, and which we style chronic rheumatism; inflammations from blows and strains. The effects of cold water in these cases are greatly increased by its momentum from the mouth of a pump, or when poured on the part from a height. In burns, and some cases of erysipelas, the continued and repeated application of the coldest water is necessary; but, if the inflammation is considerable, and in erysipelas if attended with fever, cold applications are highly dangerous, often inducing gangrene. Cold water, particularly water artificially cooled, is of the greatest utility in reducing herniæ, indeed all swellings connected with inflammation; and, in every instance almost, except erysipelatous swellings, ice is superior in its powers to common water. For the use of cold water in gout, see ARTHRITIS.

We need not add, that cold water, drank when the body is heated, will be highly injurious, and that ices, as more powerful, will be more dangerous. The records of medicine are filled with cases where internal inflammations, inflammatory and low fevers, have been induced by the indiscreet use of this seductive draught; nor need we add to the number, or select any authorities. Daily experience furnishes sufficiently numerous instances. See BATHING.

On the subject of common water, see Hoffmann de Aqua Medicina Universali, oper. tom. v.; et De Aquæ Natura de Virtute in Medendo: Sancassani Epistolæ de Aquæ Frigidæ Utilitate; Lombard Opuscules de Chirurgerie sur les Proprietés de l'eau froide, &c.; Marsigli della Potione Aquatica; Kirkland on the Cure of those Disorders which are the Causes of Fever; Hancock's Febrifugium Magnum; Smith's Curiosities of common Water; Arthritifugum Magnum, a physical Discourse on the wonderful Virtues of cold Water, translated from the Latin of Vander Heyden of Ghent, first published in French, 1644, in Latin in 1649, and in Italian ap. Sancassani's Diluzidazione Fisicho Mediche.

ARANEA.—Page 167, col 1, line 64; "*nature of the medicine was concealed.*"—The English spiders are certainly not poisonous (Lister Historia Animalium Angliæ), though Borelli informs us, that death ensued when one of the Italian species was swallowed. The bite of the large black spider at Madagascar brings on a coldness and rigor, and is sometimes fatal. The story of the poison of the tarantula, and its being cured by music, is an idle fable. See TARANTULA and TARANTISMUS.

ARBOR VITÆ.—The ramifications from the trunk of the medullary substance of the cerebellum. In botany the term is applied to the *thuya occidentalis* Lin. Sp. Pl. 1421. The leaves and wood of this tree were formerly esteemed as sudorifics and expectorants, employed in hectics, fevers, rheumatisms, and dropsies; but they are now neglected.

ARBUSTIVA.—Page 168, col. 1, line 2; "*plants of the shrubby kind.*"—The thirty-ninth order in the natural system of Linnæus, according to the former editions; but the genera, myrhus, eugenia, psidium, philadelphus, and caryophyllus, are now included, with some others, under the appellation of hesperideæ. The former title was highly improper, as the limits between shrubs and plants on one hand, and trees on the other, were by no means accurately defined.

Page 168, col. 2, line 27. See VIRES NATURÆ, also STAHLIAN SYSTEM.

ARECA.—Page 170, col. 1, line 11; "*the species of cocoa nuts.*"—The areca is a genus of palm, whose flowers are monoicous, disposed in panicles and inclosed in a monophyllous spatha. Each flower consists of a calyx with three-pointed coriaceous divisions, and of a corolla with three petals, exactly resembling the calyx,

and equally permanent. The male flowers have from six to nine stamina, not projecting, and the females a superior ovary with three pistils. The former are placed in the superior portion of the panicle; the latter at the base. At the centre of the Indian areca, *a. catechu* Lin., there is a bud styled a cabbage, seldom eaten on account of its austerity. The areca alone is not pleasant, for the same reason; but the sharpness is moderated by the betel leaf (see BETLUM), in which, when cut in slices, and sprinkled with lime, it is enfolded. The saliva, by chewing it, assumes a purple hue; but the first secretion is carefully spit out; and with it a large proportion of the lime is discharged. Its effects are apparently the same as those of tobacco, giving ease and serenity. The Hindoos also contend that it strengthens the stomach and improves the appetite. It is moistened on the coast of Coromandel with rose water, mixed with catechu; sometimes cardamoms or other aromatics are added; for the custom varies in different parts of the peninsula. It generally produces caries in the teeth at an early age, and is supposed to be injurious to hectical and asthmatic patients. The fœcula of the areca americana in the following paragraph is prepared from the nut.

ARENGA. A palm discovered by La Billerdiere in the Molucca islands, in his voyage in search of the unfortunate Perouse. The tree is monoicous, rising to the height of fifty feet; the leaves winged, from fifteen to eighteen feet long; their folioles dentelated at their extremity, with two appendices at their base. The spatha is of a single piece, its spadix much branched. The male flowers have a calyx of three folioles, a corolla of three petals, shorter than the calyx, and from fifty to sixty stamina. The female flowers have a similar calyx and corolla, an oval ovary terminated by three sharp styles. The fruit, a. drupa, is almost spherical, vacciform, with three compartments and three seeds, having on the top three protuberances. The seeds, convex on the external and depressed on the internal part, have a lateral embryo situated in a particular cavity.

This palm, by incision, affords sugar during one half of the year, not unlike newly-prepared chocolate. The kernel of the young fruits may be prepared so as to afford excellent comfits, and, from the trunk, a sago of a superior quality is produced. The parenchema is apparently poisonous, producing a violent and almost incessant itching on the skin, with very sharp pains. This palm is figured by Rumphius under the appellation gornuti, and has been confounded by Loueiro with the borassus.

ARGENTUM.—Page 170, col. 2, line 24; "*became deleterious.*"—Silver has neither taste nor smell; the colour is a pure white, without any admixture of either blue or purple. Its specific gravity is increased by hammering; but not in so great a degree as some other metals. It is soft, elastic, and sonorous; in ductility only inferior to gold, and it may be drawn to a wire, if only slightly alloyed with copper, less than a fine hair. A wire 0.1 of an inch in diameter will support two hundred and forty pounds.

When free from alloy it melts in a heat somewhat inferior to a white, and appears most strikingly brilliant; but, when cold, becomes a clean dead white. If cooled hastily it shoots up in irregular projections, with some force, but does not oxidate with heat alone, though, when intensely heated with the access of air, the support on which it stands gradually becomes yellow. In porcelain spheres also the silver oxidates, by the oxygen penetrating through the pores; but the permanence of the oxide is owing to its union with the earth, which it covers with a glaze, since it is otherwise reduced by heat alone. Under a blow-pipe, or in the focus of a powerful lens or mirror, it rises in fumes. The oxide, when pure, furnished by precipitation from nitrats, is colourless, insoluble in water, and without taste. Silver will tarnish only, not rust, though, when long exposed in the air of towns, this discoloration becomes a crust, and is found not to be an oxide but a sulphuret. In water also, impregnated with animal or vegetable matter, silver becomes coloured and brittle (Philosophical Transactions, vol. 88). It does not burn in fire whatever be the temperature, but only in the galvanic circle.

The sulphuric acid dissolves silver only at a boiling heat, and if in the proportion of four to one of the metal, the solution is clear and dense. If in a less proportion, the product is a white powder. The solution requires an excess of acid, is very styptic, and shoots on evaporation into white, brilliant, needle-like crystals. The sulphureous acid combines only with its oxide, and crystalises spontaneously in small, pearly grains, unaltered by light.

The best solvent of silver is the strong nitric acid, diluted with from two to four parts of water. The nitrous gas separated appears in orange-coloured fumes; that retained gives the solution a light blue green colour. Copper increases the blueness, and the colour remains after the solution is cold and saturated, which is not the case when no copper is present. If it contain gold, it is left, after the solution, in the form of a black powder, and if the acid contain any sulphuric or muriatic acid the solution is milky. Liquid nitrat of silver is styptic to the taste, even when greatly diluted, and highly so in its concentrated state. It blackens, very permanently, all animal substances when they have been exposed to the light, owing to a partial reduction of the metal, and crystalises in six-sided or square thin plates, often arranged like the sticks of a fan. The salt is not deliquescent, and soluble in four parts of cold, much less of boiling, water, containing little water of crystalisation; for it melts when moderately heated, and loses very little by being kept long in that state. By cooling it becomes a dark grey mass, which, when redissolved in water, will again crystalise. This is the LUNAR CAUSTIC or LAPIS INFERNALIS, usually made by evaporating the nitrat of silver to a proper consistence, and cooling the residue in suitable moulds, of the size of common pencils. When one of these little cylinders is broke across, the texture appears radiated. Light will not decompose a solution of the nitrat of silver when the bottle is full; but if the moisture be evaporated a black powder is deposited, which is the silver in nearly its metallic state. If heated also beyond the state of lunar caustic, globules of reduced silver are found in the mass. The salt, when decomposed, yields nitrous gas, oxygen, with a little azote, and contains in one hundred parts sixty-

four of the metal, six of the oxygen, and thirty of nitrous acid. About thirteen drams of lunar caustic are to be procured from pure, and ten or eleven only from standard, silver.

Nitrat of silver detonates with phosphorus most violently and dangerously when struck with a hammer, and the silver is suddenly reduced. If a stick of phosphorus also is put into a very dilute solution of nitrat of silver, the whole of the metal will gradually precipitate on the phosphorus in the form of dendrites. The same salt is rapidly reduced by streams of hydrogen gas; by boiling water; the sun's rays, when exposed to them on charcoal, which had previously imbibed so much water as to sink in it; mercury, by which the arbor dianæ is formed; the fixed alkalis; alkaline earths, and carbonated ammonia: the precipitate is darker in proportion to the quantity of carbone which the ammonia contains. A subnitrat of silver is this salt, with an excess of acid (Proust in the Journal de Physique, vol. 62). Mr. Keir found that silver might be separated from iron, copper, lead, or gold, by the nitro-sulphurie acid, made by dissolving in eight or ten parts of sulphuric acid one part of nitre.

We have enlarged on the properties of the nitrat of silver as it is used both in medicine and surgery; but must be more concise on the other properties of the metal, except those of the muriat of silver; a preparation of much importance in the analysis of mineral waters. Muriatic acid seems to corrode rather than dissolve the metal; for it forms an insoluble powder, while the remaining acid does not contain an atom of the metal (Proust, l. c.). It is generally made by adding any alkaline or earthy muriat to any salt of silver, except the prussiat. The muriat of silver (luna cornea; because it hardens, like horn, when cooled after melting) is so insoluble that the smallest quantity of muriatic acid may be detected in water by adding the nitrat of this metal. This salt retains the last portions of its water with great obstinacy, and cannot be thoroughly dried without remaining at the heat of 112° for some time. A strong red heat volatilises it in dense, white fumes. One hundred grains of dry luna cornea contain 17.615 of the acid, 75.235 of silver, and 7.15 of oxygen.

Muriat of silver dissolves only in the muriatic acid, and it may thus be obtained in octoedral crystals. Luna cornea is soluble in pure ammonia without decomposition, and when the solution is evaporated the metal is left in small scales, resembling the incrustations of the native muriat; but, when the solution is evaporated by artificial heat, the first crystals are the fulminating oxide, and will detonate with violence, if but slightly shaken. Indeed the greatest caution is requisite in applying artificial heat to any mixture of ammonia and oxide of silver free from carbonic acid gas. As the other preparations of silver are not connected with any part of our subject, we must not enlarge farther on its chemical properties.

ARGENTUM.—Page 171, col. 1, line 56; "*and to water as* 13.5681 *to* 1.0000."—Mercury is always fluid in this climate, and is equally without smell or taste. It boils at 660°; and when the galvanic fluid passes into it from a powerful apparatus disperses in beautiful brilliant, luminous stars. It expands with considerable regularity by heat, till the temperature has arisen to 220°, then more irregularly, but not so as to lessen its utility in the construction of THERMOMETERS, q. v., as in these higher degrees minute accuracy is of less importance. By agitation mercury assumes the appearance of a black powder, which is said to contain 0.04 of oxygen; but it has not been correctly ascertained whether mercury simply divided will not resemble this seeming oxide. It is not easy to say from whence the oxygen should come in a closed bottle; but the experiment will not succeed unless the phial is only in part full, and it succeeds better if some water is added: in either case a portion of oxygen may be obtained. Water itself has no action on mercury, so that the metallic taste in the water boiled with mercury, from which it acquires a power of destroying insects, is probably derived from its alloy.

We have scarcely any thing farther to add on the chemical relations of mercury, as these are connected with the pharmaceutical remarks, or with the more economical preparation of different medicines. The proportions of oxygen and acid in the muriated mercury, as ascertained by Mr. Chevenix, are, we perceive, different from those assigned in the article. A hundred parts of the corrosive muriat contain of mercury 69.7, oxygen 12.3, acid 18. One hundred parts of calomel contain 79 of mercury, 9.5 of oxygen, and 11.5 of acid. Mr. Chevenix has shown that the corrosive sublimate is not an oxymuriat of mercury, but a muriat of mercury highly oxidated; in other words, the oxygen is combined with the neutral, not with the acid, previous to its being neutralised. In the course of these experiments he discovered a real oxymuriat. If a current of oxymuriatic gas be passed through water, containing the red oxide of mercury, the colour of the latter is changed to a dark brown. From the liquor evaporated nearly to dryness a mixed salt was obtained, consisting partly of corrosive muriat, and partly of another salt, which crystalised somewhat later, but which, when it was again dissolved and crystalised, appeared nearly pure. Its qualities have not been examined, but on adding sulphuric acid it yields vapours of the oxymuriatic.

ARILLUS. *Calyptra, theca* of Scopoli. The proper interior covering of a seed, which separates spontaneously on drying, and, in some seeds, its place is supplied by a dry epidermis. It is conspicuous in the jessamine, the cynoglossum, ditamnus, euonymus, coffea, &c. Each seed of the cynoglossum is enveloped in four arilli, and in this, according to Linnæus, the essence of the genus consists.

The arillus is sometimes succulent, *baccatus*, as in the euonymus; *cartilaginous*, as in the African diosma; *coloured*, as in the celastrus; *elastic*, as in the fraxinella; *rough and knotty*, as in the hound's-tongue. The existence of an arillus does not prevent the application of the epithet *nuda*, which relates to the absence of a pericarpium exclusively.

ARISTA, (from *areo, to dry*), the horn or sharp beard issuing from the husk or scaly flower-cup of the grasses. (See GRAMINA.) The aristæ are *divaricatæ; dorsales; erectæ; filiformes; glutinosæ; geniculatæ; læves; lunatæ; longissimæ; patulæ; pilosæ; plumosæ; recurvæ;*

retortæ, and *reflexo-retortæ*; *sanguineæ*; *cetaceæ*; *terminales*; *tortiles*; *villosæ*, and *uncinatæ*.

ARISTOLOCHIA.—Page 180, col. 1, line 6; "*the creeping sort are the best.*"—Birthworth is a plant with heart-shaped leaves, set alternately on the stalks, from the bosoms of which arise irregular, tubulous, purplish flowers, with a wide mouth, whose lower part is produced with a long flap like a tongue: the seed-vessel is large, roundish, and divided into six cells.

The aristolochia tenuis has indented leaves, set on pedicles, and bushy roots, composed of a number of fibres issuing from one head: the stalks are weak and trailing; the flowers solitary. The *a. longa* hath large tap roots, like carrots; the branches trailing, a little more than a foot in length. The flowers, like the other species, come from the wings of the leaves, similar in colour, and succeeded by seed-vessels resembling those of the a. tenuis. The *a. Indica* Lin. Sp. Pl. 1362, hath long trailing branches, which climb on the neighbouring plants, and often rise to a considerable height: the flowers are in small clusters on the upper part of the stalks, which are of a dark, purple colour. It is styled the contrayerva of Jamaica, and used for the same purposes.

When we reflect on the effects of the serpentaria, and of the a. indica, it appears probable that this plant has been too much neglected. The serpentary is disagreeable from its better pungency, which the roots of the a. tenuis possess in an inconsiderable degree, so that they may be continued for a longer time. If also, as we found reason to suspect, the serpentaria is useful in bringing atonic gout to its more regular inflammatory stage, we shall not wholly despise a species of the same genus.

ARMA, in botany, one of the different fulcra of plants, consisting of aculei, spinæ, furci, and stimuli. See PLANTA.

ARMENIACA MALA.—Page 180, col, 2, line 4; "*called also præcocia.*"—*Prunus armeniaca* Lin. Sp. Pl. 679.

ARNICA MONTANA.—Page 180, col. 2, line 37; "*Compositæ discoideæ Corymbyferæ* of Jussieu."—The arnica montana hath oval-pointed ribbed leaves, like those of the plantain, set in pairs on the stalk, with oblong roots, which spread far under the surface, and put out many entire oval leaves, from between which the flower stems arise, growing about a foot and a half in length. The top is terminated by a compound flower, resembling the dandelion, succeeded by oblong seeds, covered with down. This down is found also in the flowers, and consequently, when boiled, they should be inclosed in a piece of muslin to prevent its irritating the throat. There is another species, the *a. scorpoides* Lin. Sp. Pl. 12, which grows in Bohemia and Siberia, the roots of which are jointed, and divide into many irregular, fleshy offsets, variously contorted, which have led the imagination to fancy that they resembled a scorpion, and were consequently beneficial to those who had been bitten by this animal.

Arnica contains a large proportion of gum and some essential oil; 960 parts yielded 840 of watery and 5 of alcoholic extract: inversely, 270 alcoholic and 540. The root is of the thickness of a quill; externally brown and rough; internally of a dirty white; in taste, like the plant, acrid and bitter, but with less aroma. Authors differ essentially in the part of the plant which they think deserves the preference, so that it is probably of little importance. Though its emetic power is occasionally observed, it is not constant, and the Smoland peasants not only use it as a snuff but smoke it in their pipes. Goats are fond of, though oxen reject, it.

It is an error in the article to attribute its power of obviating the bad effects of bruises to its power of attenuating the blood; for this would be inconsistent with the advantages to be derived from it in hæmorrhages and putrid fevers. We can easily understand, from what has been said of DISCUTIENTS, q. v., that when applied to bruises it must be useful; for, as a narcotic bitter, it must be sedative and astringent, with some acrimony; and we suspect, that from its external utility (Scopoli, Flora Carniolæ, 377), it was first given internally. In the Alpine countries, where it abounds, the dose is regulated by the number of plants. Five is the largest number, cut small and boiled in a pint of ale (De la Marche de Arnicæ usu, p. 16). The same principle seems to have led to its employment in spurious pleurisy, dyspnœa, humoral asthma, and anasarca. Even in inflammation of the lungs, if arising from external violence, it is allowed by Quarin. In infarctions of the spleen, schirrus mammæ, hectics, nephritis calculosa, gout, contractions, in hoarseness and asthma which sometimes supervene on the puerperal state, and in jaundice.

Colin (Observationes Practicæ, iv. 5) mentions its utility in convulsive and spasmodic diseases. In a palsy of the lower limbs from a fall on the back, we observe that Plenck, besides giving it internally, applied a cataplasm of cephalic herbs and flowers of arnica. With the same cataplasm he thinks that he removed a paralysis of the bladder. Materia Medica Chirurgica, 259.

AROMATICA.—Page 181, col. 2, line 17; "*where they are so plentifully produced.*"—The *aromatic powders* of the London and Dublin pharmacopœiæ contain two parts of cinnamon; of ginger, long pepper, and the lesser cardamoms, of each one part. The Edinburgh college omits the pepper, and lessens the proportion of cinnamon. The *aromatic electuary* of Edinburgh is made from their aromatic powder; of Dublin with 6 parts of preserved orange-peel, 1 part of cinnamon, and as much of powdered nutmegs, with one half the proportion of ginger. The aromatic confection of the London college is a more complex formula, made by adding different aromatics, and the compound powder of crabs' claws in a large proportion to an infusion of zedoary. It is a weak, inert form, and may be given without injury in three times the usual doses. Both the London and the Dublin colleges retain the saffron, which only gives a colour, that might be more cheaply supplied.

For the use of aromatics in diet, see CONDIMENTS.

ARQUEBUSADE.—Page 181, col. 2, line 62; "*aqua catapultarum.*"—In Lemery's treatise on drugs the formula of this medicine is long, and crowded with many

ngredients, which will not rise in the distillation directed, after macerating in wine. In general, it may be considered as a spirituous water from plants both stimulant and astringent, consequently well adapted for a discutient. It is apparently prepared with more fidelity in Switzerland than in England; and is an useful remedy in discussing tumours from violent blows, lessening the pain and blackness from contusions, preventing the progress of gangrenes, cleansing and healing gun-shot wounds.

Arsenicum.—Page 182, col. 1, line 36; *"fatty or carbonaceous matter."*—The solution of arsenic is clear and colourless, has a sharp, warm taste, with some stypticity permanent on the tongue, somewhat sweet and exciting nausea. It reddens litmus, but occasions no effervescence with alkali or earth, nor alters the colour of syrup of violets. When slowly evaporated, the crystals have many sides, are long, truncated at both ends, often radiated or feathery. The most regular form is the three-sided pyramid: the crystals exposed to the air fall into a mealy powder. Alcohol dissolves one-eightieth of its weight of white arsenic. The specific gravity of the crystalised arsenic is 3.7; of that vitrified, by sublimation, 5.0. It has by some chemists, according to the principles of the new nomenclature, been styled the arsenious acid; but it is not sufficiently oxidated to be styled an acid, for there are 100 parts of arsenic to 33 of oxygen (Proust). We have said, that simply boiling the alkali and the white arsenic together will scarcely form a neutral, for the oxide is very slightly acid, and requires a farther oxidation before it can be attacked by alkalis. When saturated liquid potash is *digested* with arsenic, what is styled the *liver* of arsenic is produced; a thick, ropy, tenacious fluid, of a strong disagreeable smell, which, on cooling, becomes brittle and hard. The liver is uncrystalisable, but mixes with water. The *arsenical neutral*, first discovered by Macquer, may be readily prepared by melting nitre in a crucible, and adding the arsenic. The mixture deflagrates, the acid of nitre oxidates the arsenic more completely, and the remainder is driven off. In this state the arsenic acid unites with the potash. The same experiment succeeds with natron, if the nitrat of soda is employed. The arsenical ammonia is prepared by distilling arsenic with the ammoniacal nitrat. The process is more difficult; but as the neutral is not employed in medicine, we must not enlarge on it. The union of arsenic with earths forms neutrals little known, but phosphorus combines with it readily; sulphur more so: and the latter is consequently celebrated as a counter poison.

We have said that we never knew any inconvenience arise from arsenic. The language was too positive, for, independent of the dangers resulting from the long use of tonics, we suspect that it has a peculiar narcotic power. We have seen it produce paralytic numbness, and we suspect injure the digestion. These effects are produced, however, only by large doses, and after long continuance. Since the article was printed we have had much experience of the effects of arsenic in intermittent headachs, and have found it very successful For this purpose it need not be long continued, as it removes the disease often within a week, sometimes in three days.

Considerable apprehensions have prevailed in the minds of practitioners respecting the dangers to be dreaded from arsenic. If sprinkled on the hair, applied to eruptions, used as a wash for the itch. (Degner de Dysenteria), drawn up into the nostrils, it is thought to be injurious. It is said, that even the flesh of fowls killed by arsenic has been fatal. In the case recorded by Degner the genital organs were chiefly inflamed; and Morgagni observes (De Sedibus, &c. lix. 4. 10), that the mouth and fauces are principally affected.

To the antidotes of arsenic mentioned we may add vinegar, recommended by some authors, though its efficacy is denied by others; milk (Morgagni, l. c. 6, 7, 11); oil of aniseseed, and ink (Navier): miliary eruptions have been found salutary.

Arsenic acid was first prepared by Scheele; but his process was operose, and a readier method is described by Dr. Thompson in his chemistry. Two parts of muriatic acid of the gravity of 1.2 are to be mixed, in a crucible, with eight parts of white oxide of arsenic, and twenty-four parts of nitric acid of the specific gravity of 1.25. These are evaporated to dryness, and the mass exposed to a slight red heat. The proportions of the acid are of little importance. If too small, the oxide flies off; if too large, the superfluous acid.

Arsenic acid has little taste till it is dissolved in water, when it is very sour. Its specific gravity, when dry, is 3.39. It is much more fixed than the oxide, or any of its preparations, but in a high temperature it is partly oxidated, and a portion of the white arsenic sublimes; when long heated in a glass retort, the vessel is so much corroded as when cold to crumble between the fingers. One hundred parts of reguline arsenic require 33 of oxygen to reduce them to the state of an oxide, and 20 more to acidify them. If the vapour of oxygenated muriatic acid be received in a vessel, containing white arsenic and water, it will be absorbed, and the arsenic dissolved, not uniformly, but forming two liquid strata, which do not mix. The heaviest is a combination of muriatic acid, with arsenic highly oxidated, but not sufficient to render it acid, called *butter of arsenic;* the lighter is the acid of arsenic, with a portion of the muriatic acid. The fumes of the butter are pungent, like the sulphureous acid. A lighter, more liquid, butter is styled the *oil of arsenic*; but this subject, though curious, must not detain us, since these preparations have not been applied to medical purposes.

Arsenicum tartarisatum.—Mr. Sherwin recommends this neutral (in the Memoirs of the Medical Society, vol. 2) as a diuretic, when used externally. Two ounces of arsenic, with the same quantity of crystals of tartar, are boiled together in a pint of water for half an hour, the solution evaporated and crystalised. On what chemical principle this union of an acid with an acid was suggested we know not. It is not probable that the arsenic could decompose the tartareous acid, and thus be more fully oxidated, or that the oxide could decompose the tartarised neutral. One grain, however, of the salt, rubbed into the hands, at night, is said to have increased the flow of urine; and one sixteenth of a grain taken to have proved sensibly diuretic (l. c. 396).

ARTEMISIA.—Page 184, col. 2, line 17; "Nat. order *compositæ discoideæ*."—It is a plant with firm stalks, of a purplish colour, with deeply divided leaves, resembling those of common wormwood, of a dark green above and hoary underneath. The flowers are small, purplish, naked, and discous, standing erect in spikes, on the tops of the branches; perennial; grows wild in fields and waste grounds: the flowers appear in July.

ARTERIA.—Page 185, col. 2, line 25; "*it only connects the real ones.*"—There is a little apparent contradiction in two parts of this article, which it may be useful to explain. Though the cellular membrane is improperly numbered among the coats, yet the external one, with the few exceptions we shall soon mention, seems scarcely to differ from a condensed cellular substance. In fact, this substance gradually becomes firmer, till it almost assumes a strong ligamentous appearance, though by maceration it again becomes cellular. The meaning of the former assertion is, therefore, that the cellular substance, *as such*, is not properly a coat. An external coat is, however, often supplied from the surrounding membrane; in the thorax and abdomen by the pleura and peritonæum; in the head, and often to some distance after escaping from the cranium, by the dura mater; while the aorta is, for a little way, covered by a prolongation of the pericardium. The circular fibres are improperly termed, as continued circles are thus implied, though, as we have expressed it, they are only disposed circularly. They are scarcely demonstrable in the smaller arteries, though they evidently exist, as appears from the effects of what Dr. Whytt calls their increased oscillatory motions. The innermost coat though without valves has, however, folds, which are placed at the divarications of the larger arteries from the aorta, apparently to lessen the too great impetus of the blood. In the arteries of the viscera the internal coat is lax and rugous. The coats of the arteries are nourished by other arteries which come from trunks external to those which they supply. These arteries pass down the sides, and penetrating through the laxer are lost in the denser substance of the external coat. Nerves usually accompany them, and from these circumstances arteries may certainly be numbered among the sensible and irritable parts of the body, though denied by Haller. The smaller arteries appear to possess a high degree of mobility.

The arteries are cylindrical, or rather conical, that is, their sections are constantly circular; and this is attributed, perhaps with reason, to the elasticity of their coats, for when distended by the propelled blood they recover their former figure, in consequence of this principle. The strength of the arterial coat is said to be proportionally greater in the small than in the larger branches; but this idea, apparently derived from the more frequent occurrence of aneurisms in the larger arteries, is scarcely supported by observation; and the disease apparently arises from the greater momentum of the blood, both from its greater bulk and velocity the nearer the vessel is to the heart. The proportion indeed of the containing coats to the cavity of the artery is least in proportion to the size of the vessel, and of course to its more central situation.

The contents of the branches are greater than of the trunk, so that when we compare the branches with the trunk, we can only style the arterial system a series of conical tubes; for in every view the blood is propelled into a larger space. The sections of two branches, it is said, exceed the trunk in the proportion of three to two; so that the enlargement of the cavity must proceed in a ratio rapidly increasing. The angles at which the branches divide are usually half a right angle, but they sometimes, though in a few instances, pass off at right, and in two or three, as the coronaries and lumbar arteries, at very obtuse angles. Sometimes arteries sent off at acute angles soon take a retrograde direction, as the ascending artery of the pharynx, the umbilical and mammary arteries. Two arteries of a large diameter seldom unite, yet an instance occurs in the two vertebrals, but such a junction is common in smaller ones. Arteries sent to parts where the circulation is subject to obstruction, or requires copious supplies of blood, as in the large intestines, lips, and iris, are serpentine, and minutely anastomose: they are serpentine also by distension, and when they pass round any head or process of a bone. The connection of arteries by anastomosis is frequent, particularly where a part is of importance, and where the circulation is occasionally impeded. The microscope is said to discover the last termination of arteries, or the first formation of veins by a reflection of the same vessel, or by the insertion of the small evanescent artery into the side of a vein; but many reasons lead us to suspect the fallacy of such observations. The smallest arteries of inflamed parts throb, though pulsation in veins is singularly rare. To which may be added, that though a fine injection passes into the minutest arteries, it rarely returns by the veins, or these are filled only to a very inconsiderable extent. For the action of the arteries and the consequences of that action, see CIRCULATIO.

A fuller account of the connection of the different parts of the arterial system may be acceptable, and we shall consequently give it in a tabular form. The subdivisions of the table are the branches from the vessels named in the principal divisions.

I. Arch of the aorta. Ascendens.
- *a* Arteria inominata.
  1. Right and left carotid, external and internal.
     - α External carotid.
       - Thyroid.
       - Lingual.
       - Labial.
       - Inferior pharyngeal.
       - Occipital.
       - Posterior auris.
       - Interior maxillary.
         - Spinous artery of the dura mater.
         - Lower maxillary, &c.
       - Temporal.
     - β Internal carotid.
       - Ophthalmic.
       - Middle cerebral.
       - Communications inosculating with the vertebral.
  2. Subclavian above the shoulder.
     - *a* Internal mammary.
       - Thymic.

Comes phrenici.
Pericardiac.
Phrenico pericardiac.
β Inferior thyroid.
Tracheal.
Ascending thyroid.
Transversalis humeri.
γ Vertebral.
Within the cranium, the basilar artery.
Anterior cerebelli.
Posterior cerebri.
δ Cervicalis profunda.
ε Cervicalis superficialis.
ζ Superior intercostal.
η Supra scapular.

3. Subclavia artuum superiorum.
α Axillary artery.
Four mammary arteries.
Subscapular.
Posterior circumflex.
Anterior circumflex.
β Brachial artery.
Profunda humeri superior and inferior.
Artery which ramifies and anastomoses round the elbow joint.
γ Ulnar artery.
Several recurrent branches.
Common interosseal.
Dorsal ulnar.
Palmaris profunda.
Palmary arch.
Digitals.
δ Radial artery.
Radial recurrent.
Superficialis volæ.
Palmaris profunda and digitals.

N. B. The ulnar and radial arteries are continuations of the brachial, not distinct branches.

II. Aorta descendens.
a Pectoralis.
α Bronchial.
β Œsophageal.
γ Intercostals.
δ Inferior diaphragmatic.
b Abdominalis.
α Cœliac.
Hepatic.
Duodeno gastric.
Right gastro epiploic.
Pancreatico duodenal.
Pylorica superior hepatica.
Coronaria ventriculi.
Splenica.
Great and small pancreatics.
Posterior gastric.
Left gastro epiploic.
Vasa brevia.
β Superior mesenteric.
γ Emulgents.
δ Spermatics.
ε Inferior mesenteric.
ζ Lumbar arteries.
η Middle sacral.
c Hypogastrica. (Illiacæ internæ).
α Sacrales laterales.
β Gluteæ.
γ Ischiaticæ.
δ Pudicalis.
. Externa hæmorrhoidalis.
Perinealis.
Arteriæ penis.
d Hypogastrica externa. (Illiacæ externæ).
α Epigastrica.
β Circumflexa illiaca.
e Artium inferiorum.
α Femoralis.
Profunda.
Ramus anastomoticus magnus.
β Poplitea.
Anterior tibialis.
Recurrent artery.
Internal malleolar.
External malleolar.
Tarsal.
Metatarsal.
Dorsalis externa halicus.
Posterior tibialis.
Internal plantar.
External plantar.
Digitals of the toes.

The diseases of the arteries are various. Among these we find the pulmonary artery sometimes impervious (Medical Observations and Inquiries, vi.); and the defect must necessarily be fatal to children immediately after birth. Their coats are sometimes cartilaginous, and occasionally of a stony hardness. Geiseler, in his treatise on calculus, mentions the coats of the arteries as, in many parts, lapidescent. The carotids, independent of either change, have been found peculiarly hard. A single artery is often deficient; but seldom an important one, and we attach little credit to the story of the defect of the spermatics, in two instances recorded in the Ephemerides Naturæ Curiosorum.

The coats of the arteries are often inflamed, and Willich, in Baldinger's Magazine, mentions its occurrence in the umbilical arteries; Birch, as following the operation for the aneurism. We have found it, on the whole, probable that this is the cause of rheumatic pains. Inflammation may weaken their texture, and render them more liable to break, or the stony hardness we have mentioned may render them brittle: it is at least certain that they are sometimes broken through with little external violence; an instance of which is recorded in the Philosophical Transactions. Behrens mentions a rupture of the abdominal arteries in consequence of a slight stroke; Stoellers of a rupture of the œsophagial artery from drawing back the head; and we recollect an instance of the rupture of the brachial artery from a fall from a horse, where the person pitched on the elbow. The treatment of wounds of the arteries has been already mentioned (see VULNUS, ANEURISMUS, and AMPUTATIO); but accidental wounds have been cured by compresses, by ligatures, and, in one instance (Lambert Medical Observations and Inquiries, ii. 30), by a suture. Lotter (in the *History* of the Academy of Surgery, ii. 95) describes an apparatus for the cure of wounds in the intercostal arteries; and Belloque, in the *Memoirs* of the same volume (125), another machine for

the same purpose. Plenck, however, cured a wound in the intercostals by compression only.

We ought to have mentioned, under the head of aneurisms, that Morgagni records a case of considerable palpitation and pulsation of the arteries without any manifest cause.

See Fasselius de Morbis Arteriarum; and Langswerth Theoria Medica de Arteriarum et Venarum in Corpore Humano Affectionibus.

ARTHANITA.—Page 186, col. 2, line 21; "Lin. Sp. Pl. 207."—It is a low plant, with no other stalk than the pedicles of the leaves and flowers: the leaves are green, with slight specks above, and purplish beneath; the flowers purplish, monopetalous, deeply divided into five segments, followed by round seed-vessels; the roots large, somewhat globular, with several fibres, blackish on the outside, and whitish within. It is perennial, and a native of the south of Europe.

ARTHRITIS.—Page 187, col. 2, line 14; "*from any farther attack, in tolerable health.*"—It may appear a trifling observation, but it has escaped the notice of some of the latest etymologists, that the English term *gout* is derived from *gutta*, in consequence of the old idea, that all inflammations arise from defluction. We have still the treatise of Carpinati, published at Padua, 1609, De Gutta seu Juncturarum Dolore; but the term may be traced to Valescus de Tarenta, who wrote his commentary early in the fifteenth century, and Schneider, in his *Liber Catarrhorum Specialissimus*, published at Wittemberg, 1664, usually denominated the sixth volume, and peculiarly scarce, describes the gout as a catarrh.

Fits of gout, when most regular, are terminated by a red deposition in the urine, sometimes by a whitish matter, which is, in reality, the mucus of the bladder; occasionally by vomiting and a diarrhœa, by a quartan, and by abscesses (Piso and Weber); but the last solution is in almost every instance the effect of chalky accumulations. The disease is said to be sometimes endemic, as at Goslar (Fabricius), and in Westphalia (Neuhaus); but this probably depends on the most usual diet, and the latter author particularly attributes it to the use of unfermented beer. It has sometimes appeared contagious, and has been apparently communicated from husband to wife, and the contrary (Degner de Dysenteria, p. 100); but these observations are not well supported. It is an idle story, that dogs have been affected with gout by licking arthritic ulcers. It at length destroys the joints (Morgagni de Sedibus, lvii. 2, 3, 4, 10), and exhausts the limbs. There is a singular and highly curious description of the anatomy of a martyr to the gout in the Medical Communications, i. 3. by Dr. Watson. It is singular, that though almost every part, except the hollow viscera, was a mass of chalk, the urinary organs were not diseased. The author adduces this case to disprove, in some degree, the generally supposed connection of gout with urinary concretions. Indeed the nature of the calculi is always the same.

To mention the various causes of gout, accumulated in the works of authors, would be an useless task. They are numerous and connected with no one principle, except inducing debility. Indeed in their enumeration physicians have generally collected the diseases and circumstances which gout follows, forgetting that the post hoc is not always synonymous with propter hoc.

We have little of importance to add on the cure of gout. An arthritic, who had suffered for forty years, who kept a regular diary of the length of the paroxysms, and their intervals, informed the author that since he had employed opium freely, the former were more short and mild; the latter longer. In advanced life, however, these changes naturally take place from weakness of the constitution, and he certainly never used it in the earlier periods of his suffering.

We know a judicious practitioner of medicine, subject to the gout, who, on its first appearance, takes off a large quantity of blood from the arm, or, if possible, more near the part affected. He is of a strong, robust constitution, and has followed this plan for many years, without inconvenience. This has led to some inquiries, the result of which may not be useless.

On recurring to the authors of former eras, we perceive that the practice of bleeding, in the gout, was not uncommon in the sixteenth and seventeenth centuries. It is mentioned also as successful in Patin's Collection of Epistles, i. 63; but the latest author in which we can discover it is Jumelin, who published at Paris, in 1778, a dissertation with this title, "*Ergo in insultibus Arthriticis, Venesectiones repetitiæ.*" The principle, when any can be discovered, is, that inflammation is best counteracted by bleeding. This has led to other views. We know that, in younger habits, gout attacks with violent inflammation; and general phlogistic diathesis seems to be its basis. In such habits, a low cooling diet, and avoiding wine, are the best means of relief; and this plan is combined with the means of counteracting acidity in the stomach by the habitual use of soda water. We know that this remedy has become fashionable, and its indiscriminate use has, as usual, been highly injurious. Yet in the inflammatory constitutions just mentioned it has been evidently successful. We state these hints for the guidance of the judicious practitioner, for we cannot speak from experience, as we have, not long since, considered the subject in this light.

The practice lately recommended by Dr. Kinglake is by no means a new one. It is mentioned in the *memorabilia* of Camerarius, and many authors, on whose judgment, in general, we place little reliance. It occurs also in Vander Heyden's work (see AQUA in this Appendix.) Authors have used snow, cold water topically, and cold baths. Mr. Small (Medical Observations and Inquiries, vi. 198), exposed the pained part to cold air with only a slight covering. We have said in the article, that it is more rational to clothe the joint neither more nor less warm than usual, and, since it was printed, we have found this advice highly useful. We are almost tempted, therefore, to advance another step, and think with Mr. Small that, when the pain is very violent, it may even be exposed to cold air. Yet this hint should be received with caution, for, though certainly suggested from the experience of that gentleman, it came perhaps more strongly recommended by our view of the action of DIAPHORETICS, q. v. If, therefore, its favourable appearance is connected with an opinion apparently theoretical, the conclusion should be received with hesitation, and more so, be-

cause there are inconsiderable limits between it and a practice which we think highly injurious, immersion in cold water. It is necessary to add, that Mr. Small is a man of a very robust constitution, and may therefore have resisted more effectually a dangerous repulsion. Leeches, we perceive, were recommended by sir John Pringle.

In the intervals of gout, guaiacum, particularly the volatile tincture, has been highly recommended. It has, under our own eyes, lengthened the intervals, yet the constitution has apparently suffered, or perhaps the lengthened intervals have been owing to increased weakness. Mercury has been also employed in alterative doses, with the same views. It has often failed, and salivation has been particularly injurious; but it has been sometimes successful when joined with opium or the belladonna (Plenciz Acta et Observata Medica; Hamilton Medical Commentaries; Boettcher Vermische Schriften). Warm baths of every country have been equally recommended, to restore the flexibility of, or to strengthen, the joints. A bath of alkaline ley has been recommended by Riedlin; the tanners decoction in the Ephemerides Naturæ Curiosorum; the artificial sulphureous baths by Von Mertens. The alkaline bath hath been sometimes used also to bring back the gout when repelled.

All the chalybeate mineral waters have been recommended in the intervals; and the whole tribe of tonics, with the arnica (Stoll Ratio Medendi, iii. 159); and the mineral acids. The narcotic vegetables have also had their advocates, we mean the hemlock, the flammula jovis, the aconite, rhododendron, henbane, belladonna, and dulcamara. In this country they have, however, usually failed Many other medicines, some triflingly inert, others ridiculous, have been mentioned; but to fill the page with these would add little to the value of the work.

See Walther de Arthritidis Natura atque Causis; Stoll Prælectiones, 359; Morgagni de Sedibus, lvii. 5, &c.; Murray Opuscula, vol. i.; Grant on the Origin, &c. of the Atrabilious Temperament and Gout.

ARTHROPHOSIS.—Page 191, col. 2, line 54; "*lying under the psoas muscle.*"—(See MORBUS COXARIUS).

ARTICHOKE JERUSALEM. (BATATAS CANADENSIS, q v.) "*Helianthus tuberosus* Lin. Sp. Pl. 1277." A tuberous esculent root, which derives its English name from its resemblance, in flavour, to the common artichoke. It is a pleasant, but flatulent food, though its inconveniencies may be avoided by spices, and stewing it in good gravy.

ARTICULATIO.—Page 193, col. 1, line 29; "*See Symphysis.*"—See Rhazes de Morbis Articulorum. In luxations of the joint which cannot be reduced, some motion is often preserved by the head of the bone forming itself a new socket in the part where it is forced. Instances of this are recorded by Tenon (Histoire de l'Academie des Sciences, An. 1750 p. 54), Moreau (Memoires de l'Academie de Chirurgerie, ii. 11); and Morgagni (De Sedibus, lvi. 6, 12—15). Mr. Park's method of separating the heads of the bone, and thus preserving the limb, in diseases of the joints, is a bold but a very judicious and useful measure.

ARTICULUS.—Page 192, col. 1, line 37; "*the joint often require amputation.*"—The joints are subject to many diseases, particularly abscesses, weakness, wounds, and fungus. The last is noticed in this work under the articles HYDRARTHUS and SPINA VENTOSA, according to their different consistence. The others are considered under their appropriate heads.

Page 192, col. 1, line 44; *read*, the veins and larger vessels unusually empty.

ARTOCARPUS.—Page 192, col. 2, line 10; "*in some measure resemble them.*"—The character of this genus consists in having male and female amenta in the same tree, but each separately inclosed during the early periods between two deciduous scales. The male amentum is cylindrical, thick, wholly covered with numerous sessile flowers, with a bivalve calyx, and a single very short stamen. The female amentum is thick, covered on every side with sessile flowers, thickly set; a long prismatic hexagonal, almost fleshy, calyx; an ovary terminated by a filiform style, continuing, and terminated by one or two stigmata. The seeds equal in number; the ovaries, with aristæ on their summits, surrrounded with a pulpy arilla, buried in a fleshy mass, and forming, by their reunion, an oval berry, rounded, rough and covered with pentaedral or hexaedral areolæ, owing to the superior part of the calices being wholly closed.

The branches of the artocarpus are terminated by a pointed bud, formed by two large scales, or deciduous stipulæ, the leaves of which are simple, alternate, entire, or cut. The axillary amenta are terminal: the fruit of a considerable size, usually situated on the large branches, on the trunk, or at the extremities of the smaller branches.

The a. incisa is distinguished by oval leaves deeply cut. It rises to the height of from twenty-four to thirty feet. Its trunk is strait, in bulk nearly equal to that of a man; its bark grey, wrinkled, and covered with little tubercles. Its top is ample, rounded, and branched. The leaves are on the smaller branches, which have circular marks, the remains of former leaves. They are about two feet in length, and one in breadth, divided at their summit by seven or nine, deep, indentations. The fruit is round and globular, often of the size of the head. Externally, it resembles the berry, contains, under a thick skin, a pulp, at first, very white, farinaceous and slightly fibrous, but which, when ripe, is yellow, succulent, and of a gelatinous consistence. This pulp is thick, and covers an oblong, thick, fibrous receptacle. In fertile individuals it contains oval, oblong, slightly angular seeds, a little pointed at each end, about the size of a large olive, and covered with numerous membranes: when cultivated, the seeds are abortive, and the fruit is wholly pulpy. When the fruit is perfectly ripe, the pulp is succulent, melting, sweetish; at that time very laxative, and is soon spoilt. At an earlier period, the flesh is firm, white like flour, and used as such, broiled only on coals, or boiled in water. The internal part is then soft as the crumb of new bread, which it resembles in taste, with the flavour of the jerusalem artichoke. In some of the Molucca islands, the seeds are roasted and eaten like chestnuts.

The wood and the leaves are nearly as useful within the tropics, where it thrives, as the palm. Two or three of these trees will supply a man for a whole year; and their cultivation is not more troublesome than that of our apple trees.

The a. integrifolia has oval leaves, entire, and a large oval fruit. It is produced in India, and has been conveyed to the isle of France. Its pulp is yellow, and of a saccharine taste: its seeds are roasted like chestnuts, and well tasted. From its trunk a fluid exudes which, when dry, is scarcely inferior to the chaout-chouc. Gœrtner makes it a distinct genus under the term *sitodion*, and Loueiro under that of *polyphemus*. Five or six species have been discovered, but the fruit of some of these is acid, and of others disagreeable, though each kind is occasionally eaten.

ARUM.—Page 192, col. 2, line 27; "Nat. order *piperitæ*."—It is a low perennial plant, growing wild in the shade. The leaves appear in March, like a spear, followed by a naked stalk, which bears a puplish pistil inclosed in a long sheath, and, in July, by a bunch of red berries. In some varieties, the leaves have black, in others white, spots: the first are the strongest.

ASAFŒTIDA.—Page 194, col. 1, line 22; "*from ten to thirty grains*."—It has been doubted, whether the asafœtida of the moderns is the Σιλφιον of the Greeks, or the laserpitium of the Latins. J. Bauhine (Hist. Plant. iii. 129), adduces the arguments on each side, and seems to admit their identity. Bodæus denies it. Geoffroy joins the former; and Dr. Miller thinks the whole difference owing to the employment of different parts of the plant in the preparation. The ancients used the Σιλφιον in jaundice, in hoarseness, and to prevent abortion. Galen thinks it heating, and injurious in urinary complaints. In these circumstances the ancient and modern silphium do not seem to agree. In India, the asafœtida is used in colic, dropsy, and tympanites. The seeds are considered as similar in virtue, though of inferior power. Externally it is employed in healing wounds, and in toothach. In chlorotic cases, it has been joined with steel, in worms with calomel. It is an ingredient in the pills of Rosenstein, for worms, with extract of tansy, semina santonici, vitriolated iron, and honey. Alone, it is said occasionally to prove laxative in the torpid state of the intestines, which accompanies old age, and it is recommended by Plenck (Materia Medica Chirurgica 155) as an emollient plaster in scrophulous and other indurations.

ASARON.—Page 194, col. 2, line 18; "*growth are nearly as good*."—It is a low plant, without stalks, whose leaves are stiff and roundish, with two little ears resembling a kidney, of a dark shining green colour, set on pedicles three or four inches long. The flowers consist of purpish stamina, standing in a cup, followed each by a capsule, containing six seeds. It is perennial and evergreen, a native of the southern parts of Europe, but raised in our gardens, which produce roots as good as those from the Levant.

ASARUM VIRGINICUM.—Page 194, col. 2, line 52; "*Black snake-weed*."—Lin. Sp. Pl. 633.

ASCLEPIAS.—Page 199, col. 2, line 54; "*A. vincetoxicum* Lin. Sp. Pl. 314."—The stalks of the asclepias are not branched; the leaves are smooth, set in pairs; the flowers monopetalous, in clusters, followed by two long pods full of white down resembling cotton, with small brownish seeds. The root is large, composed of many slender strings, hanging from a transverse head, brown externally, and white internally. It is perennial, grows wild in gravelly soils, and flowers in July. The root is not only bitterish, but acrid, with a slight aroma.

ASPHALTOS.—Page 202, col. 1, line 9; "*See Bitumen*."—The true asphaltum is found in a soft liquid state on the surface of the Dead sea, and, by age, becomes a light, solid bitumen, dusky externally, and of a deep shining black within. When heated, its smell resembles pitch. A similar substance is found in many other parts of the world, but that usually sold is a composition, of which pitch is the chief ingredient. The true asphalum was formerly employed for embalming the dead, and was used in medicine as a pectoral, and, externally, as a discutient. It is now neglected, not from its scarcity, but from its inutility.

ASPHYXIA.—Page 202, col. 1, line 45; "*Bruhier, on this subject*."—In a more limited sense, it means a deficiency of pulse, which is sometimes real, sometimes only apparent from the artery sinking deep among the muscles. In Pacchionis' works we find an instance of the deficiency of the pulse though the heart beat with violence. Haller (Pathology, 25) records a case in which the pulse ceased three days before death: and Morgagni (de Sedibus, &c. xlviii. 44), where, from mœnorrhagia, it was not observable for a considerable time before the same event: Valisnieri could not discover it for seven days. From aneurisms it is often partially indistinct; and Mr. Hunter mentions the pulse being lost in the wrists from an aneurism of the aorta.

ASPIS.—Page 202, col. 1, line 56; "*amputation cannot be performed*."—There have been considerable disputes respecting the animal by whose bite the voluntary death of Cleopatra was induced. Laurenti and Cepede consider it to be the common viper of Egypt, Linnæus the coluber ammodytes. The difficulty may perhaps be removed by denying that she died of the bite of any serpent, for the only foundation of the suggestion was two small marks on the arm. The science of poisoning was too well understood in those days to require external aid. It is, however, certain, that the poison of the Egyptian viper induced a pleasing numbness, which terminated in death; and these were the animals originally employed in the theriaca, and in all circumstances where the flesh of vipers is directed. Hasselquist informs us, that vast quantities were exported to Venice from Egypt, for the purpose of preparing the treacle, which derived its name from that city. The ancients directed also a plaster, δι' ασπιδων, as a resolvent in scrofulous swellings.

ASPLENIUM.—Page 202, col. 1, line 61; "*Spleenwort*."—It is a small bushy plant, growing on the fissures of rocks and old walls, consisting of capillary, blackish,

roots, long narrow leaves, cut down to the rib on each side, alternately, into many oblong, obtuse, narrow sections, with broad bases. It has no stalk nor flower: the seeds are a yellow powder, on the back of the leaves.

Page 20?, col. 2, line 23.—ASTRAGALUS EXCAPUS, Lin. Sp. Pl. Wildenow, vol. 3, p. 1322; Mantissæ, 275.

ASTROITES is a madripore found most frequently in a petrified state, chiefly imbedded in calcareous blocks, where they are styled, by the workmen, partridges eyes. The petrified or siliceous astroites are not very common, the calcareous ones more frequently occur. They are sometimes not surrounded by the stone, but cavities in the block are apparently lined with them.

ATABULUS. A wind, which sometimes prevails in Apulia; scarcely inferior to the harmattan in its drying qualities, but cold and unwholesome.

ATRIPLEX FŒTIDA.—Page 213, col. 1, line 63; "*chenopodium vulvaria* Lin. Sp. Pl. 321."—It is a low, procumbent plant, sprinkled with a white, clammy, farina; the leaves small, roundish, with an obtuse point. Clusters of imperfect flowers come from the tops of the branches, followed by a flattish seed. It is annual, grows wild about dunghills, and flowers in August.

ATROPHIA DEBILIUM.—Page 214, col. 1, line 39; "*milk diet, are the cure.*"—It may be useful to give a more particular account in this place of the causes and cure of atrophy, which, particularly in children, is often a troublesome and dangerous disease. As it proceeds from a deficiency of the digestive powers, we may discover its effects in every part of the process. It is often owing to an imperfect mastication, either from haste, or from want of teeth; to an atony of the œsophagus; weakness of the stomach; schirrosity of the liver; a change in its organisation (Morbi Vratislavienses, 1?9); steatoms pressing on the stomach or intestines. Suckling is not an uncommon cause of atrophy; and, in three instances, where the constitution was weak, we have seen it induce a debility of the œsophagus, and a difficulty of swallowing in consequence of it. With rickets, diseases of the mesentery are usually combined, and these are apparently different from scrofulous infarctions. The atrophy, in scurvy, seems to be owing to an acrimony, as well as that from lues (See SCORBUTUS). We need scarcely add to the list of causes a deficiency of aliment, or of food not alimentary.

Among the medicines, not mentioned in the article, we observe the arnica, recommended in the Berlin Transactions, acorns, the leaves of the hedera arborea (Delii Adversaria Fasciculus, iv), lichen islandicus, and the resolvent of clysters Kempf, which consist chiefly of what are called, in the Boerhaavian school, the saponaceous deobstruents, in other words, the simple bitters.

Topical atrophies do not differ from partial palsies.

ATTOLLENS NARES rises from each superior bone of the nose, and is inserted into the lower part of the alæ, pulling the nose upwards.

ATTRITA.—Page 214, col. 2, line 63; "*See Intrigo.*"—*Attrition*, in the mechanical philosophy, means the rubbing of bodies against each other, so as to abrade their sharper angles, and render them round, or, as was formerly thought, fluid. Des Cartes supposed the world formed by the attrition of cubes and bodies, yielding in different degrees, from the attrition of the parts first abraded, and then of the others in succession. The mechanical physicians endeavoured, in the same way, to explain the changes in the human body; and angular fluids, which were stimulant, they supposed were rendered mild by the abrasion of their points (Gaubii Pathologia, §. 300). We need scarcely add, that this rests on an unfounded hypothesis. The attrition of the sides of the stomach was considered, with as little reason, to be the cause of hunger.

AUDITORIUS NERVUS.—Page 215, col. 1, line 61; "*from the dura mater can be traced.*"—See CEREBRUM and NERVUS.

AUDITUS.—Page 216, col. 1, line 25; "*and the article* SONUS."—The philosophical part of this article, in the beginning, was taken too implicitly from authors of credit. In the article SONUS, q. v., it is, we trust, more correct. But no apology is necessary for erring with men of established reputation. We could wish to expunge "the ingenious observations of Dr. Shebbeare." The words escaped from inadvertence: we have since referred to the work, and find the epithet wholly misapplied.

AURANTIA HISPALENSIA.—Page 216, col. 2, line 61; "*or in a spirituous solution.*"—The *flowers* may, it is said, be preserved by packing them closely in earthen vessels, with half their weight of muriated soda. They are sometimes candied with sugar, and occasionally suspended in glasses, opposed to the sun, that their liquid odour may transude. This is preserved in well stopped phials.

The *leaves* were first employed as a secret remedy, and sent from Westerhoef to De Haen. They were first given in chocolate, red wine, or in decoction, and the former found them highly useful; in convulsive diseases, the colica pictonum, and epilepsy, joined with catalepsy. De Haen, however, though he cured with their assistance some convulsive complaints, yet could not succeed in epilepsy, nor in a tremor arising from a fright (De Haen Ratio Medendi, vi. 305, 313). Locher, Hannes, and numerous other practitioners, are, however, said to have been more successful, while in different places they have failed. In hysteric spasms and slighter pains (Werlhoff Opera, 707) these leaves are allowed to be useful; and in nervous weakness Kempf, it is said, has employed them with success (Acta Hassiaca, i. 156). Of the dry powder of the leaves from half a dram to a dram may be given two or three times a day. In decoction a handful of the leaves, cut small, may be boiled in a pint of water to half a pint, which must be taken in the day.

The *rind* is by some authors preferred to the bark,

in intermittents, and is given infused in wine or spirit, sometimes in powder. The most respectable authority for its use is Werlhoff. Independent of uterine hæmorrhages, it has, according to the same author, been found useful in hæmorrhoidal ones. It has been preferred in atony of the stomach, on account of its aroma, and has for this reason been directed as an ingredient in the elixir stomachicum of Hoffmann, and the tinctura stomachica of Whytt.

The recent *juice* is of singular service in scurvy, and Lobb observes that it has the power of dissolving some species of calculus. The essence of bergamot is not prepared from the Spanish orange, but from a variety of lemon, called by Volkamer the limon bergamotta.

AURIS MARINA.—Page 218, col. 2, line 16; "*are first boiled, then fried.*"—The auris marina is the haliotis tuberculata of Linnæus, a genus of the univalves, composed of uniform shells, with a very low spiral, and a large aperture; the shells are rather long than large, and pierced with holes in a line, often containing pearls. The aurmar resembles the limpet, not only in its shell, but in the animal who inhabits it, differing in the spiral, which is almost imperceptible, and in the holes disposed in a lineal direction. These holes vary in number apparently according to the age of the animal, and are supposed to be the passages for its excrements. They are by no means a delicious food, and are sometimes found fossil.

AUTOCRATEIA (αὐτὸς and κρατέω) synonymous with the vis medicatrix naturæ, the *anima medica* of Nichols, the *archæus* of Van Helmont, that power which corrects all the deviations from a state of health, and preserves it in circumstances most adverse. We know not in what it consists; because it is so intimately connected with the principles of life, of which we are ignorant. It is highly probable that the autocrateia is not an intelligent agent comprehending the cause of the disease, and directing the requisite means (see STAHLIAN SYSTEM); nor, on the other hand, are the preservation of health and its restoration from disease the necessary consequences of a peculiar structure or organisation.

AUTOUR, a bark brought from the Levant, resembling cinnamon; but thicker and paler. Within it resembles a broken nutmeg, with numerous brilliant points. It has neither taste nor smell, and is used only in the arts, particularly for making carmine.

AXIOM generally means a self-evident truth, as that a part is less than the whole; but the meaning of the term has been extended, and we meet with axioms in physics, which, so far from being self-evident, appear, at first sight, scarcely probable. In fact, axioms of the former kind are positions which must be necessarily true; of the latter, those which have been admitted as such, because the contrary has not been demonstrated.

AXIS.—Page 220, col. 2, line 11; "*the third vertebra from the skull.*"—It is also in *anatomy* and *physics* the central line of a canal equidistant from the side, and like a mathematical line, possessing length without breadth. In *botany* it is a taper column round which the different parts of a flower are regularly disposed.

B.

BACCÆ.—Page 222, col. 1, line 9; "*which are berries hanging in clusters.*"—A berry is defined, by Linnæus, a pulpy pericardium or seed-vessel, without a valve, inclosing several naked seeds, generally, though not always, placed on foot-stalks. In the xanthium, what has been styled the berry is dry; in the capsicum, without pulp. These exceptions it is probably impossible to avoid, without introducing more intricacy, by increasing the number of terms or modifications.

A berry is usually round or oval, often furnished with an umbilicus, the remains of the efflorescence. When formed of the pericarpium, it is styled *proper*; if of other parts, *improper*, or *singular*. Of the latter the varieties are numerous. A large fleshy succulent calyx, sometimes the common receptacle, a seed, the nectarium, the tube of the corolla, and a succulent arillus, occasionally become berries. The pulp rots on the ground, and the berries then germinate.

BACCIFERÆ PLANTÆ, an association in the systems of Hermannus, Morison, Boerhaave, Ray, &c., from seeds being contained in a bacca.

BALBUTIES.—Page 223, col. 1, line 48; "*psellismus balbutiens of Dr. Cullen.*"—Stammering is a convulsive action of the organs of expiration, probably also of the muscles of the glottis, wholly involuntary, and so rapidly recurring, that the articulating organs are unable to act (see VOX). It is generally the disease of persons of an irritable and mobile habit; and what establishes the reality of the cause is, that, if the attention is strongly fixed, the convulsion as usual ceases. For this reason those who stammer often sing without the usual hesitation; for the mind is fixed on the tune. When the stammerer is wholly silent, the spasm is apparently in so great a degree as to close the rima glottidis, and, during its relaxation, not to yield sufficiently to admit of a sound. We see evidently that the catches of the respiration are peculiarly rapid.

BALLOTE.—Page 223, col. 2, line 1; "*black stinking horehound.*"—It shoots up from one root, in numerous, black, square, hairy stalks: the leaves resemble those of common horehound, but are larger, rounder, black, and hairy, set at a distance about the stalk, as in the melyssophyllon; a name sometimes assigned to it. The flowers are white, and grow about the stalk in whorles, appearing in July.

BALNEUM.—Page 225.—We were not aware, at the time this article was written, that some experiments on the effects of this remedy were made by Dr. Haygarth, and published in Dr. Falconer's work on the Bath waters.

Other medicated baths are prepared from iron, milk, and aromatics. Milk baths have been used as cosmetics, for conveying nourishment, when the œsophagus or the pylorus were obstructed, though, we be-

lieve, with little success. Vitriolated baths have been employed for restoring strength to the debilitated; more partially to the legs, for the cure of varices; for stopping the excessive discharges of the menses and of the hæmorrhoids. Alum, lime, and sal ammoniac have been boiled together, or separately, in water, for the relief of paralytic limbs. Alkali, dissolved in water, has been used to solicit the gout to the extremities, and the muriatic acid, in the same way, to restore flexibility to the joints, after a paroxysm.

BALLON, a large glass receiver in the form of a hollow globe, sometimes with two necks, one of which is inserted into the retort, the other into a second balloon. Several balloons are thus often connected, and then styled *enfiladed*. The design is to increase the space in which the distilled fluid is condensed. A small balloon is sometimes interposed between the retort and receiver, to keep the latter at a greater distance from the fire.

BALSAMICA.—Pgae 228, col. 1, line 62; "*of oil and resin of oxygen.*" The acid in balsams is the benzoic, and, according to Neumann, they contain a large portion of essential oil. Indeed they are sometimes considered to be the oil itself, which has lost its odoriferous principle and its volatile portion; but this is undoubtedly erroneous, as the acid is constant, and rises with the oil. It is not astonishing then that the residuum should be resin, which usually remains after the distillation of essential oils. They are suspended in water by the yolk of an egg, sugar, but most perfectly by mucilage, and we usually prefer, from its smoothness, that of the gum tragacanth.

BALSAMUM ARTIFICIALE. Essential oils or resins reduced to the form of a balsam, and coloured by alkanate or saffron. The BALSAMUM LOCATELLI, q. v., is an instance of this kind; but the old pharmacopœias are full of similar preparations.

BALSAMUM.—Page 328, col. 2, line 40; "*a. Gileadensis.*"—Neither the genus nor the species of the real plant is yet properly discriminated; nor have we heard that the labours of the Institute, during their dangerous and tumultuous residence in that neighbourhood, have advanced our knowledge on the subject. The tree, whatever it be, is at first small, only a few cubits in height, growing plentifully in the mountainous districts of Arabia Felix and Deserta. Yet it sometimes rises to a greater height, since Forskall described it, if we allow the identity, under its shade. Alpinus denies that the plant or tree is a native of Egypt; but admits that it is brought to the green-houses in the neighbourhood of Cairo, from Mecca, or rather from the place of its growth, between Medina and Mecca.

The balsam was highly valued by the ancients, and the tree was held so sacred, that, like the misseltoe of the druids, which should only be cut with a golden sickle, the branch of this species of amyris was said to be destroyed by iron, and the incision must of course be made with a sharp stone, or a shell. Some branches yield only three or four drops in a day, and the most fertile ones only from thirty to sixty drops. We suspect that the account in the article which describes the different kinds of balsam obtained by incision, a decoction of the branches and the fruit, is erroneous. The first is apparently the only balsam. The branches are burnt in the temples; and those of another species (Amœnitates Academice, vii. 66) are sometimes employed in their place. The fruit also affords apparently no balsam, though, in its recent state, both from the smell and taste, it seems to contain it.

The experiment of its diffusion in water, and being taken up on the point of a needle, does not always succeed in balsam confessedly genuine, especially when long kept. The drop sometimes sinks to the bottom, sometimes renders the water milky. But the oil of juniper, and the resinous fluid which distils from the fir, in the month of March, equally spreads in a pellicle on the surface of water: it is not certain that these may be taken up on the point of a needle.

This balsam consists of a very fragrant etherial oil, drawn off by distillation, and a fixed resinous substance. It is dissolved in alcohol only by heat, and cold water added to the solution renders it milky. Digested with distilled oils an union takes place.

It is adulterated with the Cyprian turpentine, the oil of sesamum, the fat of the ostrich, &c. (Hasselquist's Travels, 530; Alpini Dialogi, 33). In the place of this balsam, the fluid which exudes from the ruptured vesicles of the pinus balsamea is sometimes sold, and this accounts for the different descriptions given of the properties of the medicine.

It is impossible to confirm or deny the exuberant praises which the ancient physicians have lavished on this medicine, since we do not probably receive it in a pure state. Besides its diuretic and expectorant powers, more sober enquirers admit its antiseptic and analeptic virtues. From its warmth, it is injurious in inflammatory diseases, particularly in the early stages of virulent gonorrhœa, though recommended by Sydenham, on the mistaken idea of the complaint arising from ulcer. In all internal ulcers it is equally dangerous, unless when the discharge is continued from a relaxation of the vessels. Its use in external wounds and ulcers is very clearly ascertained; but its utility is by no means so considerable as to induce us to regret its scarcity and price. Quarin has informed us, that even the best Mecca balsam is scarcely, if at all, superior to boiled turpentine (Animadversiones Practicæ, 89). The Turks take three drops to strengthen the stomach; but twenty may be occasionally employed with no striking advantage.

BALSAMUM COPAIBÆ.—Page 229, col. 2, line 2; "*greatly impaired by the fraud.*"—The name is said to be derived from copal, an appellation of all sweet-scented gums by the Americans, and *iva*, a tree. The balsam is often adulterated with turpentine, which can scarcely be disguised if a little of the suspected balsam be rubbed in the palm of the hand. The turpentine is also thicker and less yellow than the copaiba. Another mode of adulteration is to distil a portion of the oil of copaiba, which it yields in a large proportion, with cheaper essential oils, and in this union the fraud can scarcely be detected but from the weaker qualities of the suspected drug; sometimes from the adulterated oil requiring a longer time and a larger proportion of spirit of wine for its solution than the copaiba.

The balsam is drawn by a perpendicular cleft in the tree five or six inches long, so deep as to penetrate

through the wood; or by boring. In the proper season twelve pounds of the balsam may be drawn in three hours. The younger trees supply a larger quantity, but of a more weak watery quality. The wound then closes, though in the old trees the operation may be repeated.

When first discharged it is more fluid and colourless. Another species sometimes met with is white, less limpid, of an unpleasant terebinthinate smell, and a disagreeable taste, with a small portion of dirty water at the bottom. This balsam, if not adulterated, is sometimes produced by a decoction of the branches or bark.

The use of the balsam copaibæ in hectics has occasioned considerable controversies. In the more violent inflammatory stages it is undoubtedly injurious, and we can scarcely perceive any period for its use, but in those doubtful cases, partaking of the nature of catarrh and hectic, where the expectoration is apparently checked from weakness, or is too copious from relaxation. Even diminishing the dose, and joining it with nitre, or rather neutrals (Simmons and Gesner), will be scarcely sufficient to render it safe. In gonorrhœa also it is necessary to wait till the inflammatory symptoms have subsided; nor is its use perfectly safe until they are removed, though we find instances where a large dose is said to have cured at once a gonorrhœa. In dropsy, according to Mutis, it has been useful, and in large doses often proves laxative. In New Spain it is generally employed in the arts, particularly in the preparation of varnishes. It is the only solvent of gum algarrobo.

BALSAMUM PERUVIANUM.—Page 229, col. 2, line 20; "*decoction of the branches inspissated.*"—This account, however, taken from Monardes' Commentary on Clusius' Exotics is subject to a little doubt; for a few drops of this black balsam dropped into water divides into two portions; the larger part sinks to the bottom, while a more subtile one of a penetrating taste rises to the top, though Monardes informs us, that the balsam is separated from the water after boiling very readily, as it swims on the top.

Balsam of Peru burns when flame is applied, and by long standing crystals are produced, which resemble, on solution in water, flowers of benjamin. Sugar does not procure a sufficiently permanent union between it and water. It is recommended by Sydenham in the Devonshire colic, and by Kirkland in convulsions from suppressed perspiration, producing child-bed fevers. In trismus, from an injury to the tendo achillis, its application is said to be highly successful.

BALSAMUM SATURNI prepared by dissolving cerussa acetata in oil of turpentine, and digesting the mixture till it acquire a red colour, is said to be an useful application in foul ulcers; but it is not acknowledged by the college.

BALSAMUM TRAUMATICUM, formerly FRIAR'S BALSAM. Tinctura Benzoes C. Pharmacopœiæ Londinensis.

BALSAMUM TOLUTANUM.—Page 130, col. 1, line 1; "*toluifera balsamum* Lin. Sp. Pl. 549."—It is procured by wounding the bark of the tree, and receiving the balsam in spoons made of black wax, and brought to us in divided gourd shells. It easily mixes with essential oils, more difficultly with expressed ones, and with fat. When distilled alone first a pale empyreumatic oil, and next one of a deeper colour arises, with occasionally a small portion of saline matter, resembling flowers of benjamin.

BAMIER, an Egyptian plant, whose pyramidal husk, dressed with meat, is agreeable and wholesome. The husk is of a lemon colour, filled with seeds, which resemble in their smell musk.

BANANA.—Page 230, col. 1, line 30; "*Nat. order scitamineæ.*"—The plantain, the *musa paradisiaca*, as well as the *musa sapientum*, is a species of this genus. The former we have shortly noticed in the article MUSA; but we shall add a little fuller and a more connected account.

The character of the genus consists in a corolla deeply divided into two parts, of which the external, the largest, hath five teeth on its summit; the interior, and shorter, is entire and cuneiform; in six stamina, whose antheræ are connected in the superior parts of the filaments; an inferior, oblong, triangular ovary, a little curved, from whence rises an upright style, terminated by a somewhat thick stigma, with from three to six angles. The fruit is an oblong, prismatic, triangular berry slightly curvated, with three receptacles.

The two species mentioned are distinguished by the terms of the *long and short fruited banana*. Both are extremely useful as food, and cultivated for this purpose in both the Indies. The first is eaten roasted in the cinders, or in an oven, sometimes boiled in water with salt meat. It is soft, very nourishing, and easy of digestion, especially if eaten in moderation. The musky variety is the best; the fig banana is fresh, delicate, and melting, always eaten raw. The banana trees delight in a humid soil, and the plantations require only weeding. The tree bears fruit once only: if the trunk is not cut down it withers. But, from the root, numerous suckers arise, of which the strongest soon bears fruit, yielding its place to the others in succession. Thus a single banana furnishes an uninterrupted generation of similar individuals. The fruits are sometimes suffered to ripen, after they are gathered.

As the stalks of the banana are thick and herbaceous, they preserve their freshness long after they are cut down. In this state they afford a nutritious food for oxen and sheep, and are preserved on shipboard for the same purpose. By a peculiar preparation they furnish flax.

The plantations are sometimes destroyed by the whirlwinds, and the fruit is occasionally so abundant as to spoil before it is eaten. They have, therefore, been dried like figs and plums, and M. Badier of Guadaloupe has described two processes for this purpose. The natives of the West Indies, according to Labat, preserve the plantain by making a paste from them, viz. by squeezing the moistened fruit through a sieve. Of this paste they make little loaves, which they dry in the sun, or in hot ashes, previously wrapping them in the leaves of the Indian flowering reed. This paste by the preparation has undergone the acetous fermentation, and, when dissolved in water, forms an agreeable sub-

acid food. The leaves of the *tando* serve the inhabitants of the Molucca islands for towels and napkins. When dried, without injury, they are polished, and a fine paper is produced, soft, though brown, and not lasting. The Malays cover the tobacco they smoke with it, and little confects are conveyed to Europe wrapped in it. The heart of the flower stalk is cut in pieces, and boiled for feeding hogs.

The involucra of the leaves of the *coffo*, another species, are used for making cloths of a brown colour, like the cloth of unbleached hemp. The most common, used for clothes, is very coarse, and dyed of a black, a red, or a yellow colour. Another kind is fine and brilliant as silk, either dyed black, or painted with the figures of different animals and flowers. It is used to decorate beds, canopies, and the apartments of the opulent, and to make light dresses for the ladies. The external thicker bark of these involucra furnishes cord for cables, or hammocks for sleeping. The foot-stalk of the fruits, bruised or macerated in water for a night, is a powerful sudorific. The kind called *cro*, according to Adanson, is more useful than even the cocoa tree, since it is more common. It furnishes the principal food of man in the watery districts, where rice is rare.

To feed infants with this fruit, the mother previously chews it. Botanists suspect that the *ensété*, which comes from Gondar, is a species of banana. Bruce tells us that its stalk is boiled and eaten, and that it tastes like bread.

BARAPICKLET, very fine light cakes. The term is cumraig, as *bara* means bread. In the north of England such cakes are called *picklets*.

BARBA.—Page 230, col. 2, line 46; "*a beard*."—Barba implies the hair on the chin and upper-lip; "an excrement," to use the language of Antolycus, which forms the discriminating mark of manhood. Women, in whom the catamenia are scanty or obstructed, have a beard sufficiently conspicuous. Eunuchs have none. It is indeed so intimately connected with the genital system, that when the testes have been destroyed, after the beard has began to grow, it has ceased to increase, and in some instances has disappeared. When the same event has happened in maturer age the beard has evidently become thinner and weaker. The causes of this surprising singularity cannot be explained.

In botany it is a light species of down, covering the surface of some plants, and, from the language of Linnæus, apparently signifies a tuft or bunch of strong hairs terminating the leaves. *Barba corollæ ringentis*, in the language of Rivinus, means the lower, *galea* the upper, lip of a ringent corolla.

BARBADOES CHERRY, *Malphigia glabra* Lin. Sp. Pl. 609, are the small cherries of the West Indies, very inferior in flavour to those of Europe.

BARBATUS FLOS of Rivinus, synonymous with the *labiatus* and *personatus* of Tournefort, the *ringens* of Linnæus.

BARBULÆ; SEMIFLOSCULI, Pliny.

BARBYLA. COMMON DAMASK PRUNE. Theophrastus.

BARYTES.—Page 232, col. 2, line 41; "*History of Lancashire, Cheshire, &c.*"—Barytes is only found combined with vitriolic or carbonic acid. The former is generally diffused; the latter has been discovered only in Siberia and England. Le Grange, in the Annales de Chimie, xlvii., has taught us how to prepare the muriat of barytes from the sulphat without previously purifying the latter. The residuum from the distillation of muriated ammonia, viz. muriated lime, with an excess of earth, is lixiviated and evaporated to dryness. This, when reduced to powder, is mixed with an equal weight of sulphat of barytes, and the whole slowly projected into a red hot crucible, where it must remain in fusion for a few minutes. It is to be poured out while hot, and it will be found a gray, or slate-coloured, hard sonorous mass, very deliquescent. This is to be dissolved in six times its weight of boiling water, filtered, evaporated, and crystalised. The crystals will be muriated barytes. A second and a third crystalisation is requisite to separate wholly the other salts.

Carbonated barytes is converted into pure by calcination, or by solution in nitrous acid, after which the acid is separated by heat; but the artificial yields its carbonic acid much more easily than the natural kind: the former only can, therefore, be rendered pure by calcination; the latter requires, according to Pelletier, fusion for an hour in a close crucible, with 0.10 of its weight of charcoal.

The taste of barytes, when pure, resembles that of lime, with greater acrimony and causticity. It changes the vegetable colours like alkalis, absorbs a small portion of water with avidity, and considerable heat, forming a stiff paste, which adheres strongly to glass (Annales de Chimie, xxi.). Additional water changes it to a bulky white powder, which readily dissolves when heated, and on cooling crystalises in clusters of transparent needles, or fine transparent prisms. Strontian only, of all the other earths, can be thus artificially crystalised. Boiling water dissolves one-half, cold one-twenty-fifth, of its weight.

When heated on charcoal by the blow-pipe it becomes hard, partly vitrified, and scarcely soluble in water; for it seems to have regained some oxygen. When the blow-pipe is urged with oxygen gas, it melts into a white globule, resembling enamel. A solution of barytes attracts carbonic acid from the atmosphere more rapidly than lime-water, and is deposited in a white powder. It is scarcely soluble in alcohol, unless assisted by heat. The earth is precipitated from its solution by the oxalic, citric, phosphoric, and malic acids, and again dissolved by their excess. Most of the metallic solutions are decomposed by barytic water, and the oxides of silver and lead are again dissolved by an excess of the earth. (Vauquelin.) The carbonat of barytes and all its soluble salts are poisonous to animals, and should be employed with caution in medicine. The affinities of barytes with earths and oils strongly resemble those of alkalis; but this earth has a stronger attraction to oils than alkalis, and will decompose common soap; but the barytic soap is insoluble in water.

BASAAL.—Page 233, col. 1, line 33; "*tree growing*

about Cochin."—The plant is of the class *pentandria*, and order *monogynia*. The calyx has five divisions, as many petals and stamina; a superior ovary terminated by a very small style; a round berry, containing a nut resembling a white almond. Rheed has figured two species of this shrub (Hort. Malab. tab. v. 11, 12), which are evergreens, and highly odoriferous.

BASANITES.—Page 233, col. 1, line 40; "*useful in diseases of the liver.*"—Mr. Kirwan has given this appellation to a petrosilex; for he thinks it is of the same genus with the *siliceous trap*, or the *paliopetra* of Saussure, the *hornfelt* of some mineralogists. Its bloody juice and its utility in diseases of the liver are equally fabulous. The reference, "BASILICUM," has no object.

BASILICUM.—Page 233, col. 2, line 45; "*superior to the oil of marjoram.*"—The oil is chiefly recommended by Hoffmann (Observationes Physico-chemicæ, 19) as a cephalic and nervous medicine. The powder is sometimes used as tobacco (Chomel), and is an ingredient in the sternutatory powders of the foreign pharmacopœiæ.

BATH, *chemical;* the substances employed to transmit heat more gradually, and to retain it longer, as balneum arenæ, vel aquæ, when sand or water is employed. The latter is particularly useful, as it conveys a determinate degree of heat, that of the boiling point, and sea-salt is occasionally added to the water, by which it admits of a higher, but at the same time a steady, temperature.

BATRACHITES, *brontias*, the thunderbolt of the ancients, apparently a globular pyrites, striated from the centre to the circumference. The stones ascertained more lately to have fallen from the atmosphere, wherever formed, are very different, and combinations not yet discovered in this planet.

BATTATAS.—Page 238, col. 1, line 34; "*will not grow there without skilful culture.*"—A different and more probable history of the introduction of this useful root into England is given in the late Memoirs of the Horticultural Society, and introduced by Mr. Nicholson into his Journal; but it is too long for insertion, as it is but remotely connected with our subject.

BDELLIUM.—Page 238, col. 2, line 61; "*internally it is clear and not unlike glue.*"—The pieces of bdellium are brittle, and the fracture on the surface is rough, of a deep brown colour, occasionally pellucid, mixed with leaves and branches of the tree. It is softened by the heat of the fingers, and adheres to the teeth when masticated. Spirit of wine, if first employed, extracts only one-fourth; water, in the first solution, five-sixths: the former is red, the latter blue. Its fragrance rises in distillation. It does not burn rapidly; but while it crackles pours a fluid matter from its surface, leaving a black coal.

BECCA, in the materia medica of the ancients, is the resin collected from the mastich and turpentine trees combined together.

BECABUNGA.—Page 239, col. 1, line 21; "*veronica begabunga* Lin. Sp. Pl. 16."—It is a low creeping plant, with round, thick, smooth, reddish stalks, naked and procumbent at the bottom, erect at the top, clothed with firm, round, juicy leaves, of a dark shining green colour, slightly indented about the edges, and set in pairs about the joints. From the bosoms of the leaves arise naked foot-stalks, bearing spikes of blue flowers deeply cut into four segments, followed by flattish seed-vessels. It is found in rivulets and ditches, flowering in June; has been given as an antiscorbutic in whey, and the syrup is commended by Forestus. Its claims to the character of a deobstruent are as good as those of many other vegetables, which act as such only by a gently laxative power.

BELEMNITES, *orthoceratites*, a kind of shell usually found in a fossil state, generally in the mountains of secondary formation, though sometimes occurring in the stratified ones, and even in chalk. From the structure of the shell the animal apparently resembles the nautilus, but it has never been seen.

BELAE.—Page 139, col. 2, line 27; "*of considerable efficacy in diarrhœas.*"—The Indians add it to a fermented liquor, which they prepare from the sugar-cane, styled *took*, and Sonnerat describes it as useful in dysenteries, which were, however, apparently cases of hæmorrhoids. The dose is twenty-four grains in a cup of tea, or a glass of wine, twice a-day, increased after a few days to thirty grains. See Sonnerat and Mauduytt: Memoires de la Societé Royale de Medecine, iii. 689.

BELLIS MINOR.—Page 239, col. 2, line 61; "*it is wholly neglected.*"—The character of Baglivi induces us to add, that he recommends the juice of the red daisy in catarrhus suffocativus, arising from the stagnation of blood in the heart and lungs. Mathiolus and Fabricius also think it useful in wounds of the thorax. See also Koenig Regnum Vegetabile, 755.

BELLIS MAJOR.—Page 240, col. 1, line 4; "*diuretic and antiasthmatic.*"—Its utility in asthma and hectic is supported by Ray; and Geoffroy informs us, that the herb, before the appearance of the flowers, has a peppery pungency, adding, that at this time it is diuretic.

BELLON GROUND, a certain space round the smelting-houses of lead, where the poitou colic *(bellon)* is common, affecting oxen, sheep, and poultry, as well as mankind.

BEN.—Page 240, col. 2, line 13; "*from the cotton in a press.*"—The nuts are contained in a trivalve legumen, full of white pulp, and are themselves triangular. The ancients supposed them to be actively cathartic (Galen de Simplicibus, vi.; Avicennæ, lib. ii. 11, 82), and to the shells ascribed an astringent and deobstruent power, to which they add an opinion of their utility in diseases of the skin. The acrimony of the nuts is so great as to render them highly dangerous, if incautiously eaten. From eight pounds five drams of the nuts thirty ounces and a half of oil have been extracted

(Geoffroy, iii. 254). This oil differs little in its quality from common oil, though some practitioners have supposed that it prevented more effectually pits from the small-pox.

BENZOINUM.—Page 241, col. 2, line 25; "*employed as a corrector of foul air.*"—Scheele's process consists in uniting the benzoic acid with lime, and then separating the earth by means of the muriatic acid. It crystalises in long needle-like crystals. Crystalised benzoic acid is light, feathery and elastic. When the oil is in appearance wholly separated it is white; but, as the fragrance is retained, some oil probably remains, and occasions its weak affinity to alkalis. This acid is contained in styrax, and almost all the balsams.

BERBERIS.—Page 241, col. 2, line 40; "*putrescent state of the fluids.*"—There are three species of barberry, the common English, which we have mentioned, growing to the height of eight or ten feet, with many stems, armed with sharp thorns. The leaves are obtuse, oval, slightly serrated; the flowers arise from the alæ of the leaves in small ramous bunches, like currants, of a yellow colour, succeeded by an oval fruit, at first green, but, when ripe, of a beautiful red. The flowers appear in May, and the fruit ripens in September. The barberries without stones are, according to Millar, the oldest plant. The white-fruited barberry is distinguished by leaves of a lighter green, and a whiter bark; but it seldom bears fruit. The tall eastern barberry (Tournefort) has a black, sweet fruit. The two other species, the *canadensis* and *cretice*, offer nothing interesting.

The ancients added fennel seeds to the juice of barberries, to prevent their flatulence. An infusion of the bark in white wine is said to be purgative. The root, the bark of the root, and the inner bark of the stalks, are used for dyeing yellow.

The acid of barberries is the malic, with some portion of the citric; and they are used as pickles, as cooling eatables in sore throats; and the juice is preserved by sugar in the form of barberry drops. The facility with which it crystalises, when mixed with a small portion of lemon juice, seems not sufficiently to have attracted attention.

Page 242, col. 1, line 39, for CONTRACTURE read CONTRACTURA; and in col. 2, line 51, for *M. Orchard* read *M. Archard.*

BETONICA.—Page 243, col. 1, line 20; "*powdered, they make a good errhine.*"—The taste of the leaves is bitterish, slightly saline, with an inconsiderable aroma. The watery extract is bitter, and somewhat austere, without the smell of the branches; the spirituous extract is slightly acrid and aromatic. The story of Scopoli, who relates that the old women who gathered the root were intoxicated, does not prove its power, since others employed in the same office were unaffected, and the singular effect of the leaves given in broth to relieve the pain of a gouty paroxysm is entitled to little credit. The fresh roots are evidently laxative; and the leaves, according to Chomel, are expectorant. It is highly probable that the ancient betony was not the same plant which we distinguish by this name. The description of Dioscorides is very vague (lib. 4, c. 1, p. 245), and it can only be ascertained that it is a verticulated plant.

BETULA.—Page 143, col. 1, line 49; "*a brownish concrete like manna.*"—It is said to kill ascarides, and, from the time of Van Helmont, has been highly celebrated in calculus, though it evidently did not dissolve the stone in the trials of Mr. Boyle (On the Utility of Experimental Philosophy, Ex. 4. xvii. 179). It is said to be so violently diuretic as to induce diabetes; the authors should have said an excess of urine; for the essence of diabetes consists in a change in the chemical nature of the secretion. Hundertmarck thinks it useful in the itch, and that the juice has brought back the eruption after it has been repelled. The young leaves and the branches in decoction, externally, are said to be useful in itch, and the bark to cure intermittents, particularly those arising from scurvy.

The leaves of the betula alnus, according to Murray, are useful in repelling the milk. When cut, they are warmed till the watery fluid begins to be discharged, and in that state applied.

BIDENS.—Page 245, col. 1, line 20; "*Nat. order discoideæ.*"—This species grows to the height of two feet; the leaves are divided into three, often five, serrated lobes, with yellow flowers, succeeded by flattish angular seeds, with two beards arising from the angles, hooked or barbed downwards, with often a shorter beard from the middle of the back of the seed. The seeds poison the gold fish by adhering to the gills, and Mr. Lightfoot thinks, both from its botanical and chemical analogy with the verbesina acmella, that it may be useful in calculus and nephritic complaints.

BIFARIUS, leaves of plants which point two ways.

BIPERÆ, plants which bear fruit twice a year. In this way Salmasius has explained the perpetual fruit of the Hesperidian gardens, since, from the variety of biferous trees, it would never be wanting.

BIFURCATED, (from *bis*, and *furca*), divided into two branches.

BILIARES DUCTUS are the small ducts arising from the pori biliarii, which unite, and form the ductus hepaticus. See JECUR.

BILIOSA FEBRIS.—Page 246, col. 1, line 29; "*the patient is peculiarly disposed.*"—See Grant on Fevers; Stoll Ratio Medendi, ii. 55, 68, and 129; iii. 357.

BILIS.—Page 250, col. 2, line 62; "*felt on the opposite side at the back.*"—The minuter structure of the liver has been described particularly by some authors; but anatomical injections often deceive. The ultimate branches of the vena portæ, cava, and hepatic artery, with the beginnings of the biliary ducts, are said to be united in clusters, styled *acini*, of an hexagonal shape, surrounded with a lax, cellular texture, in which they freely anastomose; for fluids injected into the vena portæ are returned, according to Mr. Fyfe, through the ductus choledochus. It has been contended that these clusters contain a hollow cavity, in which the change of

the blood takes place; for in brutes they are rounder and better defined than in the human subject; and small cavities appear to be occasionally filled with chalk or calculi; but the opinion has been rejected, chiefly because injections sometimes pass freely, and leave in no instance a knob moulded in a cavity. The cystic duct is sometimes increased by another small duct from the liver before its insertion. Some animals have several small ducts from the liver to the gall bladder; but they seem wanting in man.

We have said, in the article, that the bile contributes to correct the acidity of the aliment, and to prepare the chyle; but it more probably precipitates this fluid from the chyme. See DIGESTIO.

The black bile was supposed by the ancients to produce cancer, elephantiasis, quartan fevers, tumefied spleen, and melancholy. It apparently, however, assumes this appearance from stagnation merely, and this may be owing to a want of irritability in the ducts and intestines: the latter generally produces costiveness; the frequent complaint of literary persons. (Morgagni de Sedibus, xxx. 17; xxxi. 6.) The opposite states of this fluid are the watery, insipid, muddy, pale, or white, and vapid. In each the bile no longer retains its peculiar qualities, but is a watery or an albuminous fluid. Bianchi, in his Historia Hepatis, is the chief authority for these changes. It is said to be sometimes salt, purulent, highly acrid, or acid, to be discharged in an effervescing state, or of a green colour. These circumstances are, however, peculiarly rare. It is sometimes discharged through an ulcer in the liver, and Bloch mentions that the daily quantity amounted from two to three ounces, and continued for fourteen days. De Haen, from Citois (Ratio Medendi, x. 32), informs us, that green bile was discharged from a tumour between the coats of the jejunum. From injuries it has been poured into the abdomen. See JECUR and VESICULA FELLIS.

BISCUIT, SEA.—Page 251, col. 1, line 5; "*with the unleavened biscuit in diseases.*"—Biscuits are preserved by the fumes of burning brimstone, by keeping them in tinned casks, or perhaps more perfectly by charred casks. It was called by the ancients *αρτον διπυρον*, *panis nauticus*, and by Pliny, *vetus aut nauticus panis tusus atque iterum coctus*; so that, when old, they seem to have renewed the biscuit by grinding, and then baking it again. In the middle ages it was styled *paximas* or *panis paximatus*.

BISMUTHUM.—Page 251, col. 2, line 5; "*for more than a hundred years.*"—See Bardsley's Medical Reports.

BISQUE, (perhaps from *biscocta*), a rich broth made by repeatedly stewing pigeons, and chickens, in the gravy of mutton. Demi-bisque contains only half the ingredients, and bisque of fish is made with carp adding their roes, and lobsters.

BISTORTA.—Page 251, col. 2, line 11; "*Nat. order oleraceæ.*"—The leaves of the plant are oval, pointed, wrinkled, of a dark green colour above, and blueish underneath, standing on long pedicles, and continued down them, forming a narrow margin on each side. Among these arise round, slender, jointed, unbranched stalks, furnished with smaller, narrower leaves, without pedicles, bearing on the top spikes of imperfect, quinquepetalous, red flowers, followed by triangular seeds. The root is of the thickness of the finger, compressed, inflected, encircled with annular rugæ, externally of a blackish brown colour, internally of a flesh colour. It blackens a solution of martial vitriol, and tans leather, yielding its virtue equally to water and spirit. Each extract is intensely bitter, and about three drams of the watery may be obtained from an ounce of the root. It has, with little reason, been commended in gonorrhœa; for in the inflammatory stage it is injurious: in the subsequent one useless. In the Alps it is employed in fluor albus, and the Siberian shepherds, after boiling and repeatedly macerating, find it a wholesome aliment. Falks.

BISTERNATUS, a botanical term, implying a leaf which has three divisions, and as many subdivisions.

BIVALVA, (from *bis* and *valva*), seed pods which open lengthways in two divisions.

BLACKBERRY, *rubus fruticosus* Lin. Sp. Pl. 707, *a*. A common fruit in the hedges, vapid, with little flavour, and no particular properties.

BLATTA BYZANTINA, the name given by the ancients to the operculum of the heavy strombus, an univalve shell, and an ingredient in some of their preparations for hysteria and epilepsy. Rondeletius informs us that there were two species, one of which was brought from the Red Sea, and the other from Babylon; that, in his time also, the opercula of all the purpuræ of the ancients, confounded by Linnæus with the buccina and murexes, were employed. The old name was *unguis odoratus*, and they were sometimes directed to be burnt. They then probably resembled in their virtues the burnt sponge.

BLISTERS.—Page 256, col. 2, line 22; "*applied to the part previously rubbed with vinegar.*" See Tralles de Usu Vesicantium, 4 vol. 4to.

BLOOD.—Page 260, col. 1, line 18; "*prophecy is required to foretel the event.*"—The stronger acids coagulate the blood and darken its colour. Sulphuric acid acts on it, as on the greater number of animal and vegetable substances, by charring it, disengaging, in the operation, sulphureous acid gas. Nitric acid separates a large proportion of azot, leaving adipocere, united with oxalic acid. Oxygenated muriatic acid blackens it; an effect the more singular, as oxygen renders its colour brighter. In a temperature about that of boiling water it coagulates, resembling in colour the liver, and by agitation becomes a dark unctuous paste, which experiences little alteration for a long time, if kept dry. It is attracted by the magnet, and when moistened is soon covered with an efflorescence of mild soda. When in a higher temperature in an open crucible it softens, swells, and burns with a strong flame, exhaling a fetid odour. If distilled, an ammoniacal water first comes over, followed by a pungent vapour of carbonated ammonia, a dense yellow smoke, and in

succession some prussic acid, resembling in smell bitter almonds, with jets of phosphoric flame from a decomposition of the phosphats by the carbone. The remainder is mild soda mixed with a slightly oxidated calx of iron, a ferrugineous charcoal, phosphat of lime, with a little muriat of soda and potash. When the blood is calcined in an earthen retort the coal has a brilliant appearance resembling plumbago, with great difficulty incinerated.

BLOOD STONE. See HÆMATITES.

BLOODY FLUX. See DYSENTERIA.

BLUBBER, the FAT OF THE WHALE, commonly employed, when cleared, by boiling, from the skin and the fibres, under the name of *train oil*. It differs little from the OLEUM JECORIS ASELLI, q. v.

BOCCONIA, the GREATER TREE CELANDINE; *b. frutescens* Lin. Sp. Pl. 634. Nat. order *rhœadeæ*, a tall tree of South America and the American islands, from every part of which a yellow fluid may be procured, considerably acrid, and used in removing specks from the cornea.

BOJOBI.—Page 261, col. 2, line 24; "*patient is to swallow in a little water*."—It is a species of BOA, q. v. distinguished by the trivial name of *canina*. The body is green, or of an orange colour, with long stripes, white, or of a pale yellow, on the sides. Two species, one from India and the other from the Brazils, seem to have been confounded by naturalists; but the error is of little importance in a medical view. The creature is harmless, unless when provoked; and its bite is said to be then highly dangerous, and often fatal. See SERPENS, and CAA APIA.

BOLETUS CERVI.—Page 261, col. 2, line 36; under the article AGARICUS we omitted some species, which we shall here shortly mention. The first is the *b. suberosus*, the white cork spunk, growing on the birch and willow. It is sessile, horizontal, semicircular, convex, white and downy above, and plain below. The size greatly differs, from three to twelve inches in diameter. In substance it resembles cork. *B. bovinus* is brown, though sometimes tawny, yellow, and reddish, deep red, purple, or a greenish brown. The flesh is yellow, white, or reddish. When young, they are eat in Germany and Italy; when old, they are the nidi of numerous scarabæi and dermestes. Cows, deer, sheep, and swine, are often greatly disordered by accidentally eating them. The *b. laricis* is the agaric of the shops, formerly used as a cathartic. The substance beneath the bark is extremely white, irregular, spongy, and very light. *B. suaveolens* is the FUNGUS SALICIS. See FUNGUS.

BOLUS GALLICUS.—Page 262, col. 1, line 47; "*not allowed to possess any medical virtues*."—*Armenian bole* is of a bright red colour, inclining to a yellow, hard and compact, with a rough dusty surface. It is in part dissolved by acids, without effervescence, and coloured with an ochry substance. It contains also a portion of the vitriolic acid. *Bole of Blois* is of a light yellow, and effervesces strongly with acids. *Bohemian bole* is yellow, flaky, and inclining to red, but unaffected by acids. *Silesian bole* is also of a pale yellow, and resists the action of acids.

BOLT HEAD, a capacious chemical vessel spherical at the bottom, with a long slender neck.

BONE.—Page 264, col. 2, line 32; "*oleaginous or an oxygenated fluid*."—Cold water has little action on bone, unless in contributing to the septic process. Scalding water separates a considerable quantity of oil, which is said not to be marrow, but a fat combined with the substance of the bone. This fat is also found, by anatomists, to exude from the heads of the bones of the skeleton, and it is no little labour to separate the whole. If the bones, chopped for the purpose of separating their oil, are now ground down to a fine paste, and boiled for some hours with ten times their weight of water, till half is consumed, a thick jelly will be produced; and, by farther evaporation, a good glue. The bones fall to the bottom in a mass, which has little consistence, though not absolutely dry and friable; for the complete separation of the jelly and oil is only effected by very high temperatures, in Papin's digester; but the solution, in this case, has a burnt taste. The jelly does not separate in any great degree by age; for it has been found in button shavings, and in bones which have lain some centuries in a church-yard.

The experiment alluded to, of dissolving the earth and gelatin of bones, leaving the reticulated or spongy cellular membrane, is described by Mr. Hatchett, in the Philosophical Transactions for 1799 and 1800. This spongy cartilage is the substratum of all the hard parts of animals, and it resembles coagulated albumen: but differs from it in being, when dry, semitransparent and brittle, and resisting the action of water, even in Papin's digester. It is also scarcely acted on by any acid, if dilute, and without the assistance of heat, though softened by long maceration, and it then dissolves in ammonia. If nitric acid is heated on this cartilaginous albumen, it is rapidly dissolved with a great discharge of nitrous gas. With caustic, fixed alkali, it forms an animal soap, giving out a large proportion of ammonia. Acids separate this albumen, on which Mr. Hatchett rests as a property distinguishing it from gelatin. It is little changed, even in warm and moist situations. The earth of bones contains the phosphat of lime, with an excess of earth. Fourcroy and Vauquelin have also discovered a small proportion of phosphat of magnesia in the bones of animals; but not of human bones (Annales de Chimie, xlvii.) The bones of oxen, chicken, and fish, contain, when calcined, about one-fortieth of the latter salt: those of sheep and horses somewhat less.

When a bone is heated, without addition, in the open air, it becomes greasy and yellow, yielding a watery vapour, followed by a thick fetid smoke, which burns, with a most offensive ammoniacal smell. After some time, it becomes black, brittle and carbonaceous; and, if heated too suddenly, splits in every direction. When a strong heat has been long continued, a sonorous, white, earthy phosphat only remains, retaining the form of the original bone, and its porous texture. When heated in closed vessels, a limpid faintly smell-

ing water first comes over, which presently becomes ammoniacal, and yields a sensible quantity of carbonat of ammonia. With this, while the heat is still moderate, a clear, yellowish, pungent, but not disagreeably smelling, oil arises, which is that mentioned under the name of Dippel's. As the heat increases, this oil becomes foul and black, at last resembling pitch, strongly ammoniacal, excessively fetid and smoky. Sulphuretted hydrogen, carburetted hydrogen, and carbonic acid gasses are separated in the process. The water and oil, condensed in the receiver, contain a large quantity of carbonat of ammonia, and the former holds in solution some sebacic and prussic acids.

If the distillation is stopped when the oil which comes over is black, the bones are found penetrated with a dark fetid oil. If the whole then be placed in a red heat, in a close vessel, the entire bone becomes uniformly black, glossy, and brittle. This we have mentioned under the name of *ivory black*.

Bones are whitened by alternate exposure to wind, moisture, and sun. Salt water, previous boiling in a weak alkaline ley, or macerating them in the oxymuriatic acid, will greatly contribute, not only to expedite the process, but to render the whiteness more clear and brilliant. Bones are tinged of a fine green colour, by immersing them in a solution of verdigris, in distilled vinegar, and keeping them in a well closed vessel, at a moderate temperature, as in a dunghill, for ten or twelve days. When found of a green colour by being accidentally buried in a copper mine, they are called TURQUOISE STONE BONES. A good black is given by solutions of silver and lead, or immersing them in a water in which equal parts of litharge and quick-lime have been boiled for some hours. Bones will take the vegetable dyes by first moistening them with dilute nitrous acid, and then rubbing in the dye for some time. Bones, we have observed, are tinged with madder, by feeding the animal with it. The quick communication of this colour, and its equally rapid separation, have led physiologists to suppose that the earth of bones was in a state of quick succession; but a late French author, since the article was printed, has shown that the affinity of the madder to the serum is greater than its affinity to the phosphat of lime, and that, in reality, the serum retains and carries it off. This we have mentioned in a subsequent part of the dictionary.

As we have given a general view of the arteries, nerves, and muscles, we shall add a tabular view of the bones. As some minuter separations are not in this table noticed, the number amounts only to about two hundred and fifty.

The bones of the HEAD are,
- The Frontal,
- Parietal,
- Occipital,
- Temporal,
- Ethmoid,
- Sphœnoid.

Of the FACE,
- Superior maxillary,
- Jugal,
- Nasal,
- Lacrymal,
- Palatine,
- Spongy bones,
- Vomer,
- Inferior maxillary.

TEETH,
- Incisores,
- Cuspidati,
- Molares.

TONGUE,
- Os hyoides.

EAR,
- Malleus,
- Incus,
- Stapes,
- Orbiculare os.

Bones of the TRUNK are,
- *Vertebræ*, Cervical,
  - Dorsal,
  - Lumbar.
- *Sacrum.*
- *Coccyx.*
- *Thorax*, Sternum
  - Ribs.
- *Pelvis*, Ossa Inominata,
  - Ischia,
  - Pubes.

Bones of the UPPER EXTREMITY.
- *Shoulder*, Clavicle,
  - Scapula.
- *Arm*, Humeri os.
- *Fore-arm*, Ulna,
  - Radius.
- *Hand.*
  - Carpus, os naviculare,
    - — lunare,
    - — cuneiforme,
    - — orbiculare,
    - — trapezium,
    - — trapezoides,
    - — magnum,
    - — unciforme.
  - Metacarpus,
  - Phalanges.

Bones of the LOWER EXTREMITY.
- *Thigh*, femur.
- *Leg*, patella,
  - tibia,
  - fibula.
- *Foot.*
  - Tarsus, calcaneus,
    - astragalus,
    - cuboides os,
    - naviculare os,
    - cuneiformia ossa.
  - Metatarsus,
  - Phalanges.

Eight sesamoid bones of the thumb and great toe are occasionally found.

There are some diseases of the bones, besides those mentioned in the article, which we may shortly notice. One of these is a slighter *separation* of some of the *articulations*, which scarcely amounts to a luxation. Reichel, in Sandifort's Thesaurus, mentions a separation of the epiphyses from the bone; and an instance occurs in

the Philosophical Transactions, No 484, of a separation of the ossa pubes by the violent leap of a horse. The union of the sacrum with the ossa innominata has been equally disordered by accident. The supposed separation of the symphysis of the pubes in labour has already been the subject of consideration.

A friability of the bones, from the experiments recited, must be owing to a defect of oil, a cause to which their fragility has been attributed (see FRAGILITAS); but Saillant has shown, in the Memoirs of the Society of Medicine, that fragile bones contain too great a proportion of oil. The present disease has sometimes been found after salivation, and occasionally observed without any known cause. A crackling of the bones must be rather attributed to a disease of the joints.

Bones are destroyed by any pressure which deprives them of life, and reduces them to the state of an extraneous body. Mr. Hunter thinks that they are more particularly affected by the access of blood. Indeed a frequent cause of their destruction is the pressure of an aneurismal sac. Sandifort (Exercitationes Academice, ii. 1.) mentions the destruction of the os frontis from a fungus of the dura mater; and an author, in a German collection, describes a resolution of the bones into a gelatinous mass from suppressed itch. The *restoration*, or rather the *regeneration*, of bones is a singular fact, and the most striking instance of it is the union of the bones above and below after a joint has been extirpated, in the operation of Mr. Park. In this case there is no albuminous membrane, such as has been described, no mould in which the bony matter may be deposited; and, in reality, the deposition of the osseous substance in all such circumstances is rude and irregular. It appears probable that all the arteries may at times secrete the calcareous phosphat, and particularly at points where it is already found. Like the calculous matter, it seems only to require a nucleus, on which it may be deposited.

Wounds of the bones, if not reducible to splinters, fissures, or fractures, are rather denudations, with slight indentations. The most satisfactory information we have met with on this subject is in a dissertation of Heister's, preserved by Haller in the fourth volume of his surgical collection, No 123. (De Vulneribus Ossium rite curandis.) Exfoliation is common when bones are denuded from an external cause, probably from the injury in consequence of the bruise; but not equally frequent when from an internal one (Fabricius Hildanus, iv. 90). Quesnay, in the Memoirs of the Academy of Surgery, observes also that denuded bones do not always exfoliate. Unctuous substances are said by some authors to promote, (Petit Oeuvres, Posthumes, i. Præf. 14, &c.) by others, to prevent exfoliation (Vogel ap. Richter Bibliothec. v. 409); but, in general, they are less useful when the denudation proceeds from an external cause.

Pains in the bones are, in general, referable to an inflamed or a distended state of the periosteum; but in some cases they are deeply seated, and may arise from inflammation of what has been styled the internal periosteum. There is little reason to think that bones themselves are, almost in any circumstances, the seat of pain. We have read, though we do not recollect the author, of a gouty affection of the marrow, and it is not impossible that, while misplaced gout tortures every part in turn, it may have some effect on these internal membranes. We find a *decay of the bones* attributed to poisons, and styled *cachexia ossium*; but not on authority which induces us to enlarge on the subject.

BONONIENSIS LAPIS.—Page 265, col. 1, line 22; "*makes a species of phosphorus.*"—It is the heavy spar, the sulphat of barytes, said to resemble the petunse of the Chinese, used in their porcelain; but this we suspect to be a mistake.

BORAX.—Page 265, col. 1, line 36; "*nitrum nativum.*"—The lake which affords the borax contains also a large proportion of common salt, which is found at the bottom, while the borax is chiefly on the sides, where it is constantly reproduced, if taken away. It is condensed by the cold; for the situation of the lake is so high that it is almost constantly frozen. The process of purification is kept secret; but, previous to the repeated solution and crystalisation, the grease which usually covers it is burnt away in a fire somewhat below the melting point of the salt. When pure, its specific gravity is 1.74. Its taste is sensibly alkaline, and it turns syrup of violets green. According to the *latest* experiments it is found to contain thirty-nine parts of the acid, seventeen of soda, and forty-seven of water of crystalisation: 0.02 are lost. It is soluble in six parts of boiling water only, so that crystals are deposited on cooling.

Borax is decomposed by all the mineral and vegetable acids, but, if the excess of soda be only saturated, the solution, on cooling, forms a confused mass: it will unite with half its weight of boracic acid, forming a true borat of soda, while, in its natural state, it is properly styled by later chemists *sub borat of soda.* Borax dissolves most of the metallic oxides, receiving from each its appropriate hue.

BORACIC ACID. See SEDATIVUS SAL.

BORRAGO.—Page 265, col. 2, line 54; "*boragineæ* of Jussieu."—It is a hairy, rough plant, with wrinkled, blackish-green, leaves, approaching an oval shape, with round, hollow stalks, in which the leaves are set alternately. On the tops of the branches the flowers appear monopetalous, generally blue, sometimes reddish, or inclining to white, followed by four black wrinkled seeds. It is perennial, grows wild on waste grounds, and on old walls. The experienced apiarian sows it near his hives, as bees are peculiarly fond of it.

BOTANY.—Page 275, col. 1, line 32; "*be employed with advantage.*"—We shall add, however, the arrangement of vegetables according to the natural system of Linnæus; but we can only offer the principal remedies, as every one employed would make the catalogue too extensive.

Systematic Names.	Officinal.	English.
I.—CONIFERÆ.		
Pinus *sylvestris*	Pix liquida	Scotch fir
—— *picea*	Terebinthina vulgaris	Silver fir tree
—— *abies*	Pix Burgundica	Norway spruce fir tree
—— *larix*	Terebinthina veneta	Common white larch tree
Juniperus *communis*	Juniperus	Common juniper
—— *lycia*	Olibanum *gummi resina*	Olibanum juniper
—— *sabina*	Sabina	Common savin
II.—AMENTACEÆ.		
Salix *fragilis*	Salix	Crack willow
Juglans *regia*	Juglans	Common walnut tree
Quercus *robur*	Quercus	Common oak tree
Pistacia *terebinthus*	Terebinthina chia	Common turpentine tree
—— *lentiscus*	Mastiche	Common mastich tree
III.—COMPOSITÆ.		
Arctium *lappa*	Bardana	Common burdock
Centaurea *benedicta*	Carduus benedictus	Holy thistle
Cynara *scolymus*	Cinara	Artichoke
Leontodon *taraxacum*	Taraxacum	Common dandelion
Artemisia *abrotanum*	Abrotanum	Common southernwood
—— *absinthium*	Absinthium	Common wormwood
—— *vulgaris*	Artemisia	Common mugwort
—— *maritima*	Absinthium maritimum	Sea wormwood
—— *santonia*	Santonicum	Tartarian wormwood
Tanacetum *vulgare*	Tanacetum	Common tansy
Tussilago *farfara*	Tussilago	Colt's foot
Anthemis *nobilis*	Chamæmelum	Common camomile
—— *pyrethrum*	Pyrethrum	Pellitory of Spain
Chicorium *intybus*	Chicoreum	Wild succory
Matricaria *parthenium*	Matricaria	Common feverfew
Lactuca *virosa*	Lactuca virosa	Stinking wild lettuce
Inula *helenium*	Enula campana	Elecampane
Arnica *montana*	Arnica	Mountain arnica
Achillea *millefolium*	Millefolium	Common yarrow
IV.—AGGREGATÆ.		
Valeriana *officinalis*	Valeriana sylvestris	Officinal valerian
V.—CONGLOMERATÆ.		
Plantago *major*	Plantago	Great plantane
Viscum *album*	Viscum	Mistletoe
VI.—UMBELLATÆ.		
Eryngium *maritimum*	Eryngium	Sea eryngo
Daucus *Carota*	Daucus sylvestris	Wild carrot
Conium *maculatum*	Cicuta	Common hemlock
Ferula *assa fœtida*	Asafœtida, *gummi resina*	Asafœtida gigantic fennel
Angelica *archangelica*	Angelica	Garden angelica
Angelica *sylvestris*	Angelica sylvestris	Wild angelica
Phellandrium *aquaticum*	Fœniculum aquaticum	Fine-leaved water hemlock
Œenanthe *crocata*	Œnanthe crocata	Water dropwort
Cicuta *virosa*	Cicuta aquatica	Water hemlock
Bubon *galbanum*	Galbanum, *gummi resina*	Lovage-leaved bubon
Cuminum *cyminum*	Cuminum	Cumin
Coriandrum *sativum*	Coriandrum	Common coriander
Sium *nodiflorum*	Sium	Creeping water parsnep
Imperatoria *ostruthium*	Imperatoria	Common masterwort

Systematic Names.	Officinal.	English.
Pastinaca *opopanax*	Opoponax, *gummi resina*	Rough parsnep
Anethum *graveolens*	Anethum	Common dill
——— *fœniculum*	Fœniculum	Common fennel
Carum *carui*	Caruon	Common carraway
Pimpinella *saxifraga*	Pimpinella	Small burnet saxifrage
——— *anisum*	Anisum	Anise
Apium *petroselinum*	Petroselinum	Common parsley
Ligusticum *levisticum*	Levisticum	Lovage

VII.—HEDERACEÆ.

Vitis *vinifera*	Vitis	Common vine
Panax *quinquefolium*	Ginseng	Ginseng

VIII.—SARMENTACEÆ.

Smilax *China*	China	Chinese smilax
Smilax *sarsaparilla*	Sarsaparilla	Sarsaparilla smilax
Cissampelos *pareira*	Pareira brava	Pareira brava cissampelos
Aristolochia *serpentaria*	Serpentaria virginiana	Snakeroot birthwort
——— *longa*	Aristolochia rotunda	Long-rooted birthwort
——— *clematitis*	Aristolochia tenuis	Climbing birthwort
Asarum *europæum*	Asarum	Asarabacca
Ruscus *aculeatus*	Ruscus	Knee holly

IX.—STELLATÆ.

Rubia *tinctorum*	Rubia tinctorum	Dyer's madder
Galium *aparine*	Aparine	Cleavers
Spigelia *marilandica*	Spigelia marilandica	Perennial worm-grass

X.—CYMOSÆ.

Coffea *arabica*	Coffea	Coffee-tree

XI.—CUCURBITACEÆ.

Cucumis *colocinthis*	Colocynthis	Bitter cucumber
Momordica *elaterium*	Cucumis agrestis	Wild cucumber
Bryonia *alba*	Bryonia	White briony

XII.—SOLONACEÆ.

Solanum *nigrum*	Solanum	Garden nightshade
Solanum *dulcamara*	Dulcamara	Woody nightshade
Atropa *belladonna*	Belladonna	Deadly nightshade
Atropa *mandragora*	Mandragora	Mandrake
Hyosciamus *niger*	Hyosciamus	Black henbane
Datura *stramonium*	Stramonium	Common thorn apple
Nicotiana *tabacum*	Nicotiana	Tobacco
Capsicum *annuum*	Piper indicum	Annual capsicum
Physalis *alkekengi*	Alkekengi	Winter cherry
Verbascum *thapsus*	Verbascum	Common mullein
Digitalis *purpurea*	Digitalis	Common foxglove
Strychnos *nux vomica*	Nux vomica	Vomic nut

XIII.—CAMPANACEÆ.

Convolvulus *scammonia*	Scammonium	Scammony bindweed
Convovulus *jalappa*	Jalapium	Jalap bindweed
Lobelia *siphilitica*	Lobelia	Blue lobelia
Viola *odorata*	Viola	Sweet violet
Viola *tricolor*	Viola tricolor	Pansy

XIV.—CONTORTÆ.

Cinchona *officinalis*	Peruvianus cortex	Peruvian bark tree

Systematic Names.	Officinal.	English.
Cinchona *rubra*	Cortex peruvianus ruber	Red peruvian bark
Asclepias *vincetoxicum*	Vincetoxicum	Officinal swallow-wort

XV.—ROTACEÆ.

Gentiana *lutea*	Gentiana	Yellow gentian
Gentiana *purpurea*	Cursuta	Purple gentian
Chironia *centaurium*	Centaurium minus	Lesser centaury
Menyanthes *trifoliata*	Trifolium paludosum	Buck bean

XVI.—SEPIARIÆ.

Olea *europæa*	Oliva	Common European olive

XVII.—BICORNES.

Santalum *album*	Santalum citrinum	Yellow saunders
Arbutus *uva ursi*	Uva ursi	Bear-berry
Styrax *officinale*	Styrax, *resina*	Storax tree
Styrax *benzoin*	Benzoe, *resina*	Gum benjamin tree
Rhododendron *chrysanthemum*	Rhododendron	Yellow rhododendron

XVIII.—ASPERIFOLIÆ.

Anchusa *tinctoria*	Anchusa	Dyer's bugloss
Anchusa *officinalis*	Buglossum	Officinal bugloss
Pulmonaria *officinalis*	Pulmonaria	Common lungwort
Lithospermum *officinale*	Lithospermum	Common gromwell
Symphytum *officinale*	Consolida	Comfrey
Cynoglossum *officinale*	Cynoglossum	Houndstongue
Borago *officinalis*	Borago	Borage

XIX.—VERTICILLATÆ.

Teucrium *marum*	Marum syriacum	Herb mastich
Teucrium *scordium*	Scordium	Water germander
Teucrium *chamædrys*	Chamædrys	Common germander
Thymus *vulgaris*	Thymus	Garden thyme
Thymus *sr pyllum*	Serpyllum	Wild thyme
Melissa *officinalis*	Melissa	Common balm
Hyssopus *officinalis*	Hyssopus	Common hyssop
Lavandula *spica*	Lavendula	Common lavender
Origanum *vulgare*	Origanum	Common marjoram
Origanum *marjorana*	Majorana	Sweet marjoram
Origanum *dictamnus*	Dictamnus creticus	Dittany of Crete
Mentha *piperita*	Mentha piperitis	Pepper-mint
Mentha *viridis*	Mentha sativa	Spear-mint
Mentha *pulegium*	Pulegium	Pennyroyal-mint
Marrubium *vulgare*	Marrubium	Common horehound
Salvia *officinalis*	Salvia	Garden sage
Rosmarinus *officinalis*	Rosmarinus	Rosemary
Glecoma *hederacea*	Hedera terrestris	Ground ivy
Betonica *officinalis*	Betonica	Wood betony

XX.—PERSONATÆ.

Gratiola *officinalis*	Gratiola	Hedge-hyssop
Veronica *officinalis*	Veronica	Male speedwell
Veronica *beccabunga*	Becabunga	Brooklime
Verbena *officinalis*	Verbena	Common vervain
Eupharsia *officinalis*	Euphrasia	Common eyebright
Antirrhinum *linaria*	Linaria	Common toadflax
Vitex *agnus castus*	Agnus Castus	Chaste tree

XXI.—RHOEADES.

Systematic Names.	Officinal.	English.
Papaver *rhœas*	Papaver erraticum	Red poppy
Papaver *somniferum*	Papaver album, Opium	Common white poppy
Chelidonium *majus*	Chelidonium majus	Greater celandine

XXII.—PUTAMINEÆ.

Capparis *spinosa*	Capparis	Caper-bush

XXIII.—SILIQUOSÆ.

Sisymbrium *nasturtium*	Nasturtium aquaticum	Water-cresses
Cardamine *pratensis*	Cardamine	Ladies smock
Sinapis *nigra*	Sinapi	Common mustard
Cochlearia *officinalis*	Cochlearia hortensis	Scurvy-grass
Cochlearia *armoracia*	Raphanus rusticanus	Horse-radish
Erysimum *officinale*	Erysimum	Hedge mustard
Erysimum *alliaria*	Alliaria	Sauce-alone

XXIV.—PAPILIONACEÆ.

Dolichos *pruriens*	Dolichos	Cowhage
Geoffroya *inermis*	Geoffræa	Smooth bastard cabbage-tree
Spartium *scoparium*	Genista	Common broom
Glycyrrhiza *glabra*	Glycyrrhiza	Common liquorice
Astragalus *tragacantha*	Tragacantha, *gummi*	Goats thorn milk vetch
Astragalus *exscapus*	Astragalus exscapus	Stemless milk vetch
Trigonella *fœnum græcum*	Fœnum græcum	Common fenugreek
Pterocarpus *santalinus*	Santalum rubrum	Red saunders

XXV.—LOMENTACEÆ.

Cassia *senna*	Senna	Senna cassia
Cassia *fistula*	Cassia fistularis	Purging cassia
Mimosa *catechu*	Catechu, *extractum*	Catechu mimosa
Mimosa *nilotica*	Arabicum, *gummi*	Egyptian thorn mimosa
Tamarindus *indica*	Tamarindus	Tamarind tree
Hæmatoxylum *campechianum*	Lignum Campechense	Logwood tree
Polygala *senega*	Seneka	Rattlesnake-root milk-wort
Fumaria *officinalis*	Fumaria	Common fumitory

XXVI.—MULTISILIQUÆ.

Aconitum *napellus*	Napellus	Common wolf's bane
Delphinium *staphisagria*	Staphisagria	Stavesacre
Helleborus *niger*	Helleborus niger	Black hellebore
Helleborus *fœtidus*	Helleboraster	Bear's foot
Anemone *pratensis*	Pulsatilla nigricans	Meadow anemone
Ranunculus *acris*	Ranunculus pratensis	Meadow crowfoot
Pæonia *officinalis*	Pæonia	Common peony
Clematis *recta*	Flammula Jovis	Upright virgin's bower
Dictamnus *albus*	Dictamnus albus	Bastard dittany
Ruta *graveolens*	Ruta	Common rue

XXVII.—SENTICOSÆ.

Potentilla *reptans*	Pentaphyllum	Cinquefoil
Rubus *idæus*	Rubus idæus	Raspberry
Rosa *centifolia*	Rosa damascena	Hundred-leaved rose
Rosa *gallica*	Rosa rubra	Red officinal rose
Rosa *canina*	Cynosbatus, *fructus*	Hip, or dog rose
Agrimonia *eupatoria*	Agrimonia	Common agrimony
Geum *urbanum*	Caryophyllata	Common avens

XXVIII.—POMACEÆ.

Systematic Names.	Officinal.	English.
Pyrus *cydonia*	Cydonium malum	Quince tree
Prunus *domestica*	Prunum gallicum	Prune, or plum tree
Prunus *spinosa*	Prunum sylvestre	Sloe tree
Prunus *laurocerasus*	Laurocerasus	Cherry laurel
Amygdalus *communis*	Amygdala	Common almond
Amygdalus *persica*	Persica	Peach tree
Punica *granatum*	Granatum	Pomegranate
Citrus *medica*	Limon	Lemon tree
Citus *aurantium*	Aurantium hispalense	Orange tree
Ribes *rubrum*	Ribes rubrum	Red currant
Ribes *nigrum*	Ribes nigrum	Black currant

XXIX.—HESPERIDEÆ.

Myrtus *pimenta*	Pimento	All-spice
Caryophyllus *aromaticus*	Caryophyllum aromaticum	Clove tree
Melaleuca *leucadendron*	Cajeputa	Cajeput tree

XXX.—SUCCULENTÆ.

Sedum *acre*	Sedum acre; s. minus	Wall stone-crop
Saxifraga *granulata*	Saxifraga alba.	White saxifrage

XXXI.—COLUMNIFERÆ, S. MALVACEÆ.

Althæa *officinalis*	Althæa	Marsh mallow.
Malva *sylvestris*	Malva	Common mallow.

XXXII.—GRUINALES.

Guaiacum *officinalis*	Guaiacum	Guaiacum
Quassia *amara*	Quassia	Bitter quassia
Quassia *simaruba*	Simarouba	Simaruba quassia
Linum *usitatissimum*	Linum	Common flax
Oxalis *acetosella*	Acetosella	Wood-sorrel.

XXXIII.—CARYOPHYLLEÆ.

Dianthus *caryophyllus*	Caryophyllum rubrum	Clove pink
Saponaria *officinalis*	Saponaria	Soapwort

XXXIV.—CALYCANTHEMÆ.

XXXV.—ASCYROIDEÆ.

Cistus *creticus*	Ladanum, *resina*	Cretan cistus
Hypericum *perforatum*	Hypericum	St. John's wort
Fraxinus *ornus*	Manna	Flowering ash

XXXVI.—COADUNATÆ.

XXXVII.—DUMOSÆ.

Rhamnus *catharticus*	Spina cervina	Purging buckthorn
Sambucus *nigra*	Sambucus	Common black elder
Sambucus *ebulus*	Ebulus	Dwarf elder
Rhus *coriaria*	Sumach	Elm-leaved sumach
Amyris *gileadensis*	Balsamum gileadense	Balsam of gilead tree
Copaifera *officinalis*	Balsamum copaiva	Balsam of capaiva tree
Toluifera *balsamum*	Balsamum tolutanum	Balsam of tolu tree

XXXVIII.—TRIHILATÆ.

Æsculus *Hippocastunum*	Hippocastanum	Horse-chesnut
Tropæolum *majus*	Nasturtium indicum	Nasturtium

SYSTEMATIC NAMES.	OFFICINAL.	ENGLISH.
Berberis *vulgaris.*	Berberis	Common barberry
Swietenia *mahagoni*	Swietenia	Mahogany
	XXXIX.—TRICOCCÆ.	
Croton *cascarilla*	Cascarilla	Willow leaved croton
Clutia *eluteria*	Cascarilla	Cascarilla
Ricinus *communis*	Ricinus	Palma christi
Siphonia *elastica*	Resina elastica	Elastic resin tree
Thea	Thea	Tea tree
Wintera *aromatica*	Winteranus (cortex)	Winter's bark-tree
	XL.—OLERACEÆ.	
Salsola *kali*	Barilla, natron	Prickly salt-wort
Chenopodium *vulvaria*	Atriplex fœtida	Stinking goosefoot
Rumex *aquaticus*	Hydrolapathum	Water dock
Rumex *acetosa*	Acetosa	Common sorrel
Rheum *palmatum*	Rhabarbarum	Officinal rhubarb
Polygonum *bistorta*	Bistorta	Bistort snakeweed
	- - - - - - - - - - - - - - - - - - -	
Laurus *cinnamomum*	Cinnamomum	Cinnamon tree
Laurus *nobilis*	Laurus	Sweet bay
Laurus *sassafras*	Sassafras	Sassafras tree
Laurus *camphora*	Camphora	Camphor tree
Canella *alba*	Canella alba	Laurel-leaved canella
Myristica *moschata*	Nux moschata	Nutmeg tree
	XLI.—SCABIDRÆ.	
Parietaria *officinalis*	Parietaria	Wall pellitory
Dorstenia *contrayerva*	Contrayerva	Contrayerva
Ficus *carica*	Carica	Fig tree
Urtica *dioica*	Urtica	Common nettle
Morus *nigra*	Morum	Mulberry tree
Ulmus *campestris*	Ulmus	Common elm
	XLII.—VERPECULÆ.	
Daphne *mezereum*	Mezereum	Mezereon
	XLIII.—PALMÆ.	
	XLIV.—PIPERITÆ.	
Piper *cubeba*	Cubebæ	Cubebs
Piper *nigrum*	Piper nigrum	Black pepper
Piper *longum*	Piper longum	Long pepper
Acorus *calamus*	Calamus aromaticus	Sweet flag
Arum *maculatum*	Arum	Common arum
	XLV.—SCITAMINEÆ.	
Amomum *zingiber*	Zingiber	Ginger
Amomum *cardamomum*	Cardamomum minus	Cardamom
Curcuma *longa*	Curcuma	Turmeric
Kæmpferia *rotunda*	Zedoaria	Zedoary
	XLVI.—LILIACEÆ.	
Lilium *candidum*	Lilium album	Common white lily
Scilla *maritima*	Scilla	Officinal squill
Allium *sativum*	Allium	Common garlic
Veratrum *album*	Helleborus albus	White hellebore
Colchicum *autumnale*	Colchicum	Common meadow saffron
Crocus *sativus*	Crocus	Saffron
Aloës *species variæ*	Aloë	Aloe
Convallaria *polygonatum*	Convallaria	Solomon's seal

XLVII.—ENSATÆ.

Systematic Names.	Officinal.	English.
Iris *florentina*	Iris florentina	Florentine orris
Iris *pseudo-acorus*	Iris palustris	Yellow water flag

XLVIII.—ORCHIDEÆ.

Orchis *mascula*	Satyrium	Male orchis

XLIX.—TRIPETALOIDEÆ.

Calamus *rotang*	Sanguis draconis	Dragon's blood tree

L.—CALAMARIÆ.

LI.—GRAMINA.

Saccharum *officinarum*	Saccharum	Sugar cane
Zea *mayz*	Mayz	
Hordeum *dystichon*	Hordeum	Barley
Triticum *hybernum*	Triticum	Wheat
Avena *sativa*	Avena	Oats

LII.—FILICES.

Polypodium *vulgare*	Polypodium	Common polypody
Polypodium *filix mas*	Filix	Male fern
Asplenium *trichomanoides*	Trichomanes	Maidenhair
Asplenium *scolopendrium*	Scolopendrium	Hart's tongue

LIII.—MUSCI.

LIV.—ALGÆ.

Lichen *islandicus*	Lichen islandicus	Eryngo-leaved lichen
Lichen *caninus*	Lichen cinereus terrestris	Ground liverwort

LV.—FUNGI.

Boletus *igniarius*	Agaricus chirurgorum	Agaric

Botrys Mexicana.—Page 275, col. 2, line 10; "*juice adheres to the fingers.*"—The taste of the former is somewhat bitter, and the distilled water is milky, containing the smell and taste of the plant, but a very small proportion only of essential oil can be obtained from it. One portion of this oil is fluid, yellow, aromatic, bitter, and fragrant like the plant; the other coagulates in the cold like suet, and is readily dissolved in spirit of wine. The watery infusion is bitter, with a fragrance inferior to that of the plant: the spirituous tincture, with a slight bitterness, has also an acrid taste. Somewhat more than two drams of a watery extract of a bitter, saltish taste is obtained from an ounce of the plant, and it is soon covered with an efflorescence of saline crystals. The spirituous extract is less in quantity, amounting only to a dram and a scruple, but superior in bitterness and acrimony. From the shape of the crystals, and their crackling in the fire, they are supposed to be nitrous. The plant has been styled, from its sensible qualities, an aperient, an abstergent, a carminative, and an analeptic, peculiarly useful not only in pituitous asthma but in hysteria.

Boulimus.—Page 276, col. 2, line 46; "*appetite for food is followed by vomiting.*"—Another species should have been added, viz. *b. organica.* In the first volume of the Memoirs of the Medical Society we find a case recorded by Mr. French, in which, from an hydrops ovarii, the stomach was raised on the left side, so that the pylorus was the lowest part; and Ruysch (Obs. 74) relates an instance of a similar complaint from a relaxation of the pylorus. We can scarcely reconcile Blasius' observation of a double stomach with the symptoms of this disease, and hesitate a little in admitting the troops of lice found by Bonetus (Sepulcretum, lib. iii. ii. 9). A liver of an enormous size is mentioned among the causes which probably drew the pylorus downward; and Bonetus records the insertion of the ductus choledochus into the stomach as a cause, (l. c. lib. iii. ii. 6; see also Anatomia Vesalii, v. 3. 8). The structure of the intestines, which had not their usual tortuous course, is said to have produced the same effect. We know that all carnivorous animals, whose intestines are shorter and less convoluted than those of the human race, bear fasting indifferently. The narcotics, particularly opium and coffee, are frequently useful to lessen the painful sensation; for, in the organic species we are now describing, a cure can scarcely be expected.

Bractea, a thin plate; but in botany it implies a floral leaf, or is the name of the vegetable organ on

which the plant depends for support. It is commonly of the same duration with the other leaves, which is of importance in the distinction, as it might be otherwise confounded with the calyx, which withers when the fruit is ripe.

BRANCHIÆ, the gills of fish.

BRANDY.—Page 270, col. 1, line 2; "*See Annales de Chimie, vol. xxxvii.*" – See VINUM ADUSTUM. Like all other wines and spirits, it is an indirect stimulus; in other words, a most destructive narcotic if used in excess; but often useful and salutary at proper seasons and in moderate quantities.

BRASILIANUM LIGNUM.—Page 279, col. 1, line 17; "*Santalus Adulterinus.*"—*Hæmatoxylum campechianum* Lin. Sp. Pl. 549.

BRAWN. The neck of the boar boned, firmly rolled into a cylinder, and afterwards boiled. An old animal is preferred, as the skin is more horny. It is cut thin, and eaten with vinegar and mustard; condiments which render it more digestible. It is, however, to many persons an insipid food, and not very soluble.

BREVIA VASA.—Page 281, col. 2, line 45; "*the veins which receive this name.*"—The veins accompany the arteries; but the term is chiefly applied to the latter. See SPLEN.

BRISTOLIENSIS AQUA.—Page 282, col. 1, line 28; "*adds to the ingredients sulphat of soda.*"—Dr. Carrick obtained from a wine gallon, muriated magnesia $7\frac{1}{4}$ grains, common salt 4, sulphated soda $11\frac{1}{4}$, selenite $11\frac{3}{4}$, carbonated lime $13\frac{1}{2}$, in the whole forty-seven grains and three quarters. Dr. Nott found, probably in a drier season, a residuum of fifty-two grains. The specific gravity of this water is 1.00077, and its heat 74°, nearly. It is said, like the Bath water, to occasion a sensible glow in the stomach, and to produce occasionally headachs.

BRITISH OIL, a dark petroleum, found sometimes floating in springs, but more frequently produced by distillation from a stone which contains it. This oil is slightly stimulant, and it is recommended as a discutient in bruises.

BROCCOLI. *Brassica italica.* See BRASSICA.

BROMATOLOGIA, (from βρωμα, *food,* and λογος, *a discourse*). The doctrines of aliment.

BRONCHITIS, a term lately introduced by Dr. Badham, implying inflammations of the bronchiæ, not decidedly catarrhal. He considers this disease as of three kinds, the *b. acuta, asthenica,* and *chronica,* viz. the active inflammation of the membrane lining the bronchiæ, the peripneumonia notha, and the catarrhus senilis. He seems, in some places, to allude to the croop, but not distinctly, and with no accurate discrimination of its peculiar membranous discharge.

The acute bronchitis, which is the only novelty in the work, does not appear to be distinguished from catarrh; for the bronchial glands are occasionally turgid; and though marks of inflammation are at first obvious, debility soon comes on, and every symptom apparently marks languid circulation through these organs (Badham on the inflammatory Affections of the mucous Membrane of the Bronchiæ). See PERIPNEUMONIA NOTHA, CATARRHUS SUFFOCATIVUS, and SENILIS.

BRUSH. The flesh brush and its use are generally known (see FRICTIO); but we introduce this article for the purpose of mentioning two instruments of this kind; one is the *metallic brush* of *M. Molwitz,* the other the *stomach brush.* The first consists of wires terminating in small knobs, fixed round a wheel, and is used by turning an axle which gives motion to the wheel. He seems willing to compare it with the metallic tractors; but thinks the action of both instruments purely mechanical. The stomach brush we cannot readily describe, as we have not met with an intelligible account of it. The stimulus is given by hairs, which bend in passing through the œsophagus; but recover their rectangular position when in the stomach, in consequence of their elasticity. It is called by the German authors *excutia ventriculi,* and is used to stimulate the organ, and to assist the discharge of heavy viscid mucus.

BRUTA.—Page 287, col. 2, line 7; "*teaching the use of salt in clysters.*"—This article should have been marked with inverted commas. It is the opinion of others, and not our own. The fact is not true; nor is it probable, if the Almighty had deigned to instruct us, that this would have been the means, which few could have profited by. The whole is truly ridiculous.

BRYONIA ALBA.—Page 287, col. 2, line 37; "*bryonia alba* Lin. Sp. Pl. 1438."—The flowers of the bryony are bell-shaped, monopetalous, of a greenish white, followed by red berries, containing an extremely viscid pulp with small seeds. The root is as thick as a man's leg, brownish or yellowish without, and white within.

The excavated root of the bryony is occasionally filled with beer, with the recent juice of the plant, or with sugar, which deliquesces in 24 hours. In different doses these are employed in dropsies; in the stronger habits, it is said, with considerable success. Externally, if cut in pieces, slightly bruised, and applied warm to the legs, repeating the application every twelve hours, it is said, by Tissot, to evacuate a large quantity of water. In other hands it has been less successful.

Its external application has been also advantageous in sciatica and scrophulous swellings, and in stiffness of the joints. It is sometimes sold instead of the mechoacanna. Its fæcula formerly employed is wholly useless. The Wirtemberg Dispensatory contains an *unguentum agrippæ* of which the larger proportion is bryony; and it is said to be useful as a cathartic in enlarged spleens, and externally in cold tumours.

BUFO.—Page 293, col. 1, line 15; "*it is often found under bramble bushes.*"—The scientific name of this animal in the system of Linnæus is *rana bufo,* in modern

authors of the natural order of *batrachiens*; whose character is a short, thick body, often rugged, four paws, the posterior rarely longer than the body, toes without any viscous cushion at their extremities, and no tail. The animal is not formed for escape, and, when in danger, inflates his body, rendering it very hard and elastic, throwing from the rugged protuberances a fetid viscid fluid, and another fluid from the anus, both supposed, without reason, to be poisonous. When these means of defence fail, the animal attempts to bite. His hold is firm; but the wound, though attended with a slight inflammation, is soon cured. The fluids thrown from the verrucæ and the anus are not most slightly injurious, unless from a previous wound, and even then an inconsiderable inflammation only ensues. In warm countries these fluids are more acrid, and may be truly styled poisonous. The frothy fluid on plants, called *toad's spittle*, is in reality the nidus of an insect. Toads eat worms, insects, &c., sometimes bread, and different vegetables; and some are so tame as to come when called, and eat what is offered. A curious instance of this kind, recorded by Mr. Pennant, occurred in Devonshire. They most commonly come from their retreats after a warm rain. At other times they remain quiet in their holes, not in a state of torpor, but merely of weakness from want of food, and from cold. The male is peculiarly active in assisting the female when she lays her eggs, and singularly attentive to the young ones, when ready to escape from them. Toads are apparently long lived, and their legs are often eaten in France instead of the legs of frogs, to which they are said to be scarcely inferior, except in tenderness.

Toads, dried and powdered, have been used not only as a diuretic but as a sudorific: applied alive on the head the animal is supposed to relieve pains of that part, and, on any other organ, to draw the gout to it. We need scarcely add that these fancies have little foundation.

The common toad has large projecting parotids, an ash-coloured body, sometimes little yellowish above, and white below. The verrucæ are of an obscure red, the hinder feet demi-palmated.

BUCONITÆ, TOAD-STONES, fossils convex and smooth on one side, flat and unequal on the other; regular and irregular. They were supposed to be calculi from the head of a toad, and are the origin of the fable, that the head of this animal produces pearls. They are now known to be the teeth of the anarrhicus, or the sea wolf. Those which have concentric circles of different colours are called *serpent's or wolf's eyes*. Various medical virtues have been attributed to them, but on no secure foundation.

BUGLOSSUM.—Page 293, col. 1, line 45; "*its roots are mucilaginous*."—The ancient bugloss was probably not the same as the modern; for the latter does not merit the name of euphrosine given by Pliny. Historia Naturalis, xxv. 8.

BULBOCASTANUM.—Page 293, col. 2, line 6; "*tuberous, and whitish*."—The lower leaves are winged, and cut into several divisions, finer and smaller than those of saxifrage. The stalk is about twelve inches in height, with one leaf about the middle, as fine and slender as fennel, with similar leaves at every division of the branches, on the tops of which grow thin umbels of small white flowers.

BULBO CAVERNOSUS, a muscle named from its origin and insertion. See ACCELERATOR URINÆ.

BULBUS.—Page 293, col. 2, line 24; "*easily taken hold of from its roundness*."—In botany, it means a large bud, generally produced under the ground, on or near the roots of some herbaceous plants, from hence called *bulbous*. Linnæus describes it as a species of hibernaculum produced on the root, consisting of stipulæ and foot-stalks, the rudiments of former leaves, with scales or bark. In the bulbous plants, of which the tulip, onion, and lily are examples, the root is properly the hybernaculum, which contains and protects the embryo of the future plant. At the lower part of this bulb a fleshy tubercle, from which a number of fibres proceed, is observable. This part is strictly the root, as the other is only the nursery of the plant, which, after a series of years, perishes, leaving at its sides a number of smaller bulbs for perpetuating the species. Dr. Grew remarks, that all bulbous roots may be considered as hermaphrodites, by which he meant roots and trunk in one. When uniform, they are styled *solid*; when composed of numerous infolding coats, *tunicated*; when composed of lesser scales, *squamose;* when there are only two to each plant, *duplicate;* when several, *aggregate*.

BUPLEURUM ROTUNDIFOLIUM, Lin. Sp. Pl. 340, is an annual, growing in fields. The seed is black, long, furrowed, and of an austere taste, which is weak in the plant. Each is accounted a vulnerary. It was formerly used to prevent and cure herniæ; but as a steady pressure was also applied, the effect was ambiguous. It is recommended also as a discutient, and to take off the blackness from bruises.

BUPRESTIS.—Page 294, col. 2, line 6; "*are possessed in some measure of the same virtues*."—It is a coleopterous insect of singular beauty. The body is long: two membranous wings are concealed under very hard scales; filiform, serrated antennæ, a little shorter than the breast plate, are composed of eleven joints; the mouth is furnished with two lips, two horny mandibles, and two unidentated jaws, and four short filiform antennulæ: it has five joints in the tarsi.

BURGEON, in botany, an eye, bud, or gem.

BURSÆ MUCOSÆ.—Page 295, col. 1, line 39; "*the outside of the foot*."—These bursæ are found in the extremities of the body; and the number of those discovered is said to be one hundred and forty, viz. thirty in each superior, and thirty-seven in each inferior, extremity. Many are placed on the inner sides of the tendons between them and the bone, some between the tendon and the integuments; many are external and internal with respect to the tendons; some between contiguous tendons, or between tendons and ligaments. These sacs are also interposed where processes of bone play on ligaments, or one bone on another. The bursæ sometimes communicate, and when tendons separate the sacs are also divided. In very

young and in very old persons they sometimes communicate with the cavities of the joints, without any apparent injury to its motion.

The bursæ, in many respects, resemble the capsular ligaments of the joints; for the internal membrane of each is thin and dense; between them and the bones layers of cartilage, or articular cartilages, are interposed; fatty matter intervenes at least in part, in each where the motion is considerable; and the chemical nature of the containing fluids is the same. The bursæ often communicate with the cavities of the joints, and it is equally necessary, in operations, to guard them from too free access of the external air. As Mr. Gooch's enumeration has been thought too concise, we shall transcribe a more complete catalogue from Dr. Hooper.

"Bursæ mucosæ of the head.—1. A bursa of the superior oblique muscle of the eye, situated behind its trochlea in the orbit. 2. The bursa of the digastricus, situated in the internal surface of its tendon. 3. A bursa of the circumflexus, or tensor palati, situated between the hook-like process of the sphenoid bone and the tendon of that muscle. 4. A bursa of the sterno hyoideus muscle, situated between the os hyoides and larynx.

"Bursæ mucosæ situated about the shoulder joint. 1. The external acromial, situated under the acromion, between the coracoid process, deltoid muscle, and capsular ligament. 2. The internal acromial, situated above the tendon of the infra spinatus and teres major: it often communicates with the former. 3. The coracoid bursa, situated near the root of the coracoid process: it is sometimes double, and sometimes triple. 4. The clavicular bursa, found where the clavicle touches the coracoid process. 5. The subclavian bursa, between the tendon of the subclavicularis muscle and the first rib. 6. The coraco-brachial, placed between the common origin of this muscle, the biceps, and the capsular ligament. 7. The bursa of the pectoralis major, situated under the head of the humerus, between the internal surface of the tendon of that muscle and another bursa placed on the long head of the biceps. 8. An external bursa of the teres major, under the head of the os humeri, between it and the tendon of the teres major. 9. An internal bursa of the teres major, found within the muscle where the fibres of its tendon diverge. 10. A bursa of the latissimus dorsi, between the tendon of this muscle and the os humeri. 11. The humero bicipital bursa, in the vagina of the tendon of the biceps. There are other bursæ mucosæ about the humerus, but their situation is uncertain.

"Bursæ mucosæ situated near the elbow joint.—1. The radio-bicipital, situated between the tendon of the biceps, brachialis, and anterior tubercle of the radius. 2. The cubito radial, between the tendon of the biceps, supinator brevis, and the ligament common to the radius and ulna. 3. The anconeal bursa, between the olecranon and tendon of the anconeus muscle. 4. The capitulo-radial bursa, between the tendon common to the extensor carpi radialis brevis, and extensor communis digitorum and round head of the radius. There are other bursæ, but as their situation varies, they are omitted.

"Bursæ of the inferior part of the forearm and hand.—*On the inside of the wrist and hand.* 1. A very large bursa, for the tendon of the flexor pollicis longis. 2. Four short bursæ on the fore part of the tendons of the flexor sublimis. 3. A large bursa behind the tendon of the flexor pollicis longus, between it and the fore part of the radius, capsular ligament of the wrist, and os trapezium. 4. A large bursa behind the tendons of the flexor digitorum profundus, and on the fore part of the end of the radius, and fore part of the capsular ligament of the wrist. In some subjects it communicates with the former. 5. An oblong bursa, between the tendon of the flexor carpi radialis and os trapezium. 6. A very small bursa between the tendon of the flexor carpi ulnaris and os pisiforme.

"*On the back part of the hand and wrist.* 7. A bursa between the tendon of the abductor pollicis longus and the radius. 8. A large bursa between the two extensores carpi radiales. 9. Another below it, common to the extensores carpi radiales. 10. A bursa at the insertion of the tendon of the extensor carpi radialis. 11. An oblong bursa, for the tendon of the extensor pollicis longus, and which communicates with 9. 12. A bursa, for the tendon of the extensor pollicis longus, between it and the metacarpal bone of the thumb. 13. A bursa between the tendons of the extensor of the fore, middle, and ring-fingers. 14. A bursa for the extensors of the little finger. 15. A bursa between the tendon of the extensor carpi ulnaris and ligament of the wrist. There are also bursæ mucosæ between the musculi lumbricales and interossei.

"Bursæ situated near the hip joint.—*On the fore part of the joint.* 1. The ileo-puberal, situated between the iliacus internus, psoas magnus, and the capsular ligament of the head of the femur. 2. The pectineal, between the tendon of the pectineus and the thigh bone. 3. A small bursa of the gluteus medius muscle, situated between it and the great trochanter, before the insertion of the pyriformis. 4. A bursa of the gluteus minimus muscle, between its tendon and the great trochanter. 5. The gluteo fascial, between the gluteus maximus and vastus externus.

On the posterior part of the hip joint. 6. The tubero-ischiatic bursa, situated between the obturator internus muscle, the posterior spine of the ischium, and its tuberosity. 7. The obturatory bursa, which is oblong, and found between the obturator internus and gemini muscles and the capsular ligament. 8. A bursa of the semi-membranosus, under its origin and the long head of the biceps femoris. 9. The gluteo-trochanteral bursa, situated between the tendon of the psoas muscle and the root of the great trochanter. 10. Two glutei-femoral bursæ, situated between the tendon of the gluteus maximus and os femoris. 11. A bursa of the quadratus femoris, situated between it and the little trochanter. 12. The iliac bursa, situated between the tendon of the iliacus internus and the little trochanter.

"Bursæ mucosæ situated near the knee joint.—1. The supra-genual, which adheres to the tendons of the vastus and cruralis and the fore part of the thigh-bone. 2. The infra-genual bursa, situated under the ligament of the patella, and often communicates with the above. 3. The anterior genual, placed between the tendon of the sartorius, gracilis, and semi-tendinosus, and internal and lateral ligament of the knee. 4. The posterior genual, which is sometimes double, and is situated between the tendons of the semi-membranosus, the internal head of the gastrocne-

mius, the capsular ligament, and internal condyle. 5. The popliteal, conspicuous between the tendon of that muscle, the external condyle of the femur, the semilunar cartilage, and external condyle of the tibia. 6. The bursa of the biceps cruris, between the external part of the tendon of the biceps cruris, and the external lateral ligament of the knee.

"BURSÆ MUCOSÆ SITUATED IN THE FOOT.—*On the back, side, and hind part of the feet.* 1. A bursa of the tibialis anticus, between its tendon, the lower part of the tibia, and capsular ligament of the ankle. 2. A bursa between the tendon of the extensor pollicis pedis longus, the tibia and capsular ligament of the ankle. 3. A bursa of the extensor digitorum communis, between its tendons, the tibia, and ligament of the ankle. 4. A large bursa, common to the tendons of the peronei muscles. 5. A bursa of the peroneus brevis, proper to its tendon. 6. The calcaneal bursa, between the tendo Achillis and os calcis.

"*In the sole of the foot.* 1. A bursa for the tendon of the peroneus longus. 2. A bursa common to the tendon of the flexor pollicis pedis longus, and the tendon of the flexor digitorum pedis communis longus profundus. 3. A bursa of the tibialis posticus, between its tendon, the tibia, and astragalus. 4. Five bursæ for the flexor tendons, which begin a little above the first joint of each toe, and extend to the root of the third phalanx or insertion of the tendons."

The bursæ mucosæ are often found inflamed, relaxed, or full of a morbid, coagulable fluid. Stiffness is the frequent consequence of such diseases. See Koch de Morbis Bursarum Tendinum Mucosarum Lipsiæ, 1790.

BUTYRUM.—Page 295, col. 2, line 3; "*Butter.*"—The Grecian poets, who speak of milk and cheese, had no name for butter: the Romans only used it as a medicine. Butter is the oily inflammable portion of milk, separated in the form of cream, as already explained. (See LAC.) Fresh butter has scarcely any smell, and its taste is soft, mucilaginous, and agreeable, more rich than oil, and softer than marrow. It resembles, in its nature, the fatty expressed oils; but is often inconvenient in a delicate stomach, as it swims on the upper part of the food in that viscus, producing a sensation not unlike heartburn. It melts easily, and runs like oil, unless this separation of the oil from the mucilage is prevented by flour or milk. In this state, however, it is with great difficulty digested. Butter in some constitutions is laxative. It is computed that 50,000 tons of butter are consumed annually in London.

In separating the oily portion of the milk, a milky fluid is left, called *butter-milk.* It is less rich than cream; but a part of the oil, and the whole of the saccharine part, remains. It is a light, pleasing, and refreshing drink, and when the acetous fermentation is allowed to precede the process of making butter, it is agreeably acid and an useful refrigerant.

BUXTONIENSIS AQUA.—Page 295, col. 2, line 36; "*cold bath has been used.*"—It seems not to be pointed out with sufficient distinctness, that the great advantages of the Buxton waters, externally used, consist in their temperature. We have seen, in the article BATHING, that some reaction takes place from the increased energy of the system, in popular language the vires medicatrices naturæ, from which the advantages of cold bathing are derived. If the temperature be increased, the shock is less, and the powers of reaction are not so great, so that waters of this kind are adapted for the weaker constitutions, where greater cold might be injurious or fatal. For these reasons Buxton waters are useful to those previously weakened by severe gout, rheumatism, or other painful diseases. Internally it is said to relieve dyspepsia and its attendant symptoms, to increase appetite, restore the spirits, and improve the general health. To this we cannot object; but should this be the effect of the azotic gas, for the water contains no other active ingredient, it is a subject of regret that it is not more generally employed.

BUXUS.—Page 295, col. 2, line 52; "*found wild in some parts of England.*"—The box is an evergreen, thickly branched, with oval, dark-green, shining leaves. The wood is yellowish, of a greater density than any other European wood, sometimes sinking in water. The flowers are imperfect; the fruit a green berry divided into three cells, containing six seeds. The peculiar smell and taste of the leaves are lost in drying, and the plant is said to kill camels, though they appear fond of it. (Hanway.) The wood, when masticated, has no taste: the spirituous extract, which amounts to about one-fifteenth of the wood, is slightly bitter; and the watery (one-thirtieth) of a disagreeable saline taste. A decoction of the wood has been esteemed of equal virtue with the guaiacum in lues. The oil of box has been useful in curing toothach, and, mixed with equal quantity of lintseed oil, in relieving the pains of hæmorrhoids.

BYSMA.—Page 296, col. 2, line 6; "*the same with amurca.*" It is a cryptogamous plant of the family of the algæ, consisting of a filamentous tuft, or a powdery down. Many of the byssi ought to be referred to the confervæ, and the downy powders certainly to be referred to a separate genus. This name is also given to the tuft of filaments, which fix some shells to the rocks in the Mediterranean sea. These are capable of being spun, and actually form different articles of dress, of a silky fineness.

BYSSOLITE, a singular species of mineral vegetation discovered by Saussure on Mont Blanc, adhering to masses of granite. One of these blocks, he observes, was in part covered with delicate strait fibres of amianthus, which seemed to grow on the stone like a fine plant. A transparent rock crystal, adhering to the rock in the middle of this mineral herb, contained many of these threads, and was evidently of a subsequent formation. The byssolite consists in one hundred parts of alumine, 43.19; flint, 34.73; lime, 9.01; oxide of iron, which gives it a brown colour, 19.32. These are ingredients very different from those of amianthus, and it consequently becomes a new genus.

C.

CAAMINI, the leaf of a shrub found on the mountains Maracaya, used in Chili and Peru as tea. It grows on very high hills, at a distance from the inhabited parts of Peru.

CAAPONGA.—Page 297, col. 2, line 26; "*the same nature as the above.*"—It resembles in habit the cassias, and every part is bitter: the leaves are applied to foul ulcers. The name is more properly *caaroboa.*

CACAO.—Page 298, col. 1, line 36; "*of a much larger size.*"—The fruit is oval, obtuse on the top, about three inches in diameter, sometimes smooth, at others rough, with protuberances, or divided longitudinally by furrows. The colour is a pale yellow, or a blood red. Within the fleshy covering it contains a white pulp, resembling butter, sweet and subacid, and in the middle there are about twenty-five nuts. The ripeness of the fruit is ascertained by the colour, and the rattling of the seeds, when shaken. The pulp is cut longitudinally, and the seeds separated by agitation, assisted by fermentation. They resemble, as we have said, almonds, covered with a black, red epidermis and a blackish medulla, divisible into lobes, between which the cuticle insinuates. Sonnerat informs us, that the cocoa nuts of the Manillas are superior to those of America.

In making chocolate nothing should be added, by which means it may be kept longer without injury. The chocolat de Santé is wholly unmixed. When the Spaniards arrived in South America the Mexicans kept these nuts in their houses, so that they might prepare their meal at any time; but the Spaniards, thinking the nuts too cold, added the spices. The proportion of sugar varies: the most oily nuts require the largest, and it is said sometimes to amount to two thirds: if in too small a proportion, the bitterness is unpleasant. The spices employed, besides the vanilloes, are cinnamon, capsicum, and cloves; the odoriferous additions, besides musk, are amber and balsam of Peru.

The oil which the nuts contain is not wholly subdued by the roasting, but is rendered miscible with water by the trituration with sugar; but the sugar must not be in so large a quantity as to occasion acidity or flatulence. When properly prepared, chocolate is said to be nutrient, analeptic, and demulcent, to procure quiet sleep, and gently loosen the belly. It is injurious to the fat, plethoric, and to those who use little exercise, as it renders them liable to apoplexy and hæmorrhages. Where the stomach also is loaded with viscid mucus or bile, it is often hurtful. It is more salubrious in the morning than after a full meal; in cold than in warm weather; an useful diet in tabes, and, if the spices are omitted, in phthisis. Linnæus (Amœnitates Academicæ, vii. 263) recommends chocolate as highly useful in relieving the pains of hæmorrhoids. As a vehicle for the bark, the leaves of the orange tree, and for muriated mercury, it has been highly recommended. For the latter purpose it is made into lozenges. The *butter of chocolate*, separated as already explained, is rendered whiter by repeated ablution in hot water, and of a still more brilliant hue by an alkaline ley, by quicklime, or spirit of wine. By distillation it affords an acid resembling the sebacic (Crell's Chemical Journal, ii. 152); does not become rancid in many years, and when left in a copper vessel for a month produced no ærugo. It is employed like other expressed vegetable oils, and more useful, as it does not change by heat; and is applied, with advantage, to piles (Mangeti Bibliotheca Pharmaceutica, art. CACOA), either by means of cotton; or introduced internally on a suppository; relieving the pain, and often producing a salutary discharge of blood. It is highly useful in soaps, and in preserving surgeons instruments from rust.

CACHEXIA.—Page 299, col. 2, line 62; "*must be directed by general views only.*"—We find an instance, in which it was found to have arisen from an insect in the stomach: repelled eruptions and evacuations, or gout, have been frequently its source. Drinking cold water, while warm, and the use of saturnine cosmetics are more frequent causes than authors have suspected. We lately saw a case of cachexy following a poitou colic, it was said from the *smell* of paint. The facts were admitted, but the cause was denied; and it was at last discovered that the lady had been too anxiously endeavouring to obtain a brilliant complexion.

To the remedies we have only to add the broad-leaved willow bark, and the Pyrmont waters. Marcard.

CACHRYS ODONTALGICA, Lin. Sup. Pl. 181; Wildenow, vol. i. 1409. The root is long, highly acrid, and somewhat aromatic. It resembles the pyrethrum, and is used, like it, in toothach. Pallas, iter. 3, Appendix.

CACOCHYMIA.—Page 300, col. 2, line 56; "*depraved state of the humours.*"—If it were of consequence to fix the meaning of the term more accurately, we would observe that it is a depravation of the *chemical* nature of the fluids, as when the alkali is in excess in those fluids which contain an ammoniacal salt; when the phosphoric acid is unusually disengaged, as seems to be the case in gout. The water in a greater proportion, the fibrin or the red globules in a less, ought not to be called cacochymia.

CACTUS COCHENELLIFER, Lin. Sp. Pl. 670. A plant which grows in many parts of South America, and particularly in Mexico. This is the species, according to La March, which feeds the cochineal insect, and not the c. opuntia, as stated in that article. Yet Thierry de Menonville, who visited the native districts of this plant, doubts if it be the same which is cultivated in the neighbourhood of Mexico for the support of these insects. The colour of the insect is derived from the deep, brilliant red of the flowers. The whole genus is succulent and spinous; but this species has few thorns.

CADÆ OLEUM, CADE OIL, supposed to be the pisselæum of the ancients, but really made from the fruit of the *juniperus oxycedrus* Lin. Sp. Pl. 1470. It is used chiefly as a discutient.

CÆCITAS, (from *cæcus*). See AMAUROSIS and CATARACTA.

CAJEPUTI OLEUM.—Page 302, col. 2, line 65; "*edition of the species plantarum.*"—It is the *melaleuca leucadendron* of Wildenow Sp. Pl. vol. iii. page 1428; of Linnæus first *mantissa*, and the Supplement, included in the *polydelphia icosandria.* Dr. Smith, in the Linnæan Transactions, iii. 273, seems inclined to refer it, with other naturalists, to the genus metrosiderus, as the only distinction is the union of the filaments into five bundles. He has examined the flower of this species, and Wildenow has retained his specific character.

The appellation *caie put* is said to signify the white tree, and it was therefore supposed to be distilled from the wood; but Valentyn and Rumphius have informed us, that it is really drawn from the leaves, which is more probable, as they are marked with transparent points, like the hypericum perforatum. It was, at first, slightly mentioned by Locher in 1719; but introduced into the Amsterdam dispensatory seven years afterwards. The genuine oil is rarely met with in this country, and its place is said to be supplied by oil distilled from cardamoms. Thunberg describes it of a grass green colour, equally fluid with ardent spirits, burning or evaporating without leaving any residuum. The smell resembles that of camphor, mixed with turpentine; and, if strongly drawn into the nose, is somewhat disagreeable, but in a less degree highly fragrant and grateful. Goetz describes it as fluid, of a yellowish colour, not peculiarly volatile, with an agreeable smell at first, but afterwards with a slight terebinthinate odour, at last resembling that of savine. The taste was aromatic, not unlike that of rosemary. What he considers as a mark of its genuineness is, that a drop rubbed on the temples occasioned a pungent pain in the eye, with a discharge of tears. Many travellers seem to agree that the green colour is not essential to it, but in some measure adventitious, owing to an addition of the berries and the leaves; or, more certainly, to an impregnation of copper from the still or the vessel in which it is brought to Europe. Chemical analysis supports the latter opinion. Fraudulent chemists seem to have often tinged the oil of rosemary green, but the oil of the greater and the middle or longer cardamoms is greenish (Spielman and the anonymous author de Oleo Cayeput). The Dutch formerly made it by adding to the oil of rosemary some camphor, with a little oil of cardamoms, and giving the mixture a green colour.

The oil of cajeput is highly stimulating, from its tenuity, supposed to penetrate the minutest blood-vessels, and produce a copious sweat. In these respects it is said to excel all other essential oils. From its sudorific power, it is employed in India to prevent the paroxysms of intermittents, as well as relieve anasarca. In emprosthotonus, epilepsy, chorea, hysteric paroxysms, and catalepsy, induced by a fall, it is strongly recommended. Partial spasms it is said to relieve with equal success, particularly the spasms of the stomach and bowels from atonic gout.

In various cases of palsy it is thought highly beneficial, particularly in a stupor of the arm from an hypochondriac affection, and in amaurosis, induced by a tertian. It has relieved albugo, and, as is said, cataracts, more certainly deafness, applied on cotton to the meatus, rubbed behind the ears, and given internally. In toothach it is supposed to excel every other remedy, particularly in relieving that pain which arises from a rheumatic diathesis. In gout and chronic rheumatism it is highly efficacious, and an arthritic ophthalmia was relieved by dropping it on a handkerchief, which was held before the eye. In herpes its application is said to be successful; in headach, rubbed on the temples and drawn up the nostrils, it is equally so. It restores all suppressed evacuations, particularly those of the catamenia and hæmorrhoids.

From three to twelve drops are administered on a knob of sugar. It may be also taken in wine, Hoffmann's mineral anodyne, or sweet spirit of nitre. Warm aromatic teas may be drank after it, if the nature of the complaint does not forbid; and the bark has been occasionally joined. It does not require a long continuance.

These additions have been more extensive, as we have often read in the German authors that the English know nothing of this medicine, that it is neither introduced into their pharmacopœias, nor spoken of in their treatises on the materia medica. This accusation will be, in future, we trust, unfounded; but as we have scarcely, in any part, spoken from our own experience, we must adduce our authorities.

Cartheuser (Dissertationes Physico Medicæ), and Adami de Oleo Cayeput; anonymous author (supposed to be Martini) de Oleo Wittnebiano seu Kaiuput (the oil was introduced into Europe by a clergyman called Wittneben); Werlhoff Opera edit. Wichman 711, Thunberg's Travels; Goetz in Comment. Norimberg, 1731, p. 4; Trew, ibid, 1737; Valentyn's Amboyna, iii. 192.

Calagualæ radix. The plant which affords this root is a native of Peru; but its characters are unknown. It is apparently a fern, and probably related to the polypodium: the leaves resemble those of the asplenium scolopendrium, though less. The root is knotty, like that of the common polypody, or osmunda regalis, without any taste. Two other roots are occasionally sold for it; one called *calagualæ fœminæ*, and the other *c. spuriæ* radix; both insipid and useless.

The first information we received of it was from the London Medical Journal, vol v., where we were told that the root was used at Rome in cases of dropsy. The additional information seems to have been taken from the letter of Dr. Domenico Luigi Gelmetti to Dr. Giammaria Mezzi "Della Radice di Calaguala." This letter seems to have had, in its original state, a very limited circulation; but it is republished in the Giornali della Medicina, v. 409, and in Brugnatelli's Bibliotheca Physica d'Europa, v. 135. The Indians use the decoction of calaguala in pleurisy, in contusions, and internal abscesses, with success, and the trials in Italy seem to have confirmed its utility. The first case was that of different complaints of the breast from contusion; the second, a hectic, subsequent to pleurisy; the third, a severe pleurisy; the fourth, a convulsive colic, with fever, a bilious vomiting, and an obstruction of the alvine discharge. In Germany, particularly in the north, a decoction of this root is highly celebrated in coughs. Two drams of the root are boiled in a pint and a half of water to a pint, and drank as tea. The medicine is said to be powerfully diuretic, without pain. We understand, however, that in the trials of Carminati and Franck it has not succeeded.

Calamariæ.—Page 303, col. 1, line 28; "*of plants of the reed kind.*"—It is the third order of Linnæus' fragments, and distinguished from the grasses, to which it is nearly allied, by the base of the leaf, which embraces the stalk, having no longitudinal aperture; by a triangular stalk, without knots or joints, and the flowers having no petals.

Calamus aromaticus.—Page 304, col. 1, line 62; "*where the stomach is in a torpid state.*" Its antiseptic power has only been ascertained by experiments out of the body; and when it is styled antiscorbutic the sea scurvy is not meant, but a scorbutic disease,

which appeared in a crowded monastery. In a kind of scorbutic itch it seemed to succeed; but many other active medicines were combined with it; and when Hoffmann informs us that it cured a bleeding of the gums, we ought to reflect that he joined the marine acid with it. Other hæmorrhages it is said to have checked, particularly of the nose and of the uterus, from abortion; but the iris pseudacorus, which is less aromatic, was probably the medicine employed. They are often confounded; but the leaves of the calamus aromaticus are highly fragrant; those of the bastard kind without aroma.

CALCAR COROLLÆ, *nectarium*, the heel or spur, which terminates the corolla of larkspurs, &c.

CALCATRIPPA. See CONSOLIDA REGALIS.

CALCITRAPA.—Page 306, col. 1, line 42; "*centaurea calcitrapa* Lin. Sp. Pl. 1297."—The stalk of this plant is divided into numerous, spreading branches, rising very high, with a few leaves on them, placed at the division of the stalks. The flowers grow thick on the branches, are of a reddish colour, rising from heads composed of several scales, each ending in a long, strait, sharp, hard thorn. The seeds are downy, white, flattish, and oblong: the root is single, in length nearly of a finger, running deep into the ground, of a whitish colour, with a thick bark. It grows on highways, and flowers in June.

The calcitrapa has been supposed to be the Jewish condiment with the paschal lamb; but at present the broad-leaved lepidium is used for this purpose (Forskål); and it is not certain whether the plant has been mistaken, or the custom has been altered. Four or six ounces of the juice, a dram of the powdered herb, or twice the quantity of the extract, taken at the commencement of the attack of an intermittent, are said to cure it. Tournefort and Geoffroy.

CALCULUS.—Page 308, col. 2, line 49; "*from the Annales du Museum National.*"—The different calculi may be classed from their appearance and analysis. The simplest are those which consist of one substance only, besides animal matter; the next those which contain two ingredients, often compound ones; and the last genus those which contain more than three bodies, besides the animal matter.

The stones which contain the lithic acid only are reddish or of a highly yellow colour, resembling wood by their brittleness, as well as their fine homogeneous texture: they dissolve wholly in acids, without the ammoniacal odour; their figure spheroidical, compressed, and oval; the surface sometimes highly polished, but often rough and warty, of a crimson light red, yellowish, or light brown colour, but never white, grey, or black. Their specific gravity usually exceeds 1.500, and these concretions are most common in the kidneys: about three-fourths of the whole number examined by the authors, viz. Fourcroy, &c., 600 were of this kind.

Calculi composed of *lithat of ammonia only* are generally small, of a pale or grey colour, consisting of fine and easily separable strata: the nucleus adheres but slightly to the strata. Their figure is commonly oblong, compressed like almonds; the surface smooth, frequently crystaline, the specific gravity from 1.225 to 1.720. When powdered they are soluble in water, but are often covered with a thin stratum of lithic acid. These calculi are rare.

Those which contain *oxalate of lime, exclusively*, are unequal in their surface, and usually styled the *mulberry stones*. They are hard, grey, solid, susceptible of a fine polish, and, when sawed, exhale the faint odour of semen. They leave lime after calcination, are not soluble in alkalis, but decomposed by mild alkaline leys. Their figure is usually spheroidal; their gravity from 1.428 to 1.976, and they often form the nucleus of other stones. The proportion of this class was about 75 in 300.

The first species of the second genus contains lithic acid and some phosphat, but in a separate state. The surface is white, cretaceous, brittle, and semitransparent, as the phosphat is usually that of lime or of ammoniacal magnesia; the nucleus only consisting of ammoniacal magnesia. The proportional number was about one-twelfth of those examined, and their bulk is larger than that of any other kind; their shape oval, somewhat pointed at one end. The specific gravity is very variable.

The second species contains lithic acid, and earthy phosphats intimately mixed; but the appearance is greatly varied by the different proportions of the ingredients. The earthy phosphats are separated in different strata, but sometimes so intimately mixed that chemical analysis can only distinguish them. The colour is usually grey, but sometimes variegated like marble; their figure oval, globular, or irregular; the surface mostly brittle, cretaceous, or whitish, like the calculi that contain phosphat of lime only. The polyhedrous stones belong to this species, and their angles are often worn by attrition. Their number is about one-fifth, and their specific gravity varies from 1.2 to 1.7.

The third species consists of lithat of ammonia and phosphat of earth, viz. of lime and ammoniacal magnesia, resembling in its appearance the first species of this genus. The lithat of ammonia often makes the kernel, while the mixture of the two others, rarely a single one, forms the crust. The nucleus sometimes contains the phosphats, and the crust a little lithat of ammonia, occasionally with excess of lithic acid. The strata of these stones are easily separable, and they are often small. Their number was only one-thirtieth, and their specific gravity is from 1.3 to 1.7.

The next species contains the same principles intimately mixed, but the colour is paler than that of the second species, and much ammonia is separated on the addition of kali. They are seldom large, and Fourcroy found them only in the proportion of one-fortieth.

The fifth species contains phosphat of lime and phosphat of ammoniacal magnesia. These stones are of a pure white, friable, insoluble in alkalis, and soluble in the weakest acids. Their proportional number is about one-sixtieth. Their size is considerable; their form irregular; their surface uneven; their texture consisting of white, brittle strata, sometimes interwoven with solid semitransparent crystals of ammoniacal magnesia. The crusts which form on foreign bodies, introduced into the bladder, are of this kind, and their specific gravity is from 1.138 to 1.473.

The sixth species consists of oxalat of lime and, externally, uric acid. The proportion of these parts, as well

as their specific gravity, vary greatly; the latter having the extensive range from 1.34 to 1.75. The uric acid is sometimes on one side only, and the oxalat of lime is distinguishable on the other by its protuberances; but this variety is peculiarly rare.

The last species of this genus contains in its centre oxalat of lime, surrounded by earthy phosphats. The nucleus is grey or brown, and radiant; the crust white and cretaceous. The figure and size greatly vary, and their specific gravity is from 1.168 to 1.752. The proportional number of these stones is one-fifth.

The first species of the third genus is a calculus containing oxalat of kali, earthy phosphat, with uric acid, either pure, or combined with ammonia. They rarely occur, and scarcely twelve were found in six hundred. They often consist of three distinct strata. The external coat contains the earthy phosphats, often mixed with uric acid, or lithat of ammonia; the second, lithat of ammonia, and the internal, oxalate of lime: all these may be distinguished by the eye on sawing the stone. This species has many varieties; but, as they are not distinguishable by external characters, we shall not describe them.

The last species of calculus contains a variety of ingredients. Siliceous earth seems to have taken place of oxalate of lime, and it is mixed with uric acid, as well as lithat of ammonia, and cov. red by phosphats of earth. Two only occurred in six hundred specimens.

The calculi from the intestines are rather peculiar to animals than the human species, and consist often of conglomerated hair, which they lick from their bodies. Stones are, however, so frequently discharged from the rectum, or remain as unconquerable obstructions in the intestines, that though we admit, with Morgagni (de Sedibus, &c. xxxvii. 24), the greater number to be biliary calculi, they are probably not all of this kind. One exception we can distinctly perceive in the case recorded by Molinelli in the Bologna Transactions, vol. ii. part i., where a fungus was filled with calculi; nor can we think that the large stones, described by Gooch (Medical and Chirurgical Observations), by Houston (Philosophical Transactions, N°. 389); by Horstius (Opera, ii. 237), could have proceeded from the gall-bladder. The largest stone of this kind which we recollect is in one of the English collections of cases, though we have forgotten the title of the work, where its weight amounted to ten drams. Indeed Morgagni himself, in the forty-fifth article of the same epistle, points out the distinction.

Calculi have been found in other parts of the body, besides those described, as between the meninges of the brain; and the brains of animals have been found, it is said, wholly petrified. A bone was once discovered so perfectly in shape resembling the brain, that it was carried to Dr. Simson, of St. Andrews, as a petrified brain, who, in a dissertation suggested by this fact, endeavoured to show that the vital and animal actions might be carried on independent of the brain. This fact is supposed to have shown only the credulity of the professor; but, when we observe in the collections of authors, *some of whom* merit our attention for their accuracy, that a great part of the brain of animals has been found in a calcareous state, we begin to suspect that the ossified brain may not have been wholly fictitious. The vital actions we well know may be carried on by the ganglionic system.

Scherb describes a calculus which he found in the receptaculum chyli; and numerous instances occur of calculi in every part of the heart: in one case the calculus weighed two ounces. In the lacrymal passages, in the mammæ (Ruysch Thesaurus Anatomicus, i. 3), in the testis, in the spleen, the veins, the uterus, the prostate, the coats of the nerves, the ovarium, the seminal vessels, the stomach, the pancreas, the tonsils, the Fallopian tubes, the placenta, and indeed in almost every organ, calculous concretions are occasionally discoverable.

To describe the remedies formerly recommended for calculus, would be an useless labour. We shall only notice one or two, which have been apparently too much neglected. The first is drinking freely of water, either warm or cold, pure or mineral. Menghini, in the Bologna Transactions, advises the addition of soluble tartar; Vater recommends the Pyrmont; Springfeld the Carolina waters; Desault those of Bareges; Dr. Russell the sea water: the relief, however, probably depends on diluting the urine, which is certainly affected by the simple element. Perhaps, in the case recorded by De Haen (Ratio Medendi, xiii. 177), where 1500 pints of lime water were drank, a part of the benefit may have been derived from the fluid. The wild carrot seed, the turpentine, and the juniper, have probably been useful, merely by increasing the proportion of urine. Honey, we perceive, has numerous recommendations, and is particularly spoken of by Hoffmann joined with the juice of juniper berries. Baldinger advises the infusion of tobacco in rhenish wine, and all the alliaceæ are highly commended, probably as diuretics only. The tetradynamiæ, perhaps on the same principle, have had their advocates; and the berries of the sapotilla (a variety of the SAPOTA, q. v.) are recommended by Whytt and Simon in the Philosophical Transactions.

A singular practice is mentioned by Alpinus (De Medicina Ægyptorum, iii. 14), of drawing the stone from the bladder by means of a syringe applied to the penis. The practice was, within nearly half a century, preserved in the east, as we find from Perry's View of the Levant, published in 1743; and the plan mentioned by Fourcroy in his Medecine Eclairée. It is, however, obviously chimerical; and properly styled by Bosc, *infidum calculi extrahendi auxilium*.

CALENDARIUM FLORÆ, a fanciful idea of Linnæus, disposing flowers in the order of their flowering, so that the period of the year may be ascertained by the opening of the corolla. It, however, rises above a fancy, when we find that it teaches us when to look for any given plant in its perfection. The *horarium floræ*, or horologium botanicum, is a similar arrangement of flowers, according to their hour of opening.

We find, in some German authors, the CALENDARIUM IN HOMINE from the regular return of pains in moist weather, of epileptic fits in the increase of the moon, or the regular return of fevers.

CALENDULA.—Page 313, col. 2, line 64, "*corymbiferæ* of Jussieu."—It is the *calendula officinalis* Lin. Sp. Pl. 1304, of an unpleasing smell, not unlike pitch. The taste is, at first, sweetish, and afterwards bitter; but the calyces are more bitter, more acrid and disagreeable. The infusion in water retains the smell; in

wine the taste. It was given as an aperient in jaundice, probably from its colour, and thence the analogy was transferred to other obstructions, particularly to scrofulous ones. Its acrimony is said to destroy warts, and the hard callus at the bottom of the feet. The flowers have been used as sudorifics and alexipharmics.

CALIDÆ, (from *calor*). An epithet applied either to mineral waters or to the plants of hot climates. Waters are seldom called calidæ unless they exceed the heat of the body; and plants have this appellation which require a temperature from 10° to 40° of the centigrade thermometer.

CALIX the membrane which covers the papillæ in the pelvis of the kidneys, and the usually uncoloured covering of the corolla of a plant. See CALYX.

CALLOSUM CORPUS. (See CEREBRUM.) This part of the brain has, we find, been injured by a counter fissure, without any peculiarly dangerous symptoms.

CALLUS.—Page 317, col. 2, line 65; "*from the fibres of the bone.*"—It rather arises from a deposition of the bony matter from the arteries, nor does it ever, as has been supposed, pass first into the state of a cartilage. (See BONE.) The formation of callus is well explained by Morgagni (De Sedibus, &c. lxvi. 29); and the impediments to its regeneration by Callisen (Collectiones Societatis Medicæ Havniensis, ii. 22). See Bordenave Memoires sur les Os.

CALYCANTHERNÆ, (from *calyx*, and *anthos*), the seventeenth order of Linnæus, in his fragments, consisting of plants chiefly distinguished by the insertion of the corolla and stamina into the calyx. In these plants the receptacle of the flower is placed on the fruit, or the fruit on the receptacle of the flower.

CALYCYCIFLORÆ form the sixteenth order of the fragments, where the stamina are inserted into the calyx. Plants of this order want the corolla; the flowers are hermaphrodite, and male on the same root, or male and female on different roots, and the seed-vessel is pulpy, containing a single stone.

CALYX.—Page 322, col. 2, line 17; "*more substantial than the corolla.*"—Linnæus thinks that it consists of the outer part of the epidermis; but Dr. Grew has shown, that it is compounded not only of the epidermis, but, at least in many plants, of a cortical and parenchymous, or ligneous, substance also.

CAMPANACEÆ (from *campana, a bell*). Bell-shaped flowers, the twenty-ninth order of Linnæus' fragments. This is a very natural order, and the plants are generally herbaceous and perennial, though some of the convolvuli are annual, and some foreign species have woody stalks.

CAMPECHENSE LIGNUM.—Page 323, col. 2, line 4; "*three or four times a day.*"—The decoction is, in general, preferred to the extract; but each is equally useful, and often very advantageous, particularly so in diarrhœas from the use of mercury. The trunk and principal branches sometimes exude a gum in large masses, which soon becomes solid and brittle. Browne describes it as of a blackish appearance, from its intense redness, and of a sweet taste. Natural History of Jamaica.

CAMPHORA.—Page 323, col. 2, line 24; "*the camphoræ oleum on re-distilling it.*"—The native camphor is only collected from the oldest trees, and, to ascertain its existence, the natives dry, and smell to the bark, as well as strike against the trunk. If the proper marks appear, they cut down the tree, separate the bark, and cut the trunk into billets. In the old trees camphor occasionally exudes from the fissures, in a fluid form styled oil of camphor, and is caught in vessels appended. The larger and the smaller exudations, and the fluid obtained by scraping the wood, are distinguished, in the Malay tongue, by appellations which mean the head, the belly, and the feet. Marsden denies that the oil of camphor, and the dry concrete, proceed from the same tree, adding, that many of the camphor trees contain neither. The Sumatra camphor is much dearer, and less volatile than that of Japan. The dearness is in part owing to the small proportion the former yields, and this to the want of proper management in separating it. The Japanese do not perfectly understand the method of purifying the camphor, and, therefore, purchase that from Sumatra at a high rate, since it is greatly esteemed as a medicine. Even its smell they suppose cordial, and the inhabitants of Siam and China suppose that it will relieve visceral obstructions if only held in the mouth. They use it in putrid and bilious fevers, and also in their fine varnishes.

The oil of camphor is rather a resin, and exudes not only naturally but through wounds in the trunk, made transversely to the depth of two or three inches, and afterwards hollowed into a cavity which will contain about thirty-two ounces. In this cavity a lighted reed is placed for about ten minutes, to draw the oil towards it, and it is filled in a night. The operation is repeated; but the oil obtained is gradually less. Camphor is also obtained from the roots of the laurus cinnamomum and the cinnamomum camphoratum (Thunberg). Besides the plants mentioned in the article, it has been ascertained that camphor may be procured from the schænanthus persicus (Kempfer), the radix zedoariæ (Grimm), the radix enulæ (Malouin), lavender (Hagen), cubebs and turpentine (Meyer), anemone pratensis and the seeds of fennel (Heyer), and the radix asari. Yet the production, in every instance, is not exactly the same as the camphor of Sumatra or Java, and frequently rather approaches than resembles it.

Camphor is a considerable electric, attracting light bodies when rubbed with a flannel. The form of its crystals is starry, with four or six rays. If to a solution of camphor in spirit of wine water is slowly added, an elegant vegetation is formed. It is constantly said not to be soluble in water; but its taste and smell are retained in the julapium è camphora, though soon lost. It is soluble in an equal weight of good spirit, and in water impregnated with carbonic acid gas. In short, though it agrees in many respects with essential oils, ether, and resins, yet it almost as widely differs from these as from gums, gum resins, volatile oily salts, &c.

To insects of every kind camphor is fatal, except the tineæ; but they are killed sooner in summer than in autumn, sooner under the influence of a south than a

north wind, which apparently arises from the different volatility of camphor in a higher temperature. Frogs were soon killed, if included in a vessel with camphor, after experiencing convulsive motions, difficulty of breathing, anxiety, and stupor (Carminati). To sparrows and the sea-pies the fumes of camphor were equally fatal. Menghini and Carminati tried the effects of camphor on many birds, and some of the smaller quadrupeds, without any uniform consequence. Some were apparently intoxicated, others comatous, others furious. Anxiety, stertor, groans, cries, foaming at the mouth, were sometimes the consequences; tremors, convulsions, epilepsy, &c. more rarely. Nature seemed occasionally to exert herself in procuring the evacuation of the medicine by vomiting, stool, diuresis, ptyalism; and it was observed that when the camphor was thrown up with very little loss, the symptoms were scarcely mitigated. A few grains would be fatal to birds, while cats were seldom killed by less than a scruple. A sheep, though affected by two drams, was not, however, killed. A dog appeared mad with a dram and half, so that it was thought most safe to kill him. Another dog, from two drams, appeared hydrophobic, but afterwards recovered (Medical Observations and Inquiries, vi. 229). The same dose was not always destructive to the same species of animals. Two rabbits escaped after taking two drams, without any evacuations, while another died apoplectic. On dissection the stomach appeared to abound with mucus, and was inflamed; the food undigested: in those who died comatous, the membranes of the lungs, the brain, the heart, the large vessels, and the intestines, were highly inflamed. The small intestines were suffused with bile; and it was found that camphor given in clysters was fatal in the same doses, and with the same appearances, as in the mouth (Menghini Commentaria Bononiensia, tom. iii. and iv.; Carminati de Animalium ex Mephitibus Interitu). To these experiments we may add the remark of Burserius, that camphor diminishes the irritability of the muscular fibre (Institutiones Medicæ Practicæ, iii. 190); and of Dr. Monro, who found it produce stupor and insensibility when applied to the nerves of the leg (Essays and Observations, Physical and Literary, iii. 351, &c.).

In the human body Dr. Whytt found that half a dram, dissolved in olive oil, produced considerable heat in the stomach, with a dimness of sight, and a load in the head; but on going into the air all these inconveniences disappeared. The same dose, in another person, produced the same effects, with a vomiting of bile, coloured with blood, and a quickened pulse. In another, who took two scruples, the heat at the pit of the stomach also came on, the pulse was slower, with gaping, and, after three hours, with sleep. The vertigo was troublesome at intervals, a slight horror, pale countenance, and a kind of intoxication ensued. Dr. Alexander's experiments are the most important. He took two scruples, and found his pulse gradually sink ten strokes in a minute, the heat of the body sunk one degree. Vertigo, nausea, a failure of memory, an abolition of the senses, fury, with foaming at the mouth, convulsions, tremor, and coma, succeeded; and the pulse rose from 67 to 100 in a minute. On taking warm water, the camphor, which had been swallowed three hours before, came up with little apparent change. The formidable symptoms just mentioned subsided by degrees; but an obstinate costiveness ensued. Colin has observed, that in healthy persons camphor has occasioned ebriety, vertigo, and spasms. Observationes circa Morbos, iii. 148.

We have thus engaged somewhat fully in the details on which we rested, when in the article we styled camphor a sedative, and we may perceive, from these facts, how nearly it is allied to opium. The foreign authors rest much on its antiseptic power, yet Colin admits that it is not a prophylactic against epidemic miasmata, though, when dissolved in vinegar, it has been sometimes evaporated in sick rooms.

In gangrene, both dry and moist, it is styled a remedy of importance, applied externally to the first in solution, to the latter in powder. It is said to lessen the effects of variolous poison, and, when applied to a part which may suffer from the pustules, to prevent their appearance. This appears, however, to be truly fanciful.

We perceive that we have omitted to speak of its use in more active rheumatisms; indeed we have lately only procured the work of Colin, who is its chief advocate in this disease. In that author's opinion, it successfully removes rheumatic pains in the spine, the thigh, the lumbar vertebræ, &c., to which he adds the ischias nervosa of Cotunnio. In rheumatic toothach it is known to be advantageous.

It is said to be useful in epilepsy, if dissolved in vinegar; and an English author has highly recommended it in the same disease joined with the vitriol or oxide of zinc. The chronic convulsive asthma it is said to relieve (Millar on Asthma, &c. 104). The authors who have recommended it in mania we perceive to be numerous and highly respectable. Its anthelmintic virtues are chiefly supported by Prange in his Dissertatio de Camphoræ, Virtute Anthelmintica, § 6—10; but the chief fact of importance is the evacuation of numerous worms after taking it, in some cases of camp fever. We know its effluvia are highly deleterious to the greater number of insects. Colin found it a very useful application in ulcers of very different kinds, from different causes, and we perceive its smell in Marshall's cerate, though used perhaps only as a disguise. Cold, indolent tumours it contributes to soften and discuss. Though it relieves ischuria arising from cantharides and other acrimony, it is said sometimes to induce it (Heberden, Medical Transactions, i. 471). That it mitigates the action of mercury and squills is doubtful, and though it softens the resinous purgatives, there is no evidence of its diminishing their active power.

Camphorata.—Page 326, col. 1. line 57; *"in gouty complaints.* Miller's Bott. Off."—In the beginning of the last century this plant obtained some credit for the relief of dropsy and pituitous asthma (Historia de l'Academie des Sciences, 1703, p. 53), and afterwards as an aperient; but it appears to have no real virtue.

Canalis petitianus. A triangular cavity between the two laminæ of the hyaloid membrane of the eye, in the anterior part, formed by a separation of these laminæ. It usually contains a fluid. See Oculus.

Cancer.—Page 330, col. 2, line 62; *" cancer has been accelerated."*—Authors have divided cancers into

many kinds, the *genuine*, the *scrofulous*, the *syphilitic*, the *fungous*, to which has been added the *scorbutic;* while others speak of the *putrid*, *acid*, and *atrabilious* cancer. These distinctions are, however, of little importance. The cancer is a single disease, and though foul ulcers, which heal with difficulty, attend the disorders mentioned, they do not merit the name of cancer. The most rational distinction of cancers occurs in a paper of Richter in the Gottingen Commentaries for 1779; but the subject need not detain us.

Several authors contend that cancer is contagious, and Febure informs us that the cancerous matter is eaten by dogs without injury. Camper, in his Demonstrationes Anatomico-pathologicæ, describes cancer as surrounded by a hard firm membrane, similar probably in structure to the septa. We mention this fact as it seems to support the animal nature of the tumour; an opinion, by the way, of Gesner, a Swedish physician, who published some Tracts on Medicine and Natural History at Nordlingen, in 1769, &c. v. 230. The various causes assigned by authors are those of debility only, and do not lead us to its more immediate cause. The fancy of some practitioners in ascribing it to a singular depravation of the nervous fluid, need not for a moment detain us.

Among the remedies, fixed air is now allowed to be useful only in correcting the fœtor when present. Its earliest use we have not been able to trace beyond the paper of Magellan in Rozier's Journal for 1776. The use of arsenic, according to Hildanus, was introduced by the monk Theodoric, who lived about the commencement of the eleventh century. It is the foundation of almost all the secret remedies, particularly that of Fuschius, which has been celebrated from the end of the fourteenth century, when it was joined with soot and serpentary. Of the *hemlock* we have already spoken; and we can now add, that its inutility is more strongly vouched than its advantages. The belladonna has had its advocates; but this remedy also is now very generally neglected; and De Haen, who lived in the zenith of its credit, owns (Ratio Medendi, ii. 37) that cancers were not really relieved by it. The solanum is found to be equally useless.

The carrot poultice is chiefly advantageous in correcting the fœtor, and Gesner in the Nordlingen Collection advises, for the same purpose, a balsam composed of acetum lithargyri and oil of turpentine: indeed the saturnine preparations, in every form, have been highly commended.

The internal use of mercury as an alterant has been a favourite plan with many authors, and its external use is highly recommended. The sublimate is the preparation generally preferred. Toads have been brought to suck the poison, and, if we do not mistake, an experiment of this kind is recorded by Pennant. The only other account of this remedy which has occurred to us is in the Journal de Medecine, lxii. It seems not to have succeeded in either instance. The numerous trifling, absurd, and disgusting remedies we omit.

See Le Dran Memoires l'Academie de Chirurgerie, iii.; Norford on the general Method of treating Cancers; Young on Cancers; Guy's select Number of Schirrous and Cancerous Cases; Morgagni de Sedibus, &c. i. 4—47; Hahn de Cancro Occulto et Aperto; Peyrilkie de Cancro apud Selegel Theses Pathologicæ.

CANELLA ALBA.—Page 335, col. 1, line 21; "Nat. order, *oleraceæ*."—The tree grows usually to the height of twenty feet, in thickness eight or ten inches, in the Bahama islands. The leaves are narrow at the stalk, and wider at their ends, broad, smooth, rounding, and of a shining green, having only a middle rib. The flowers, which are monopetalous, appear in May and June, in clusters, from the ends of the branches. They are red, fragrant, succeeded by berries of the size of peas, green, and purple when ripe, containing two shining black seeds, flat on one side; but in other respects resembling a kidney bean.

The colour is much paler than that of Winter's bark, with which it has been confounded, and the external brown coat, marked with various rugæ, is of a lighter colour, while the internal epidermis is white. The texture is somewhat more lax, and the taste not quite so bitter. The distilled water of the canella is milky, and it yields a scruple of oil from half a pound of the bark. The watery extract is very bitter, the spirituous has but a small portion of the former fragrance. Proof spirit is its best menstruum. See Cartheuser Dissertatio de Cortice Winterano, and Lewis's Materia Medica.

CANITIES.—Page 336, col. 1, line 9; "*Greyness of the hairs, or grey-headed.*"—The blackest hair most commonly becomes grey at a very early age, the red hair is sooner grey than the auburn, the brown, or the chestnut. Grey hairs are sometimes hereditary, and children are recorded to have been born with them. Early excesses in venery are said to induce them; fear and terror more rapidly; grief more slowly and less certainly. Violent headachs have undoubtedly changed the colour of the hair. For Vauquelin's opinion of its cause, see PILUS. No internal remedy will remove it; and the only method of staining it is by a black-lead comb, or washing it with a diluted solution of muriated silver.

CANNABIS.—Page 336, col. 1, line 51; "*emollient and demulcent qualities.*"—In the form of an emulsion it has been a rustic remedy in jaundice. The seeds boiled in milk until cracked are used for the same purpose, and the relief is so sudden that the disease has been suspected, with good reason, to have arisen from spasm. Five or six ounces of the strained decoction are taken twice or three times a day. In an epidemic icterus, which prevailed at Gottingen, it is said by Herliz to have been very successful.

CANTHARIDES.—Page 336, col. 2, line 29; "*styled the cantharidæ.*"—Cantharides have an elongated body, almost round or cylindrical, two wings covered by hard, but flexible, scales; filiform antennæ, half the length of the body, composed of eleven joints; the head inclined, the mouth furnished with an upper lip, two simple arched mandibles, two bifid jaw bones, and four lesser filiform antennæ; five joints on the tarsus of the four anterior feet, and four on the posterior. Another insect is sometimes mixed with them, viz. the melanotha vitis, which can be easily distinguished by its square body, and should be separated.

Lewis found that the spirituous and watery extracts

were equally active in blistering; and Newmann obtained from 1920 grains, 920 of a watery and 28 of a spirituous extract; inversely, the numbers were 400 and 192.

CAPILLUS.—Page 340, col. 1, line 46; "*wholly without foundation.*"—See PILUS.

CAPITATUS FLOS, (from *caput, a head*). A fructification, generally consisting of many flowers, firmly connected on the summits of the footstalks, so as to form a head, as in the globe amaranthus.

CAPITULUM. A similar connection of flowers, but of a smaller bulk. It is either *dimidiatum, foliosum, globosum, hispidum, nudum, ovatum, pedunculatum, pyramidatum, sessile,* or *subrotundum.* The antheræ of mosses are also called *capitula.*

CAPPARIS.—Page 341, col. 1, line 54; "See CONDIMENTS."—The bark, which is chiefly taken from the root, is thick, white, convoluted, as large as a swan's quill, somewhat aromatic, bitterish, and slightly acrid. It has been universally supposed to be an astringent, though it does not turn black by the salt of steel. The ancients seem to have valued it highly as an aperient and a deobstruent, useful in obstructions of the spleen, suppression of the menses, sciatica, scrofula, and foul ulcers, (Dioscorides, ii. 204). The depraved fluids it was supposed to evacuate by urine, sometimes by bloody stools (Galen de Simplicibus, vii.): more modern authors have been equally eager in their commendations; but it is now neglected as a medicine.

CAPRA ALPINA.—Page 341, col. 2, line 2; "*from stags, elaphopila.*"—For an account of its flesh and its milk, as a food and medicine, see ALIMENT and LAC.

CAPRIFICATIO, (from *caper* and *ficus*). A method used in the Levant of ripening the fruit of the domestic fig-tree by insects bred in the wild species. The utility of this process, as well as its design, has been doubted. We find, in ancient authors, that it was usual to suspend the wild figs over the cultivated ones, to hasten their maturity. They knew only the fact, and apparently did not enquire whether this step was a necessary one. Linnæus seized on the practice as the support of the sexual system, and supposed that as the cultivated fig had few, and often imperfect, male flowers, an insect, a species of cynips, which usually found its nest in the wild fruit, was thus conveyed to the other, and carried with it some of the fecundating pollen. In fact, however, as Olivier has informed us, caprification is unknown in many parts of the Levant. It is not practised in France, Italy, or Spain, and now neglected in those countries where it was once so common. Yet their figs are large, and of an excellent flavour; nor can it escape the most inattentive observer, that to suspend the wild fig, at any one period, cannot influence fruit of very different sizes and degrees of maturity, usually found on fig trees. The operation is also useless; for every fig contains some male flowers near its eye, which may fecundate the internal ones, and there are figs of an excellent flavour whose seeds are abortive. The cynips is undoubtedly found exclusively in the wild fig.

CAPRIZANS, an epithet applied by Galen to the pulse when it bounds irregularly like a goat.

CAPSULÆ ATRABILARIÆ RENALES.—Page 342, col. 1, line 3; "*by vessels to those of the kidneys.*"—Each oblong gland hath three edges, and two points, forming an irregular crescent. The great convex edge is sharp; the small convex one broad. The length is about two thirds of the greatest breadth of the kidney, and the breadth of its middle portion about one-third of its length: the colour a dark yellow. The upper edge has been called the crista, the two lower the labia. One of the extremities is turned towards the concave, the other to the convex, part of the kidney. The surface is uneven, the basis the narrowest side. The anterior side is divided by a ridge into two equal parts, like a leaf, by the middle rib; and under the basis there is a kind of suture.

The cavity, internally, is triangular, the surface full of short, strong villi, of a yellowish colour, in children reddish, in advanced life a dark brown. The sides of this cavity touch at the top, and are connected below by numerous filaments. The substance is apparently full of follicles, on which, and on the sides of the cavity, the blood vessels are distributed. The glandular substance adheres more closely to the basis of the cavity than to the sides, especially near the extremities; but it may be separated, as its connection is formed by filaments. The vein may be inflated by blowing into the capsular cavity, and the air also passes into the vena renalis.

The fluid of the cavity is unctuous, of a yellowish red colour, changing, in the progress of life, to a yellowish purple, a dark and a black yellow: it is sometimes mixed with blood, but has often the appearance of bile. These glands lie on the top of the kidneys; that on the right side is partly connected to the diaphragm, under and very near the adhesion of the great lobe of the liver to that muscle. The left gland adheres to the diaphragm, below the spleen. They are involved with the kidneys in the membrana adiposa, and a little fat insinuates between them and the kidneys, or between them and the diaphragm.

When the capsular vein is opened longitudinally, many foramina, perhaps the branches of the vein, are discovered in it. Some of these may, however, be different, and through them the air may pass. The granulated surface appears to proceed from a thin stratum of fat under a distinct, exterior coat, and this gives the gland a paler hue. The different appearance of the glands, in the figures of different anatomists, may arise from their state in different periods of life.

CAPUT GALLINAGINIS, *verumontanum,* a cuticular eminence in the urethra, lying before the neck of the bladder, resembling distinctly in shape the *head of a cock.* Around it the seminal ducts and those of the prostate open.

CAPUT.—Page 343, col 1, line 46; "*called contorsio.*"—Inflammatory tension of the pericranium is often the effect of injuries of the brain, and we have

found, more than once, soreness on pulling the hair, a symptom of serious injury on that organ. It is more singular to discover diseases of the thoracic and abdominal viscera among the effects of concussion, and we are rather inclined to class them among concomitant symptoms. We cannot, however, wholly omit the authority of Morgagni, who has collected many facts of this kind, de Sedibus, li. 20, 21, 22, lii. 15, &c.

The brain has sometimes suffered very severe wounds, without fatal consequences. Fabricius Hildanus describes a case in which a spear entered under the left eye, penetrated through the brain, fixing the helmet to the head; but the patient recovered. On the other hand, slight blows and wounds, if neglected, if the most rigid temperance be not observed, and if violent passions be not restrained, are often fatal. It is not easy to fix the period in which a person who has received a violent blow or wound in the head can be pronounced secure. From fourteen days to six weeks is the period when the worst symptoms usually occur. Yet Petit, in the Supplement to his Chirurgical Works, describes a case where the fatal event happened at the distance of three months, and a considerable extravasation of blood was found on the brain. Other narratives, though not in works of the highest credit, have recorded cases of death after fifty-four days, and even ten years.

The shape and size of the head are subject to many varieties. Sagacity we ascribe, in common language, to a long head; and we observe a dissertation quoted with the following title, *Ergo μακροκεφαλοι prudentissimi.* We know not on which side the author ranks; but in dissertations, with similar titles, the affirmative is usually defended. An uncommon thickness of the skull is not uncommon, and a singular instance is recorded of it in the Philosophical Transactions for 1768.

See CONCUSSIO, FRACTURA, TREPANATIO, APOPLEXIA, PARALYSIS, EPILEPSIA, MANIA, CONTRACTURA, CERVIX.

CARA BRASILIENSIBUS.—Page 343, col. 2, line 9; *"they were not quite so tender."*—There is an African root, which the negroes eat, also styled CARA; perhaps the same. It is the *convolvulus batates* Lin. Sp. Pl. 220, or *edulis* Lin. Sp. (Ed. Wildenow) i. 875.

CARABUS.—Page 343, col. 2, line 27; *"it is used for the locusta marina."*—The carabi properly belong to the coleopterous insects. They have an elongated body; the breast-plate heart-shaped; the elytra convex, distinct from the breast-plate; the antennæ filiform, about half the length of the body, with two lips, two large, arched, dentated mandibles, two horny jaws, and six antenulæ; an appendix at the base of the posterior thighs, with filiform tarsi, composed of five joints. Linnæus called it *carabus*, slightly changing the name from scarabæus; but Geoffroy restored the ancient appellation, *buprestis*: the term carabus has, however, prevailed. The carabi are distinguished from the tenebriones by the antennæ and the tarsi; from the cicindalæ, by the head, the eyes, the breast-plate, the feet, and the tarsi; from the scarites, by the antennæ, and the anterior feet. These insects run with rapidity, and conceal themselves under stones, and under the earth, avoid light, are very voracious, even devouring each other. Their odour resembles that of tobacco; and, when taken, they discharge from the mouth and anus a very acrid and caustic dark-green fluid, whose smell is more penetrating than that of their bodies. This caustic fluid was supposed fatal when incautiously devoured by oxen, in consequence of the inflammation which it excited, from whence the name *buprestis* was derived.

Hippocrates, Pliny, and other ancient physicians, thought them little inferior to cantharides, and employed them in dropsy, tympanites, and in several female diseases. The dose was very small, and they were sometimes an ingredient in the pessaries, mixed with aromatics.

CARBO VEGETABILIS.—Page 344, col. 2, line 25; *"but it appears to possess little peculiar merit."*—It is retained in the new Edinburgh Pharmacopœia from its use only in preparing the muriat of barytes, and is not a pure oxide, as it contains a proportion of hydrogen. This ingredient is removed by strong calcination, and, if heated in a covered crucible until red, and while flame no longer appears on removing the cover, it is considered as pure. The upper stratum must be removed, and the inferior kept in small, dry, well-closed bottles. From its effects in sweetening putrid ulcers it has been given in complaints of the stomach, where putrid eructations showed a disordered state of that organ, and ten grains have been the usual dose, but without any salutary effects. It is sometimes used in a cataplasm, by joining to the common poultice about one-third of finely powdered charcoal.

CARBON.—Page 345, col. 2, line 2; *"involve any contradictory quality."*—Carbon was formerly considered as owing its origin to decomposed oil; but it is now known to be a separate principle, almost peculiar to vegetables, and to be contained, in each, in a distinct, peculiar proportion. When the proportion of water is small, as in some solid woods, the carbon retains their form. It exists also in the animal kingdom; but it there appears a light spongy mass, apparently indestructible, from the phosphoric salts combined with it. Charcoal is sometimes hard, sometimes friable, of a lighter or deeper, a sparkling or a dull, colour. Its specific gravity is equally variable. That from oils is peculiarly light.

When charcoal is burnt, the carbon unites with oxygen, forming carbonic acid gas. Some kinds burn readily; others with difficulty; those from oils retain their form in a red heat for a long time. It powerfully attracts moisture, and from this the hydrogen, with which it is apparently contaminated, seems to be produced.

Sulphuric and nitric acids are decomposed by carbon; but by the latter most readily, and with some degree of effervescence (Macquer), occasionally with detonation and flame (Proust). It decomposes all sulphuric salts, forming sulphures. Sulphur of potash dissolves carbon readily. With iron it forms steel, and with this metal, in a very small proportion, plumbago. It renders tin peculiarly brilliant, and fat oils susceptible of inflammation with the nitrous acid. Metallic oxides it quickly reduces in degrees of heat adapted to the metallic body.

CARBUNCULUS.—Page 346, col. 1, line 35; "*sublimate or arsenic succeed.*"—Anthrax in cattle is sometimes owing to the poisonous stings of flies, and it has been doubted whether this may not have been a cause in the human body. The sirex gigas has been sometimes accused; and Pallas, in his Travels, attributes the disease to the bite of the furia infernalis. Fourcroy, in his Medecine Eclairée, mentions this among its other sources.

We were not aware, when the article was written, that arsenic and corrosive sublimate had been really enumerated among the remedies; but we perceive the former recommended by Agricola, and mercury in solution by Le Dran. Caustics were favourite remedies of Riverius; and in Russia tobacco leaves with sal ammoniac externally. The actual cautery is recommended by Pouteau.

CARCAPULI LINCOTANI.—Page 346, col. 1, line 54; "*this latter the best.*"—The gutta gamba probably proceeds from a plant somewhat different from these. See GAMBOGIA.

CARDAMOMUM MEDIUM.—Page 347, col. 1, line 60; "*Woodville's Medic. Botany.*"—There is a considerable confusion in authors respecting the different kinds of cardamoms, and the same names are often given to very different seeds, or different names to the same seed. The ancient descriptions are collected with great care by J. Bauhine (Historia Plantarum, ii. 195, &c.); and the ancient accounts are compared with the modern by Spielman, (Historiæ et Vindiciæ Cardamomi). We need only add to the description in the article, that the seed of the *c. medium* is but little larger than that of the *c. minus*, is rounder, less obviously triangular, with the striæ scarcely visible. The *c. minimum* appears only a variety from an ungenial soil or climate.

All the cardamoms have a trivalve capsule, with flexible valves, membranous partitions, striated, trilocular, with a double row of angular seeds in each compartment. The capsule of the lesser cardamom is of a pale yellow, the base contracted, so as to resemble a small footstalk, while the other more blunt extremity is augmented by a deciduous apex. The seeds within are coherent, angular, reddish, rough, and filled with a white medulla. The capsule has little taste or smell. The taste of the seeds is agreeably aromatic, somewhat bitter, with some traces of camphor. They yield in flavour to cinnamon only.

The mucilage in cardamom seeds is in so large a proportion, that the decoction will not pass through a filter unless diluted. Water, however, extracts much of the aroma. The proportion of etherial oil is one-twenty-fourth or one-twenty-sixth: it is yellow, smelling like cardamoms, and highly acrid. The weight of the aqueous is greater than that of the resinous extract.

CARDIACA HERBA.—Page 347, col. 2, line 8; "*leonurus cardiaca* Lin. Sp. Pl. 817."—It is a large plant, with square branched stalks, the leaves set in pairs, on long pedicles at the joints, and the flowers in clusters round the upper joints. The leaf is dark coloured, cut deep into three sharp-pointed, indented, segments, of which the middle one is the longest, and the two lateral ones are commonly again deeply cut. The flower is purplish, and labiated; the upper lip long and arched, the lower short, divided into three sections.

CARDIALGIA.—Page 348, col. 2, line 33; "*must be only occasional and temporary.*"—Of those substances which affect the stomach by their vapour, garlic, and the rest of the onion tribe, including the fetids, are striking examples: spirits, oil of amber, and the balsams, may probably act in the same way. The local irritations which produce this singular sensation are numerous. A leech in the stomach, a needle or a bone swallowed, the ensiform cartilage pressed in, worms, hydatids, animalcules (Wall in the Philosophical Transactions), larva of the musca cibaria (White, Memoirs of the Medical Society, ii.), drastic purges, particularly gutta gamba, cheese, pickles, &c., have produced it. The diseases in the stomach itself from which the complaint has arisen are, ulcers, schirri, calculi, erosions, and herniæ of the stomach, contraction or accretion of this organ, and a hard callosity from excess in drinking. Diseases of the neighbouring parts, which appear to have produced it, are those of the kidneys (Hoffmanni Opera Supplementum Secundum, i. 504), a perforation of the œsophagus, a schirrous pancreas (Bonetus), steatoms in the mesentery, a calculus and a schirrus in the jejunum, and diseases in the liver. An instance is recorded by Zacutus Lusitanus, where an obstinate cardialgia arose from the ductus communis, passing into the stomach instead of the duodenum.

The existence of acid in the stomach as a cause of heart-burn is well established, but, as we usually see acid only in consequence of a previous spirituous fermentation, it has been doubted whether such can exist in the stomach. There is certainly no evidence of any previous change, and the acidity often appears very rapidly, especially if there is any agitation of mind after taking food. M. Perperes (Annales de Chimie, lx. 280), has, since the publication of this article, made some experiments on the subject; and he seems to prove that the dilatation of the stomach when the process of digestion is disturbed or irregular, depends on the formation of carbonic acid gas, mixed with some atmospheric air, arising from the decomposition of the food, especially if it be of a vegetable, amylaceous nature. The pain in the stomach, often communicated to the œsophagus, arises, in his opinion, from a quantity of the acetous acid, for he found that two ounces six drams of acetous acid were produced by eight ounces of roasted chestnuts (a species of aliment peculiarly indigestible in his stomach), after fermenting an hour and a half in that organ. The best mode of relieving this inconvenience he found to be taking ten grains of columbo root, with twelve grains of calcined magnesia.

The acidulous alkaline waters are often essentially useful in this complaint, not only as antacid, but as gently stimulating and exciting the action of the stomach. When these waters are chalybeated they are still more salutary. Soap is also of considerable service, as the alcali, when united with the acid and the oil, proves gently laxative. Refrigerants are recommended by some authors, and even by Stoll (Ratio Medendi, ii. 157. iv. 363). He particularly advises abstinence from wine (v. 129). Diluents and demulcents are remedies of the same class, and often highly advantageous. Bitters and tonics of almost every kind have been advised,

and the oxi'e of bismuth, first mentioned by Odier, seems a probable remedy; steel has been very commonly employed. As a diarrhœa has sometimes relieved, cathartics have been given, and frequently emetics: both have been useful, when the pain has depended on extraneous bodies, which are by their means evacuated. Cold, as a tonic, is very salutary in this complaint, and it has been freely employed in the form of cold drinks, and cold applications to the pit of the stomach; but the applications to this part have been more commonly of the warmer kind: blisters, rubefacients, and even cupping-glasses have been applied externally, while the tetradynamiæ have been given internally. We can see little foundation for the use of hemlock mentioned by Quarin, of hyoscyamus recommended by Storck, or of mosch by many different authors. Yet as opium has the sanction of De Haen, of Whytt, and other respectable practitioners, it is probable that the other narcotics may be useful.

CARDUUS BENEDICTUS.—Page 349, col. 1, line 56; "*for gathering it is when in flower.*"—The watery extract is, after some time, covered with a saline efflorescence resembling nitre, though sometimes styled common salt. It is considered as a deobstruent, and employed in jaundice; a febrifuge, and therefore used in intermittents, (Eller de Cognoscendis et Curandis Morbis, 89); an antiseptic, which has led to its employment in malignant fevers, and even the plague (Mathiolus in Dioscoridem). It is said to promote sweat, and Geoffroy recommends it in pleurisy. J. Bauhine mentions its great utility in cancer, used externally in the form of distilled water and of powder sprinkled on the sore. In deep putrid ulcers it is supposed to have been applied with advantage, as well as in chilblains.

The seeds are oblong, slightly curved, the base cut off towards the side, crowned on the upper part by a serrated margin, covered by a grey bitter skin, under which is a sweet medulla. They have been used as sudorifics, and to assist the eruption of the small-pox; are given in emulsions, and require ten times their weight of water.

CARDUUS LACTEUS.—Page 349, col. 2, line 43; "*to be efficacious against pungent pains.*"—The seeds are oblong, compressed, smooth; their bark a variegated brown, or white, containing a bitterish oily kernel. They are mentioned by Triller, though without any warm commendations, in pleurisy. The leaves are bitterish and somewhat saline: when the thorns are removed they are sometimes boiled like spinage and eaten as a condiment. Their juice is recommended in dropsy and in intermittents. Tournefort.

CARDUUS TOMENTOSUS. *Onopordium acanthium* Lin. Sp. Pl. has been chiefly used in cancers, by applying its fresh juice on lint, or even the leaves themselves when bruised. Numerous authorities support its utility. The disc is eatable, resembling an artichoke. Amœnitates Academicæ, vi. 124.

CARIES.—Page 351, col. 1, line 53; "*the neighbourhood of an aneurism.*"—Caries may arise from causes similar to those which produce mortification, viz. excess of inflammation, continued irritation, pressure, acrimony, perhaps the application or continued use of narcotics. Inflammation may be in excess from wounds, from a denudation of the bones, or from metastasis, though of the latter there are few instances. The irritations recorded are those of a neighbouring paronychia, a thorn, neglected erysipelas, &c. The effects of pressure are well known from the consequences of aneurisms; and acrimony may, as stated in the article, be either syphilitic, scorbutic, or variolous. Scrofula seems to affect the bones only as a part of the general system. Of caries from the long-continued use of narcotics we have few instances; but we have great reason to suspect that a disease of this kind has been the consequence of the long use of hemlock.

The applications recommended in caries, besides those mentioned, are numerous, but chiefly of the acrid caustic kind. The most acrid preparations of mercury are often recommended, particularly by Petit in his posthumous work, and Gooch advises the muriated mercury internally. The actual cautery, with the muriated mercury, is recommended by Petit in his Treatise on the Diseases of the Bones; the euphorbium by Fabricius Hildanus; the flammula jovis by Storck; savine, by Hoffmann; calcined vitriol, essential oils, the pulsatilla, &c. by others. In general, spirituous applications and dry powders are hurtful: the oil of camphor, and even asafœtida, are said to have been useful.

CARINA.—Page 352, col. 2, line 39; "*usually shaped like a boat.*"—The carina consists sometimes of one petal, as in the cytisus, sometimes of two, as in the broom, and is either *lunulata, bifida, spiralis, incurva, ventriculosa*, or *compressa*. The line which forms the keel runs strait to the middle, and then rises in the segment of a circle; but the marginal line runs strait to the apex, where the two lines meet, and terminate obtusely. The lower part of the base of the keel extends into a claw, inserted into the common receptacle, and of the length of the calyx.

CARLINA.—Page 352, col. 2, line 61; "*The dose from* ℈i. to ʒi."—The root is branched, thick, externally brown, internally of a yellow white, of a fragrant smell, an acrid, an aromatic, and bitter taste. Its essential oil is heavy, and is best given in infusion. The plant seems to be a sudorific, and it is an ingredient in the theriaca and the alexipharmic essence of Stahl; but the idle superstitious nonsense reported of it does not merit a moment's consideration. The disc is eatable, and not unpleasing. Gesner in Raii Historia, i. 288; Halleri Historia, N° 831.

CARLOCK, a kind of isinglass made of the membranous parts of the sturgeon.

CARUS.—Page 355, col. 1, line 43; "*In other respects the treatment does not essentially differ from that of apoplexy.*"—One great question has arisen, whether, in such cases, emetics may be employed, as they determine, during their action, so powerfully to the head. We have already noticed this subject under the articles APOPLEXIA and PARALYSIS, and repeat it now to remark, that in this disease we find no very strong au-

thority for their employment. Carus has sometimes yielded to bleeding of the nose, often to eruptions of almost every different kind. These circumstances strongly evince the necessity of evacuations, particularly topical ones, and that mild gentle diapnoe, which has appeared so active and so useful an evacuant. Alexander Trallian advised castor, in which we perceive Horstius joins; and antispasmodics were formerly no uncommon medicines in affections of the head.

CAROTIDEÆ ARTERIÆ.—Page 355, col. 2, line 2; "*maxillaria interna*."—The branches of the external carotid may be divided into anterior and posterior. The *first anterior branch* goes off from the origin of the carotid, on the inside. It soon takes a little turn, and, sending off branches to the neighbouring glands and integuments, it is distributed on the thyroid glands and the larynx; supplying also, in some degree, the pharynx and the muscles of the os hyoides. The *second anterior branch* passes over the nearest horn of the os hyoides to the muscles of that bone, the sublingual glands, and the tongue: it is lost on the latter, and has been styled *ranina* or *sublingual*. The *third branch*, the *maxillaris inferior*, the *pharyngea inferior* of Sabatier, goes to the maxillary gland, the styloid and mastoid muscles, to the parotid and sublingual glands, to the muscles of the pharynx, and the small flexors of the head. The fourth, *maxillaris externa*, the *labialis* of Sabatier and Haller, at first covered by the stylo-hyoid and digastric muscles, gives branches to the pharynx and tongue, the tonsils, the palate, and, at the angle of the jaw, to the skin and neighbouring muscles. It then runs over the lower jaw, before the inferior edge of the masseter, passes under the depressor anguli oris, which it supplies, as well as the buccinator and depressor labii inferioris. A contorted branch divides at the angle of the lips, and supplying the orbicularis muscle, anastomoses with its opposite. It then ascends to the nose, which it supplies, rises to the great angle of the eye, supplying the external muscles: through all its course it is named *angularis*. The *fifth branch*, *maxillaris interna*, rises over against the condyle of the lower jaw, and is very considerable. It passes between the jaws, giving off, 1st, the *spheno-spinalis*, or *media duræ matris*, passing between the external and internal carotids through the foramen spinale of the sphenoidal bone, and distributing branches to the dura mater in every direction; 2d, the *maxillaris inferior*, which, running through the jaw, and supplying the teeth, escapes at a hole near the chin, and is lost in the neighbouring muscles, after having anastomosed with the branches of the external maxillary; 3d, *pterygoideæ* and *temporales profundæ*, sent to the muscles thus distinguished; 4th, the *buccalis*; 5th, the *alveolaris*, supplying the upper jaw; 6th, *infra orbitaria*, which, after sending a branch to the nose, passes through the posterior opening of the orbitar canal, and having supplied the orbit, the antrum maxillare, and teeth, goes out by the infra orbitar hole, communicating, on the cheek, with the angular artery; 7th, *palatina superior*, and another small branch terminates on the parts at the upper end of the pharynx. *The sixth anterior branch* is very small, and spent on the masseter.

The *first external or posterior branch* is the *occipital artery*, which passes obliquely before the internal jugular vein, and, having supplied some of the contiguous muscles, it runs between the styloid and mastoid apophyses, along the mastoid groove, supplies the muscles and integuments of the hind head in an undulating course. A branch forms a communication with the cervical arteries near the top of the head, and it communicates with the posterior branches of the temporal artery, sending a branch to the foramen mastoideum. *The second external branch* supplies the ear, and what we have called the external cavity. The trunk of the external carotid then ascends above the zygoma, passing between the angle of the lower jaw and the parotid, forming the temporal artery, which divides into an anterior, middle, and posterior branch. The first of these goes to the frontal muscle, communicating with the angular artery, and sometimes sends off a small branch, which pierces the internal apophysis of the os malæ, so far as the orbit: the second or middle branch goes partly to the frontalis, and partly to the occipitalis: the third to the occiput, communicating with the occipital artery.

The internal carotid, at its first separation, is a little incurvated, appearing rather like a branch than an important trunk The curvature is inward, passing behind the neighbouring external carotid, though sometimes at first a little outward It runs upward, without any considerable branch till it reaches the canal of the petrous apophysis of the temporal bone, and after following the direction of that canal, covered by a production of the dura mater, it is again incurvated, and enters the cranium through a notch of the sphenoidal bone. It then bends from behind forward, and makes a third angle on the side of the sella sphenoidalis, and a fourth under the clinoid apophyses of that sella. While it lies on the side of the sella turcica it sends off small branches to the parts about that cavernous sinus.

As it leaves the bony canal to enter the cranium it sends off a small branch through the sphenoidal fissure to the orbit of the eye, and soon afterwards a larger one, the *ophthalmica*, to supply the contents of the orbit. The first branches from the ocular artery are very small, supplying the dura mater on the optic nerve, and the first portions of the muscles at the bottom of the orbit. The *lacrymal and ciliary* arteries are next sent off; the artery covered with the levator muscles of the eye and upper eyelid afterwards turns inward between these muscles and the optic nerve, at nearly a right angle; but where it turns it sends off the *anterior ciliary* branches, and afterwards two go off to the levator of the eye and upper eyelid; then the *posterior ethmoidal* and *arteria centralis retinæ* are separated. While it passes over the nerve it gives off the *musculares superior and inferior*, and other ciliary branches. It now lies at the inner side of the orbit, under the superior oblique and adductor muscles. The adjacent parts receive some small branches from it, when it produces the *anterior ethmoidal*, and its trunk descending under the cartilaginous pulley of the superior oblique, after giving a branch to the lacrymal sac and the eyelids, divides into the *superciliary*, the *nasal*, the *superficial*, and *deep frontals*. At the inner angle of the eye it communicates with the angular arteries, and, within the orbit, sends off some small branches to the nose. The internal carotid, after this distribution of branches, runs under the basis of the brain to the infundibulum,

at no great distance from the internal carotid of the other side, and there divides into anterior and posterior branches.

The anterior branch separating from that on the other side, runs forward under the brain, then coming again nearer, unites with it in the interstice between the olfactory nerves. After supplying these nerves with some branches it separates again, dividing into two, or, according to Winslow, three, branches. The first, the smallest, but a constant one, runs forward to the inner side of the anterior lobe, which it supplies. The second, after it has passed beyond the corpus callosum, to which it sends branches, is reflected back over that substance upon the inner side of the hemisphere, and may be traced to the posterior lobe. From this innumerable branches proceed, anastomosing with the ramifications of the posterior trunk.

The *posterior* branch first communicates with the vertebral artery of the same side, and, after running between the lateral and anterior lobes of the brain, ramifies minutely between its superficial convolutions, so far as the bottom of the sulci, in the duplicatures of the pia mater. The anterior and middle branches ramify in the same manner.

From these extensive communications, stopping or retarding the circulation in the carotid appears to be by no means very dangerous, and it has lately been attempted in a degree which, at first view, seems a conduct unjustifiably rash. Yet it is the result of a sound judgment, resting on an intimate knowledge of the circulation within the cranium. A wound in the external carotid (Journal de Medecine, xxvi. 452) has been healed. The carotid is occasionally ossified, and it has been sometimes dilated into an aneurismal sac.

CARPATHICUM.—Page 355, col. 2, line 25; "*germanis oleum.*"—See BALSAMUM CARPATHICUM. It is pellucid and very fluid, approaching in odour and taste very nearly the oil of juniper. It was first introduced by C. ab Hortis; but its chief recommender was D. Fischer, who rubbed it on the temples in vertigo with success, dropped it into the ears in susurrus and deafness, applied it to erysipelatous tumours, gave it internally in pleurisy, typhus, and calculus. Other practitioners have not found it so useful.

In reality there is another balsam often used for this, which may be distinguished by the appellation of balsamum Hungaricum. It is the distilled oil of the *abies mughos* of Scopoli, var. β., of the pinus sylvestris. The balsam, however, exudes spontaneously from the tops of the branches, and C. ab Hortis is diffuse in his commendations. It is used externally in wounds and ulcers, contusions, obstructions of the catamenia, palsy, spasm, and even gout. Internally the balsam is given from two to nine drops, *it is said*, with success, in obstructions of the viscera, in gonorrhœa, calculus, mænorrhagia, headach, cough, and phthisis. As a diuretic and sudorific it was esteemed excellent. It is easy to see that such exaggerated commendations are suggested by credulity and prejudice; nor have we any reason to trust the recommendation of Fischer who praises, with almost equal warmth, the wood and its bark; the essence and spirit of the abies mughos.

The *oleum templinum*, the krummholzöhl of the German itinerants, is the distilled oil of the tender branches, sometimes of the green cones (Hermannus), of a golden colour, an agreeable smell, an oily but acrid taste. A few drops of this oil are taken in brandy, by the common people of Brunswick, to cure intermittent fevers. In wounds of the nerves and tendons, joined with the spirit of ants, it is said to be really useful, as well as in the running ulcers of cattle.

CARPIO.—Page 355, col. 2, line 47; "*the tongue is the most delicate.*"—It is not generally known that the carp, which belongs to the genus *cyprinus*, is an inhabitant of the south of Europe, brought to England in 1514, to Denmark in 1560, and introduced some years afterwards into Holland and Sweden. Its food is the larvæ of insects, worms, the spawn of fish, seeds, and the young shoots of plants. They are said to live on mud; but this is untrue, though they swallow it in large quantities. Some naturalists have denied that they feed on vegetables, but they devour lettuce leaves within our sight; and Bloch observes that they thrive greatly in ponds abounding in the *Nais*. The same author has observed some hermaphrodite carp, which had a milt in one ovary, and eggs in another: it was formerly the custom, and may perhaps be so still, in England to castrate carp, to render them larger and fatter. All the aid of cookery has been, in vain, exerted to render carp a luxury. Its meat is neither highly flavoured, nor, as is said, very wholesome. The French physicians think it injurious to convalescents, and that it induces paroxysms of gout; effects probably derived from the sauces and condiments.

CARTHAMUS.—Page 356, col. 1, line 29; "*perfection in England.*"—The flowers are originally of a citron colour, but acquire the bright yellow by being macerated in brackish water, and exposed to the sun and dew. They are valued only for their colour, and used in food on this account. In India, according to Rumphius, they are given in jaundice, and as deobstruents.

The seeds are white, wedgeshaped, quadrangular, shining, and hard, including a white, unctuous, sweet kernel, whose epidermis is brown, bitter, subacrid, and nauseous. Except, however, in a dose of one or two drams in substance, six or eight in emulsion, they do not prove laxative. Their nauseous taste is unpleasant to the stomach, so that aromatics must be necessarily combined. Mesue informs us that they promote expectoration, and render the voice clear. They are not injurious to fowls, who are fond of them, and their oil is eatable.

The young leaves were used by the Egyptians as pickles; the older ones as salad. The powder of the leaves coagulates milk. The dry leaves and stalks are found to be an useful winter fodder for sheep and goats.

CARTILAGO.—Page 356, col. 2, line 35; "*too minute to be visibly demonstrated.*"—The consistence and cohesion of cartilages are less than those of ligament, and they yield less easily; but they are composed of plates nearly as bones. The perichondrium of the cartilages of the ribs and larynx has more considerable arteries than those of the joints, and penetrate deeper; but madder never changes their colour. The granulations which rise from the ends of the metacarpal and metatarsal bones, after amputation at the first joint, are acutely

sensible, which shows that cartilages have nerves, though in a sound and firmer state insensible. From their less cohesion they exfoliate sooner than bones; but are subject to ossification, which more readily occurs in those parts where the motion, however constant, is not considerable. Some unnatural, interarticular cartilages are occasionally met with loose within the cavity of the joint. Numerous instances occur in medical authors (Medical Observations and Inquiries, v. 30; Bromfield's Observations, i. 330; ii. 76; Desault, Journal de Chirurgerie, ii. 15; Morgagni de Sedibus. lvii. 14; lix. 12; Simson Edinburgh Medical Essays, iv. 306). Sometimes little bones are mixed with the cartilages, and sometimes the little separate cartilages are partly osseous. These separate cartilages seem to sprout from that which covers either end of the bone, and to have been separated from some violence. Their usual seat is in the knee. (See GENU.) The xiphoid cartilage is sometimes bent inward, sometimes luxated.

CARTILAGO ANNULARIS, synonymous with the CARTILAGO CRICOIDEA, q. v.

CARTILAGO ARETENOIDEA. There are two cartilages distinguished by this name at the top of the ASPERA ARTERIA, q. v. They are small and equal, resembling, when united, the spout of an ewer, and situated immediately on the top of the cricoid cartilage. Each has a basis, two horns, a posterior concave, and an anterior convex side, an internal edge, and a very oblique external one. The bases are broad and thick, with concave articular surfaces, by which they are joined to the cricoid cartilage. The cornua are bent backward, approaching each other, sometimes apparently separate appendices. Between their inner edges they form a kind of fissure, and each outer oblique edge terminates by a thick prominent angle.

CARTILAGO CRICOIDEA is situated between the thyroid and aretenoid cartilages, and the trachea, constituting the basis of many of the annular cartilages of the aspera arteria. It resembles a thick, irregular ring, very broad on one side, and narrow on the other. Its basis, to which the trachea is connected, is almost horizontal in an erect posture; its posterior or convex side divided by a prominent line for the insertion of muscles. Above this line the top is gently stopped, terminating on each side by an obtuse angle, formed between it and the oblique edge of each lateral portion of this cartilage. At the upper part of each angle the articular surface is smooth and gently convex.

The posterior side is distinguished into two lateral portions by two prominent lines, each of which runs almost perpendicularly from the articular surface at the top. a little below the middle, where it terminates in another articular line, a little concave, and near these four articular surfaces there are small tubercles. With the superior surfaces the arytenoid cartilages are articulated with the inferior horns of the thyroid.

CARTILAGO ENSIFORMIS, the cartilaginous lower extremity of the STERNUM, q. v.

CARTILAGO INOMINATA, synonymous with the ANNULARIS, or CRICOID.

CARTILAGO SCUTIFORMIS. See CARTILAGO THYROIDŒA

CARTILAGO THYROIDŒA, (from θυρεος, *a shield*, and ειδος, *forma*). The thyroid or scutiform cartilage is placed perpendicularly to the cricoid, forming the anterior, superior, and largest part of the larynx. It is large, broad, and folded so as to have a longitudinal convexity on the fore side, and two lateral portions, styled *alæ*. The upper part of its anterior, middle portion is formed into an angular notch: the upper edge of each ala makes an arch, resembling, together, the upper part of the ace of hearts. The lower edge of each ala is more even, and the posterior edges of both are very smooth, being lengthened above and below by apophyses, called the *cornua*. The superior are the longest, and the extremes of all are rounded like small heads, which in the inferior apophyses have an apparently articular eminence on the inside. On the outside of each ala, near the edge, is a prominent oblique line, running from behind forward, the upper extremity of which is near the superior horn, and this, as well as the lower, terminates in a small tuberosity. These tuberosities serve for the insertion of muscles and ligaments: the lowest is the largest. The inside of the alæ, and the convex side of the anterior portion, are uniform. This cartilage often ossifies in advanced life.

CARUI.—Page 356, col. 2, line 57; "*Its roots and leaves are esculent.*"—The seed is ovate, oblong, striated; the involucrum monophyllous; the petals carinated below, and emarginated by their inflection. The cultivated plant produces larger seeds than the wild, and in many places its cultivation is an object of peculiar attention. The tender roots are eaten as pickles, sometimes preserved: in general they resemble parsnips. A wine made from infusing them with other fermenting mixtures is called CARITES, and formerly much used in Germany. Weinman supposed that the roots of carui formed the *chara cæsaris*, from which the soldiers of Valerius prepared bread; but that plant seems rather to have been one of the edible algæ. The tender leaves are sometimes boiled as potherbs. The seeds are so full of oil that Lewis procured from them one-thirtieth; Spielman one-eighth. In flatulent colics they are applied in the form of a cataplasm made with crumb of bread and Rhenish wine, and in tertians they are said to be useful (Lin. Flora Suecica, 95). They are supposed to increase the milk in the breast of nurses, and to attenuate viscid sputum.

CARYOPHYLLATA.—Page 357, col. 2, line 36; "*Nat. order rosaceæ.*"—It is a rough plant, with dark-coloured winged leaves, and pentapetalous, yellow flowers, standing in ten leaved cups on the tops of the branches: the seeds are hairy, the roots slender and full of fibres. of a dark brownish colour on the outside, and reddish within. When fully grown, it consists of a short oblong trunk, throwing out numerous, thick, long, attenuated fibres: at an earlier period it is fibrous only. It must be dried slowly, and with caution, as its supposed febrifuge virtue is otherwise destroyed. The thicker part of the root is the most active; it must be dug in spring or summer, and what grows in mountainous districts is preferred. The powder of the

root is of a pale red, and slightly tinges wine or spirit with this hue. In distillation, a white, thick, oily matter comes over. The watery extract is more copious than the resinous; but each consists of different proportions, both of gum and resin. It preserves beer like hops, and gives it a peculiar fragrance.

Many idle stories are told of its producing sweat, and assisting the appearance of eruptions of its aphrodisiac, emmenagogue, and alexipharmic power. Haller complains that in malignant fevers it often occasioned delirium. Its utility in scurvy, and in relaxed gums, rests on a better foundation, as well as its salutary effects in dyspepsia. At the end of dysenteries, Scopoli informs us that it has been serviceable; and in decoction, particularly with ale posset, it has cured intermittents, if given before the fit.

It is unnecessary to engage in the dispute respecting the febrifuge powers of this medicine. Among the Danish physicians who support it we find the names of Buchnave, Aascow, Callisen, Bang, Weber, Schonheyder, Tode, and Waldstedt. Their cases are related distinctly, and the successive changes very carefully pointed out. On the opposite side are ranged Ab Acrel, Dalberg, Christopherson, Barfoth. We own, on examining the different facts, the clearness of the narrative, the accuracy of the observations, and the precision of the language, lead us to the former party. Yet they have probably exaggerated its virtues; and, though not a certain febrifuge, it may be a valuable medicine.

In other diseases from debility, as diarrhœa, leucorrhœa, passive hæmorrhages, hysteric spasms, and flatulent colic, it has been useful. To these the hooping-cough, with less propriety, has been added.

CARYOPHYLLI AROMATICI.—Page 358, col. 1, line 10; "*genus eugenia.*"—We have examined, with some care, this assertion, and find it without foundation. The testimony of Sonnerat, Gentil, and Tessier ap. Rozier's Journal, 1779, are decisive. The resemblance, however, to the eugenia jambos is very striking; and there is a wild clove, with long footstalks and obtuse leaves, but without the peculiar aroma of the clove, which must be distinguished from it.

The tree is of a middle height, from fifteen to twenty-eight or thirty feet, with a large pyramidal top. The trunk, about a foot in diameter, is angular at its lower part, and covered with a grey, smooth, thin cortex, which adheres very closely: it is strait and unbranched to the height of five or six feet, and divides into different limbs, furnished with opposite branches, terminated by bunches of beautiful flowers. The leaves are united, shining, and opposite, born on a footstalk of from six to eight lines, which Sonnerat tells us is even more aromatic than the clove. The leaves are from two to four inches by an inch and a half, entire, with a border a little undulated. They resemble the leaves of the common laurel, and may be rubbed to a powder by the fingers. Their internal surface is perforated by little transparent points. The fruit, which we have called *anthophyllus*, is sometimes styled the *mother clove*. The flowers are at first white, then green, and at last red and hard. The cloves are beaten down from October to February, received in cloths, and dried in the sun, or in the smoke of the bamboo. They are usually, however, previously immersed in water; and, if this is omitted, the cloves are wrinkled and light.

About 380 grains of a nauseous and somewhat astringent extract was obtained from a decoction of 960 grains, and about 300 of a fiery extract by means of alcohol. The pungency is from the oil; for the resin is tasteless. The first product of the oil is very white and pellucid; but it becomes yellow from the access of air. It is an ingredient in the *apoplectic balsam* of the Wirtemberg dispensatory, and in Hoffmann's *balsam of life*.

CASSIA CARYOPHYLLATA.—Page 361, col. 1, line 63; "*under different names into Europe.*"—See CORTEX CULLILAWAN.

CASSIA FISTULARIS.—Page 361, col. 2, line 10; "*is brought to us from the Brasils.*"—The tree, in Alexandria, where it was originally found, rises to the height of forty or fifty feet, with a large trunk, divided into many branches: the leaves are pinnated, composed of five pair of spear-shaped lobes, smooth, with transverse nerves from the mid rib to the border. The flowers stand in long spikes at the end of the border, on a long peduncle, composed of yellow concave petals, succeeded by cylindrical pods. The pulp of the American cassia is more nauseous than the eastern, and the pods are larger, thicker, and more rough. The hard part of the pods seems to contain a purgative matter, and Fallopius prefers it to the pulp. It is doubtful whether this plant is the *siliqua ægyptiaca* of Theophrastus. It was apparently mentioned first by Avicenna under the name of *chaiarlander*.

CASSIÆ FLORES. These are the flowers of the cinnamon tree, and are, like the cinnamon, aromatic and somewhat astringent.

CASSIA LIGNEA.—Page 362, col. 1, line 30; "*laurus Malabathrum.*"—It has been doubted whether it is really a distinct species, and, on the whole, the difference appears rather to be the result of cultivation than any real specific difference (Combe, Philosophical Transactions for 1780, p. 873; Thunberg, Vet Acad. Handl. 1780, p. 56; Solander ap. Dossies Memoirs of Agriculture, 202, note). In general, it is not convoluted like cinnamon, which is said to happen from the bark being taken from the trunk: when from the branches its appearance is the same.

CASSUMUNAR.—Page 362, col. 2, line 46; "*as a medicine of uncommon efficacy in nervous diseases.*" It was, in fact, introduced by Dr. Peachy (Sloane in the Philosophical Transactions, No 264), assisted indeed by Dr. Marlow. Mead was said to have considered it as a valuable medicine, and, on this account, it long held a place in the British dispensatories.

Cassamunar has the smell of ginger, and, with the taste of the zedoary, a slight flavour of camphor is mixed. The spirituous tincture is of a deep yellow, agreeably bitter, and of a steady warmth. It was recommended by Peachy in apoplexy, palsy, vertigo, and colic. It is probable that it was an useful medicine, and has been perhaps too hastily discarded.

CASTOR.—Page 363, col. 1, line 62; "*which is in thin long bags.*"—Alcohol, proof spirit, and even water, with the assistance of heat, extract its virtues. From 480 parts of castor, Neumann obtained 140 of alcoholic extract, and eighty of watery; inversely fourteen of watery, and twenty of alcoholic. The first alcoholic extract retained the whole flavour of the castor, since none of it rose in distillation. On the contrary, the distilled water contained all the flavour, and the extract was merely bitter. Cartheuser obtained a volatile oil from it by distillation.

CASTRATIO.—Page 364, col. 1, line 18; "*for the better convenience of tying the vessel.*"—The operation is necessary, when a severe contusion has bruised the testicle, in cases of fungous ulcers, sarcocele, hydrosarcocele, and cancer. If from a blow the scrotum is considerably swollen, and, after discharging the fluid, the organisation of the testicle is found to be essentially injured, the operation is indispensable. In sarcocele it is equally necessary, whether the testicle hardens or remains soft, which sometimes happens, though the tumour is considerable, and continues increasing. If the cord is enlarged so far as the ring, hard, unequal, and sore to the touch, with pains extending to the region of the loins, we must not risk the operation; and these reasons will acquire greater force if the patient's complexion be livid or of a lead colour; if the skin is dry and burning, or an habitual fever has worn him down. Yet if the patient is otherwise well, and has no pain but what rest and a suspensory bandage will remove, a slight swelling of the cord should not delay the operation. The testicle is seldom diseased without some tumour of this part; and M. Peyronnie performed it though its size was two inches in diameter. Sometimes the size of the cord is increased by a portion of intestine, or of the epiploon, which has accidentally fallen into it. Sharp and Garengeot consequently advise opening it, when swollen, to avoid comprehending either part in the ligature.

The operation is very simple. It is proper to place the patient on the right side, whichever testicle is to be amputated. If the size of the tumour is moderate, and it is not ulcerated, the surgeon raises with his finger and thumb the teguments at the upper part in a transverse fold, which he cuts through, and continues his incision from above and below. When the teguments are less loose, and the tumour is considerable, the knife should be directed by a grooved sound, so that the incision should extend from the ring of the muscle to the lower part of the tumour. If the swelling be large, ulcerated, the teguments thin, and of an unusual colour, two incisions must be made in the form of segments of a circle, inclosing the diseased portion of skin, which must be separated with the testicle.

In either way the cord must be laid bare, and the cellular substance carefully dissected; but without separating it from the parts below. When it appears larger than usual, it is necessary to examine whether this is owing to any portion of prolapsed intestine. If not, the cord is raised by the finger and thumb, and a common needle, armed with a thread, passed under it, as a precaution chiefly if other means of stopping the hæmorrhage fail. An incision is then made through it, and the testicle separated. When the cellular texture is loose, it may be torn with the fingers, otherwise it must be separated with a bistoury, cautiously avoiding any injury to the urethra or the integuments; for, when the testicle is very large and indurated, considerable adhesions take place. To check the hæmorrhage, Le Dran and Saviard advised drawing down and compressing or convoluting the cord, as the females of quadrupeds stop the bleeding in the funis. Other practitioners surround the end of the cord with little dossils, and compress them. The ligature is, however, now preferred, and, when fixed, the cord must be divided a finger's breadth, at least, below, or the cord will retract above the ligature, which will remain only on the cellular substance. Yet the pain of the ligature, the spasms which frequently follow, have led surgeons to employ a less dangerous method. They observed, that when the cord was cut the cellular substance retracted more than the vessel, which left the latter free for the operator to put his ligature on it, which may be easily effected if the vessel is raised by the dissecting forceps. The most dangerous bleedings are from the arteries of the dartos, which separates the testicles; but these may be tied like the vessels of the cord. This is indeed the method of Mr. Gooch and Dr. Hunter; but in the proposal they seem to have been anticipated by the French surgeons.

The diseased integuments must be then separated, the wound filled up and covered with lint, on which an oblong compress is placed. The patient is then laid on his back in bed, with his shoulders raised, and the legs and thighs bent. The external dressings are changed when necessary; but the internal ones left about nine or ten days. when the suppuration has come on, and soon afterwards the ligatures drop off. The first thread, which was introduced by way of precaution, may be then removed.

When the cord is greatly diseased, and the tumour extends to the ring of the muscle, it is often necessary to divide the latter, to prevent gangrene. Yet this step should, if possible, be avoided, as numerous inconveniences may result. In general, by the mode of tying the arteries just described, the necessity is often precluded.

The *castration of females* consists in extracting the ovarium. This we know is done often with success in quadrupeds, and we have heard of its being practised by one of these operators on his own daughter. The excision of the ovaries has been more seriously proposed when diseased. The operation seems to have been recommended by Felix Plater; but other authors of an earlier and a later age appear to have formed an opinion of its practicability. Diemerbroeck, on the contrary, contends that the wound in the abdomen would be highly dangerous, and that hæmorrhage must prove fatal. Ancient historians, however, mention the practice; and Franknau seems to have seen a woman who had lost an ovarium, in consequence of a wound. Yet it is difficult to draw any conclusion from such an accident; for a diseased ovary often adheres to the neighbouring parts; and, when large, its vessels are dilated in the same proportion; nor is it in the greater number of cases easy to say that the ovarium is the part affected. The idea must, therefore, be banished as a necessary surgical operation, and fortunately the voices of women do not change at the period of pu-

berty, so as to render them victims of a wanton experiment, to administer to the amusement of others.

Castration in botany consists in cutting off the antheræ, previous to the evolution of the pollen. It is chiefly employed as an experiment to confirm, or confute, the sexual system.

CATALEPSIS.—Page 365, col. 2, line 13; "*fatal apoplexy.*"—This disease is so peculiarly rare, that it requires no little leisure to establish the facts on the subject. On considering HYSTERIA, q. v. we were struck with the analogy between it and catalepsy, and added an article, HYSTERIA CATALEPTICA, q. v. Its connection with hypochondriasis is no less evident, and we should be inclined to reduce it to either of these diseases; but rather the latter than the former. We find, in Baldinger's Magazine, that cataleptic patients bear very considerable doses of medicines, though in one case, where forty grains of emetic tartar did not produce vomiting, it was combined with mania. It has happened also after severe headachs, from deep, long, fixed attention (Plateri Observationes, i. 30); from disappointment in love (Tulpius, i. 22); from plethora, terror, and sordes in the stomach. Since the article was written we have seen two cases of less degrees of the disease, which were truly hysterical.

See also Wepfer Observationes, Wedel de Soporosis Affectionibus et Catalepsi; Stoll Prælectiones, ii. 10; Fabri Tentamen de Catalepsi; Hoffmann de Affectu Cataleptico Rarissimo; Philosophical Transactions, N°. 437; Tissot on the Diseases of the Nerves.

CATAPUTIA.—Page 366, col. 2, line 53; "*sometimes of a nauseous taste.*"—The seeds of the *ricinus inermis* Lin. Systema vegetabilium, ed. 14, p. 865, supply also an oil well adapted to medical use. They are as large as those of the almond, but in every respect similar to the lesser ones. The capsules of these seeds are of the size of a filberd, and they have been erroneously supposed to be the production of the *r. mappa* Lin. Sp. Pl. 1430. In the article, for this number, 430 is erroneously substituted. The greatest caution is, however, required lest the seeds of the ricinus be confounded with those of the croton and jatropha, which are highly drastic; an error which probably occasioned the complaints of the dangerous and drastic power of the castor oil. This more acrid oil was the *oleum cicinum* of the ancients, from Κικι, the synonym of Κροτων (Dioscorides). See RICINOIDES in the following page. Later authors, who have so warmly reprobated the use of this oil, viz. Geoffroy, Linnæus, Vogel, Crantz, &c., probably employed the whole seed, which seems, according to Thunberg (de Medicina Africanorum, 4), to be still practised in Africa, where it is used in gonorrhœa. The other parts of this plant are not acrid (Bonelli Memoira intorno all Olio di Ricino Volgare, 8. 10). The leaves, rendered slightly flaccid by heat, are said to relieve the pains of gout and inflammations of the eyes. The recent leaves are applied to erysipelatous and inflammatory swellings; to the abdomen to relieve colics; macerated with vinegar, to relieve herpes, itch, and tinea capitis (Canvane). Yet they should be used with caution; for we find, in the History of the Society of Medicine at Paris, ii. 302, that, when applied to the head in hæmicrania for one night, they induced blindness. The root is said to be a powerful diuretic.

The oil is separated from the seeds by boiling, or by expression. The former method procures the largest quantity; but it has less sweetness, and is more disposed to rancidity than the expressed oil. From a pound of the seeds, Bonelli obtained eight ounces of oil. Two pounds thirteen ounces of decorticated seeds yielded, by expression, with the assistance of hot water, a pound and six ounces of oil. The proportions differ on account of the different quantities of mucilage combined with the oil. If the shells are not separated a less quantity of oil is obtained, though without any variation of its sensible properties (Murray). Yet the shells show, in every experiment, the most decided marks of acrimony, and Odier remarks, in the Journal de Medecine, that such oil is called, by way of distinction, *oleum escharoticum Riverii*, and that a single drop excites heat and inflammation in the fauces. The difference may perhaps be reconciled by the difference of pressure to which the seeds were exposed, perhaps to different seeds having been used.

Genuine castor oil is thick and viscid, when obtained by expression, containing some fluid mucilage, almost insipid or sweet, without leaving any acrimony in the fauces. The oil, that is somewhat opaque, is newer and more effectual than what is pellucid, and of a yellow colour. The colour of the recent oil is of a blueish green, of a specific gravity superior to other oils and fats, approaching to solidity in the cold, resembling in that state the colour of amber, and almost pellucid. It burns with an agreeable odour, resembling wax. What is sold differs greatly in colour and acrimony: the whiter is less efficacious, and that which is whitened by repeated boiling in water has little purging power. By age it approaches the consistence of new honey, is red, and diaphanous. What is obtained by boiling is described by Labat as equally clear with olive oil.

We have given, in the article, a somewhat unfavourable view of the utility of the castor oil in fevers and colics. In fact, after an apparently free evacuation by its means, we have found fœculent matter in large quantities remain. The experience of two bilious epidemics has corrected our views, and, after calomel with the usual drastics had failed, we have procured a free and copious discharge by castor oil, with the infusion of sena. The Devonshire colic has hitherto resisted its powers; but Selle found that it relieved the asthma arising from saturnine fumes; and we have experienced its efficacy, at least as a prophylactic, against colic from lead. In ileus it is said to be useful, and singularly so in that species of the complaint which arises from repelled gout: in vomitings, like those which arise from volvulus or a gall stone, Bergius found it of equal efficacy. In cardialgia, with vomiting and obstinate costiveness, it was highly useful (Quarin); in dysentery not less so (Tode). In the tænia lata, Odier found it beneficial, and he substitutes it for the drastic purgative in madame Nouffer's remedy. Even alone it often discharges the whole worm: in the *t. solium* it seems scarcely to have been tried, and to the lumbrici it is apparently not injurious.

CATAPUTIA MINOR.—Page 367, col. 2, line 14;

" *tithymalus latifolius*."—It is the *euphorbia lathyris* Lin. Sp. Pl. 655. The seeds of the cataputia minor are three, in a trilocular capsule, oval, larger than hemp-seed, obliquely truncated at one end, consisting of a brown, rough, brittle shell, and a white oily nucleus, of a taste at first mild, and afterwards somewhat acrid. It is singular that the appellation is the same with that of the cataputia major, when the resemblance of the seeds is so inconsiderable. The effects of these seeds are apparently unequal, without any adequate reason. The ancients gave them as cathartics in a dose of eight or ten grains (Dioscorides and Rufus Ephesius); modern physicians and empyrical practice have admitted doses of thirty grains, it is said, without danger; but so uncertain a medicine may be advantageously neglected.

Ricinoides.—Page 367, col. 2, line 34; " *but is rarely used, on account of its activity*."—These seeds afforded the *oleum cicinum* of the ancients; but the modern accounts of their efficacy vary greatly, chiefly from the seeds reaching Europe in a rancid state. Dr. Percival relates a case in which twenty of them proved fatal. Medical Transactions, iii. 96.

Grana tiglia.—Page 367, col. 2, line 51; " *one dram of the oil is a strong dose*."—The whole plant is highly acrid, so as to inflame the mouth, fauces, and intestines, down to the anus. The root is milder than the seeds. The latter were formerly in general use through the whole of India as an hydrogogue in dropsies. Two seeds were sufficient for the robuster patient, one for the weaker, and four were often fatal. They are poisonous to fish. The acrimony is said to reside in the oil, and, when prepared from the dry seeds, a drop is supposed to be the dose, which Lewis, whom we followed in the article, has changed to a dram (Rumphii Amboyna, iv. 98; Lewis's Materia Medica, 481). The oil also rubbed on the navel is equally cathartic. Four grains of the powdered seeds have expelled a tænia, though with great faintness and debility. They were given in milk; and in the colic pains, which they excited, milk was freely drank. Vogel succeeded with this remedy in what he styled a severe pituitous disease, which he does not particularly describe.

The lignum pavanæ is light, spongy, of a pale hue, covered with an ash-coloured bark, of a disagreeable smell, and highly pungent taste.

Cataracta.—Page 368, col. 2, line 29; " *no contraction of the iris takes place*."—The ancients considered the crystaline lens as the seat of vision, and the cataract was supposed owing to a membrane, formed by an approximation of the thicker particles of the aqueous humour. Kepler pointed out, in 1604, the true use of the lens, and thus led the way to the discovery of the true nature of the disease It seems to have been established by observations, previous to the year 1651; and Quarrè, a French surgeon, has indisputably the honour of the discovery.

The cataract occasionally appears at different distances from the pupil, and this has given rise to the distinction of *deep* and *superficial cataracts*: the latter constitute the disease in its greatest degree, and its most advanced stage. The patient sees as through a cloud, and better in a cloudy than a bright day. The reason of the latter singularity is, that the disease at first occupies the centre of the lens; but in a cloudy day the pupil is dilated, and admits the rays at the edges of the disc. Objects, for the same reason, are best seen near the sides: the pupil often preserves its usual diameter.

Cataract has been attributed to various causes, and, among them, the aqueous humour has been supposed, not according to the ancient doctrine, to be the seat of the disease, but to have induced it by a vitiated state. Morgagni mentions its diminution among the causes. It may perhaps be styled an obtuscation from inflammation; for the general causes are of this nature. To inflammation may be referred the cataract which proceeds from blows, and injuries to the eye, from repelled eruptions (Hartman), suppressed perspiration, and convulsions. Cataracts, which arise from a concurrence of injuries, are rarely, according to Wenzel, successfully cured by the operation.

Not only hemlock, but the aconite, pulsatilla, napellus, and the tribe of poisons, have been given. These, if they produce any effect, will correct that chronic kind of inflammation on which cataract apparently depends. Whatever produces an evacuation from the eyes is sometimes useful, as dropping in laudanum, stimulating collyria, electricity, errhines, &c. Mercurials in small doses, and long continued, are commended, and have certainly sometimes relieved. Quarin informs us that hemlock will often prevent a cataract from increasing, but seldom cure it. Any accident which produces violent inflammation in the other eye has relieved a cataract, and the advantage derived is apparently owing to the remedies employed for the new complaint. If this be true it will suggest the utility of a more active plan of evacuations in this disease, which will only be contraindicated by the state of the patient. Though cataracts are most commonly the disease of the weak and aged, they sometimes occur in the young and plethoric. Every method, however, hitherto tried, has been attended with so little advantage, that the operation is considered to be the chief remedy.

When the patient can distinguish dark from light, though he can neither discern the form nor the colour of objects; when the eye preserves its usual form and dimensions; when the cataract is of a pearl colour, and when the cloud which apparently obscures objects has become gradually thicker, success from the operation may be expected. Yet, with all these favourable circumstances, if one eye only is affected, the operation is not advisable. It is unnecessary, since the other remains; and whatever be its success, the focus of vision in each has been for some time so different, that the sight cannot be distinct.

On the contrary, the operation will not succeed when the patient cannot distinguish a bright from an obscure situation; when the pupil is wholly immoveable, whether contracted or dilated; when the form of the eye is unequal, and its bulk increased or diminished; when the cataract is red, blue, yellow, a dark brown, or of a snowy whiteness; when it has been preceded by the sensation of floating cobwebs; when there have been violent pains in the head, or some chronic disease of the eye. The operation should also not be performed on infants, who cannot be kept at rest,

As the circumstances of the cataract being soft or hard must influence our decision, it is necessary to consider the appearances which lead to the decision.

Mr. Pott suggests to our inquiry, whether, when the opaque crystaline is dissolved so as to become soft, it is not enlarged, or when hard, contracted. When the pupil is constantly dilated, and, though moveable, does not contract in the usual manner, the cataract is often soft: when contracted, hard. The softer cataracts Mr. Pott suspects have become opaque very slowly, with little or no pain, while the harder become opaque more hastily with severe, deep-seated pains, particularly in the hinder part of the head.

The objections, at least the most important ones, to couching are, 1. the impossibility of success, if the cataract be soft. 2. If of a mixed kind, the softer parts cannot be depressed, and the firmer ones, eluding the point of the needle, may remain in the posterior, or escape into the anterior, chamber. In one case the operation will be unsuccessful, in the other the pain and inflammation will be violent and distressing. 3. If the cataract be hard, it will probably be insoluble; and, though it may not rise, prove, in different ways, an impediment to vision. 4. However successful the depression, yet the operation must greatly disarrange the organ. The two first objections, he observes, are unfounded. The third objection, he thinks, is well founded in a very few instances, if at all, and has been repeated without sufficient inquiry. If the cataract be perfectly soft, the contents will escape into the aqueous humour, and be gradually absorbed, the humour becoming transparent as before. When the cataract is of a mixed kind, the softer part may escape; but the harder will remain, and may require a repetition of the operation, though the admission of the aqueous humour will contribute to its solution, or, if pushed into the anterior chamber, it gradually disappears. These objections then are rather supports of the operation, and the arguments which obviate them acquire additional force, when we reflect that there is no perfectly firm cataract, but all are in part soft; and the firmest is rather the nucleus of an opaque crystaline. The injury done to it, in removal, renders it subject to the same laws as dead animal matter. The last objection has only any force when the hand is unskilful; and the most salutary operations may be most injurious when injudiciously conducted.

The original idea of the cataract being a membrane formed from the grosser parts of the aqueous humour very early suggested the idea of extraction. Albucasis proposed to puncture the cornea, and extract the aqueous humour by suction. From the time of Avicenna, for many ages, the cornea was punctured below, to draw down the lens. Hooks, and needles combining the use of forceps, were employed, and an itinerant occulist showed an instrument of this kind to the elder Albinus, in 1690. About the same time Homberg sent a similar instrument to the French Academy, of which he insinuated that he was the inventor. It seems, however, never to have been used, and the first operation of extraction was performed by Frere Jaques, more generally known by the name of St. Yves, mentioned by Mery, in the Memoirs of the Academy for 1707. The process, however, he did not describe; but, about a year afterwards, Mery was consulted in a similar case, and he recommended this operation, which was performed by Petit. The state of the lens, when extracted, showed the true nature of the disease, and it is described by this academician in the Memoirs of 1708.

The form of the needle in couching is greatly varied: they have been round, lance-shaped, cutting on the sides, straight and large. Those which are lance-shaped, and of a moderate size, are preferred. The needle is held like a pen, with the cutting edges above and below, the surgeon resting the ring and middle finger of his hand on the patient's temple, as a point of support, and while waiting till the eye shall be a little at rest from the agitation which the preparations have occasioned. The surgeon then plunges the needle a little below the transverse diameter of the cornea, and about the eighth of an inch distant from it. Nearer it would injure the ciliary circle, wounding its vessels and nerves: at a greater distance it would pass through the aponeurosis of the external rectus, wounding some of the branches of the sixth pair of nerves distributed on it. The distance, in the opinion of different practitioners, has greatly varied; and Sharp, as we have seen in the article, directs it to be less than one-tenth of an inch. The surgeon then depressing the handle of his needle, raises the other extremity to the top of the lens, and turning it so that the cutting edges may be horizontal, depresses the lens firmly and steadily. When it has reached the bottom of the eye, and is apparently fixed there, the needle is returned to its first position, and gradually withdrawn. The coolest regimen, rest, tranquillity, darkness, &c. are necessary afterwards, as in ophthalmia.

If a vessel is wounded, or a milky or purulent matter discharged, it is necessary to wait, and withdraw the needle, till they have been absorbed. If the cataract has been of long standing, it may have contracted adhesions, which must be cleared with the needle before we can depress the crystalline. Sometimes the lens breaks, and it is then necessary to depress each portion; sometimes it passes through the pupil, and is lodged between the iris and the cornea, so that the operation of extraction is indispensable; sometimes it rises again, and this is perceived at the moment, or at the first examination of the eye. In the first case it must be depressed more carefully, and held down more steadily; in the second the operation must be repeated at a future period.

The last accident practitioners have attempted to avoid by a different manner of operating, viz. by puncturing the capsule at its posterior and inferior part, before the crystalline is depressed. This is effected by passing the needle into the lens at the lower part, and turning the cutting edges, so as to divide the capsule below. The operator then draws back the needle, giving the horizontal direction in the middle of the crystaline, as before, and completes the operation, as in the first case. Ferrein proposed this method in a memoir presented to the Academy of Sciences at Montpelier in 1707; Petit, of Namur, claimed it in the Memoirs of the Academy of Paris, in 1722; the chevalier Taylor, in 1738; and the operation has been described with great accuracy by La Faye, in his Notes on Dionis' Treatise in 1740.

However carefully the operation is performed, it sometimes occasions considerable inconvenience. Many acutely sensible parts are divided, the vitreous humour is in part torn from its adhesion to the ciliary processes;

the consequences of which are often very severe pains, vomiting, inflammation, fever, and suppuration of the whole eye. When these symptoms are less severe, an opacity of the crystaline *membrane* often ensues, occasioning a secondary cataract, first demonstrated by Benomont in 1722. In consequence of these and similar accidents, the operation of depression was warmly opposed by Hovius, Raw, and Heister, who contended, that it did not succeed in one of a hundred cases, and where it was successful, pains of the head continued to distress the patient, and blindness, after no long interval, came on. These objections are now no longer valid, since, from superior skill and address, the operation of couching is neither very uncertain nor dangerous: the greater number of patients recover, at least, a very useful and comfortable degree of vision.

Daviel's instruments for *extraction* were a large iron needle, lance-shaped, fixed on a plate of untempered iron, to admit of its being bent to a curvature adapted to the convexity of the eye; a second needle, longer, straighter, blunt, cutting on the edges, mounted on a similar handle; two pair of convex scissars, bent in opposite directions; a spatula of gold, silver, or steel; a second lance-shaped needle, much smaller, and of the same form as the first, a curette, and forceps.

After the usual preparations, Daviel thrust the first needle into the anterior chamber of the eye, penetrating the middle and inferior part of the transparent cornea, at some distance from the opaque. He introduced it between the iris and the cornea, so that its point extended opposite to the superior part of the arc of the pupil. The aperture was enlarged by the blunt needle, and, if yet not sufficiently wide, by the scissars, following as much as possible the circumference of the cornea. When this part was cut, so as to form a semicircular flap of about half its extent, Daviel raised the flap with the curette, and carrying the straight needle into the eye, opposite the pupil, pierced the anterior part of the capsule of the crystaline. If this capsule was thick, and of a dark colour, he cut it round with the needle, and raised it so that it might be no impediment to the transmission of light. The crystaline was then separated by slight frictions with the fingers on the inferior part of the globe of the eye. This body passed obliquely through the aperture of the pupil, which it gradually enlarged, and then fell out on the patient's cheek.

In this operation the aqueous humour is necessarily discharged; but we know that it is soon reproduced. The adhesions of the crystaline to the iris, common in old cataracts, Daviel separated with the curette, or with the needle designed for the opening of the lens. It was sometimes difficult to prevent the escape of the vitreous humour, however moderate the pressure, and he then assisted the escape of the crystaline with the curette, and, at the moment of its passing, permitted the eyelids to be closed. The pupil, after the operation, was not always clear; for glairy flakes often passed across it. Daviel separated them with the same instrument, and employed it to raise and restore the folded iris so as to give the pupil its former shape.

Daviel is copious in recounting the advantages of his method, and its success. Out of two hundred and six, he tells us that a hundred and eighty recovered their sight. In this enumeration he is suspected to have greatly exaggerated, though he was certainly more successful than other operators who depressed the lens. Garengeot attempted to simplify the operation by using the scissars only after the puncture, cutting the cornea from the superior to the inferior part, and from within outward, forming a trapezium; but he had no imitators.

The first material improvement on Daviel's method was made by La Faye. The knife designed to open the transparent cornea, from the small to the larger angle of the eye, is mounted on a handle three inches and nine lines long, and three lines in diameter. Its blade is about twenty lines in length, terminated by a sharp point, cutting at the edges to the extent of about two lines, to penetrate the cornea more readily. It is blunt above, to avoid cutting the upper eyelid, if it should happen to fall by the neglect of the assistant, and slightly curved on its flat side, to avoid the iris while passing through the anterior chamber of the eye. Palucci, an Italian surgeon in the service of the emperor, had already proposed a bistoury of a peculiar shape for this purpose, the resemblance of which to his own instrument La Faye disclaims. A new instrument, the *cystotome*, is designed to supply the curette, and the small lance-shaped needle of Daviel, and to cut the capsule of the crystaline, after raising the flap of the cornea. It resembles the pharyngotome in every respect but its size, and the sheath, which conceals the lancet a little bent on its flat side, about a line in length and seven lines long; the part which conceals the spring is two inches long, and about two lines in diameter. When the spring is touched, the lancet passes only a quarter of a line from the end of the instrument.

After the usual preparations, La Faye takes the bistoury in the usual way, carrying the point on the transparent cornea towards the lesser angle of the eyelids, at the height of the pupil, and half a line from the sclerotica. It passes through the anterior chamber in an horizontal direction, and pierces again the cornea near the great angle; and at the same distance from the sclerotica. He then inclines the cutting edge of the bistoury forward and downward, making it slide from the great to the smaller angle; he divides the cornea in the form of a cross, and of sufficient extent to admit the passage of the crystaline. Sometimes the lens separates; sometimes it is necessary to divide the capsule which covers it. This is done with the cystotome, the sheath of which is carried under the section of the cornea, so that its convexity shall be above. When the extremity of the sheath has reached the pupil, the button is pressed, to propel the lancet, and the capsule is divided: the slightest pressure then on the inferior part of the eye pushes it through the wound.

The operations of La Faye, and his pupil Poyet, do not appear to have been eminently successful; and at the same time Mr. Sharp, in this country, was engaged in simplifying the operation of Daviel. His memoir on this subject was published in the forty-eighth volume of the Philosophical Transactions, and is sufficiently known. He used only a small knife slightly curved, cutting on the concave side. He passed this knife from the less to the greater angle of the eye, and conducting the cutting edge from above downward, made a semicircular of the cornea as near as possible to its union with the sclerotica. He then pressed slightly

the eye with the fore-finger, and forced out the crystaline. In this operation the wound of the cornea is completely filled by the knife, which increases in breadth from the point, so that none of the aqueous humour escapes till the motions by which the cornea is divided commence, and the eye consequently preserves its form. In another memoir he speaks of having succeeded in half the cases which he operated on, though all were followed by a considerable inflammation. The circular shape of the pupil was also destroyed, which he attributes to the delicacy of the iris, which is injured by the passage of the lens through it, or by the back of the knife when penetrating the anterior chamber. He does not consider this as an inconvenience; and appears not anxious to force it out by pressure, but to draw it through the iris by plunging the point of the knife through its substance. The mobility of the eye, he thinks, may be repressed by a speculum, which must be removed after the section of the cornea, lest a large portion of the vitreous humour should be pressed out. Berenger supplied the use of the speculum by blunt crotchets, and divided the cornea with a knife of such dimensions as at once made a wound of the necessary extent. When this was made, he raised the flap of the cornea with forceps, and punctured the cornea with a lance-shaped needle, like that of Daviel. He seems to have succeeded as well as his brethren, and neither the hooks nor the forceps appear to have been injurious. The latest improvement in this operation is the proposal, we believe, of sir James Earl, the extraction of the lens by a pair of small forceps.

Different plans were adopted and rejected for fixing the eye till the time of Wenzel, who waited, like the earlier operators, till the great irritability of the eye had subsided, trusting the upper eyelid to an assistant, and the lower he held himself. His knife was made on the principles of Berenger; but the point was longer, and it had no convexity on the anterior surface, so that it might be employed for either eye, while Berenger's plan requires one for each. After the former preparations he plunges the instrument into the anterior chamber, piercing the cornea at half a line from the sclerotica, at its superior and external part. When he has reached the pupil, he engages the point of the instrument in the lens, making a similar incision in it as in the cornea, representing the segment of a circle whose convexity is turned obliquely outward and downward. He then pierces the cornea a second time from below outward, towards the lower and internal part of the eye, and finishes the section without altering the direction of the instrument. In general, the section of the cornea and lens is completed before the aqueous humour escapes, and before the iris has time to fall in folds. When it does so, a slight friction will induce its contraction and disengage them. The advantages of the oblique section are, avoiding any injury to the great angle of the eye, the caruncle, and the side of the nose. The section of the cornea is also concealed by the upper eyelid, and, should it swell, it will extend below the wound.

The great difficulty of this operation is the section of the lens at the same time with the section of the cornea. If the eye is very moveable, the pupil small, or the lens hard, it must be wounded in a subsequent attempt by a sharp curette or a lance-shaped needle. When the crystaline membrane is opaque, the flap must be raised by forceps, which cannot be so easily done as if cut at once. This case is ascertained by the appearance of spots of different degrees of opacity, which, if deep, show the disease to be in the lens; if superficial, in the membrane.

A variety of circumstances require a difference of conduct, which would detain us too long: they can only be with advantage considered in the original authors. The later improvements chiefly relate to the method of fixing the eye, which, however ingenious, are managed with difficulty. They have not, we believe, been extended to this country; and surgeons now chiefly trust to the mode of securing them recommended by Wenzel.

The dressing is most simple: all pressure should be avoided, and the eye not opened for eight or ten days, at the termination of which period the wound of the cornea is usually closed. Rest, the lightest diet, and an obscure chamber, are equally necessary. For one of the consequences of this operation, see STAPHYLOMA.

See Wenzel Traitè de la Cataracte; Sabatier de Variis Cataractam Extrahendi Methodis; Daviel Dissertatio ergo Cataractæ Tutior Extractio Forcipum ope; Ejusdem Memoires de l'Academie de Chirurgerie, ii. 327; Ejusdem Philosophical Transactions, v. 49; De la Faye Memoires de l'Academie de Chirurgerie, ii. 563; Richter Observationes Chirurgicæ Fasciculus, ii.; Pellier Recueil des Memoires; Morgagni de Sedibus, xiii. 14, lxiii. 11.

CATARACTA VACILLANS, a shaking cataract, a cataract in constant motion from its connection with the iris. This kind of cataract is mentioned by Celsus, and St. Yves; but has been lately neglected. M. Forlenze and M. Chaussier are the only authors on the subject with which we are acquainted. The former describes it in the Brussels Memoirs. He performs the operation nearly in Wenzel's method, and separates the adhesions with a golden needle, mounted like a cataract knife. The method of the latter was not very different. (Nouveaux Memoires de Dijon, 1784, ii. Semestre.) We have since found the vacillating cataract described in Mohrenheim's Surgical Observations, published in Vienna, 1780, 8vo. See Commentaria Lipsiensia, vol. xxiv. and xxvi.

CATARRHUS INTESTINORUM.—Page 373, col. 2, line 58; "*the connection just mentioned.*"—See DIARRHŒA and DYSENTERIA.

CATTU-SCHIRAGRAM.—Page 380, col. 1, line 42; "*kill worms.*"—*Conyza anthelmentica* Lin. Sp. Pl. 1207.

CAUCALIS.—Page 380, col. 1, line 50; "BASTARD PARSLEY."—Probably the *tordylium anthriscus* Lin. Sp. Pl. 346. The echinophora tertia is, however, the *caucalis leptophylla* Lin. Sp. Pl. 347. As sometimes happens, in the former editions of Motherby the synonyms of two different genera are accumulated under one species. The synonyms of every species of a genus are often collected.

CAUDA EQUINA.—Page 380, col. 2, line 17;

"*this is their origin.*"—The cervical fasciculi of nerves run out nearly at right angles from the spinal marrow, and are therefore short; the dorsal fasciculi more obliquely, and these are, of course, longer; the lumbar and sacral fasciculi are much longer. The filaments of the last also are broad, resembling, in this respect, the lowest cervical nerves. The lumbar fasciculi form, in the cavity of the spine, a bundle of nervous fibres, covered by the dura mater, sending out nerves in a very oblique direction through the foramina. At the passage out of the spine the covering from the dura mater is apparently elongated, but soon lost. The pia mater, as usual, accompanies the nervous fibres.

CAUL, the popular appellation of the omentum. The term is also applied to a membranous covering of the infant's head, when born, arising from a close application of the ruptured membranes. The sailor's wife preserves it, as an amulet, to save her husband from shipwreck.

CAULIS.—Page 380, col. 2, line 39; "*The* STALK." The stalks of the ferns, grasses, palms, and mushrooms have distinct and appropriate appellations. The caulis may be *procumbens; scandens*, climbing by the help of tendrils; or *volubilis*, twining without tendrils.

CAUSTICUM ARSENICALE. See CANCER.

CAVIARIUM.—Page 383, col. 1, line 23; "*It is the pickled roe of the sturgeon.*"—All the fibres are taken from the roe, and it is washed in white wine or vinegar, salted and pressed in a fine bag, and put in a cask, which has a hole in the bottom, from which any remaining moisture drops. The manufacture is carried on by the Italians, and much of it is consumed by the Russians, who keep their three lents with great rigour. It is also used in considerable quantities in Italy and France. The best caviare is said to be made from the *accipenser huso* Lin. a fish whose enormous ovaries equal nearly one-third of its whole bulk. The ovaries of one large sturgeon are said to have weighed 800 pounds.

Besides the black eggs of these cartilaginous fish, Guldenstaedt informs us that the yellow eggs of other large fish are employed, as the carp, the pike, the lucioperca, the bream, and the different species of cyprinus: a kind of caviare is made, in the Mediterranean, from the roe of a mullet, and called *botargo*.

The Archangel caviare is, on the whole, an insipid food, and requires various condiments. It is also, in weak stomachs, often inconvenient from its insolubility.

CEANOTHUS.—Page 383, col. 1, line 35; "See CELASTRUS INTERMIS."—There is an error in this reference: for the celastrus has no connection with the ceanothus. The last is the new Jersey tea tree, the *c. Americanus* Lin. Sp. Pl. 284, whose powder is applied to syphilitic ulcers.

CELASTRUS.—Page 384, col. 1, line 62; "*Americanus* Lin. Sp. Pl. 284."—It is the *celastus scandens* Lin. Sp. Pl. 285.

CELERI ITALORUM.—Page 384, col. 2, line 6; "APIUM."—Another kind of celeri is afforded by a species of apium, found by sir J. Banks and Dr. Solander on the coast of Tierra del Fuego. It resembled the garden celeri in colour and the disposition of its flowers, but the leaves are of a deeper green: it was found to be an excellent antiscorbutic, and was boiled in the seamen's soups.

CELLULÆ; *loculi*, little cavities, as the cellulæ adiposæ, which contain the fat. In botany the term implies the cavities into which the seed-vessel is divided.

CELLULOSA MEMBRANA.—Page 385, col. 2, line 12; "*its minutest parts are rendered visible.*"—The importance of this connecting medium of the human body has been greatly exaggerated. It has been supposed irritable, susceptible of spasm, and of inflammation. It indeed possesses a degree of elasticity; but the general facts from which these changes have been supposed to arise are more readily accounted for by a change of state in the vessels themselves. See FIBRA.

CENEANGIA.—Page 385, col. 2, line 47; "*concourse of symptoms.*"—See ANÆMIA.

CENTAURIUM MINUS.—Page 386, col. 1, line 39; "*extract like wormwood.*"—As the petals are insipid, the tops, according to Lewis, are less useful than the herb. It was formerly supposed to be a laxative, and not an inactive one, if two drams of the powder were boiled in eight ounces of water till one half was consumed. On this subject the reports of authors differ, and it seems only to possess the slight laxative power common to all bitters. It was considered in Germany as a safer and more efficacious remedy than the bark in intermittents, when the latter was supposed to leave dangerous effects, in producing enlargements of the liver or spleen. Senac (De Recondita Febrium Natura, 184) has, however, observed considerable increase of heat and fever from its incautious use. In gout, like other bitters, it has been commended, and, as a deobstruent, it has been given in infarctions of the viscera, and dropsy arising from them. In cutaneous branny scales and tinea, a decoction of centaury has been used, it is said, with success. In foul ulcers the herb applied in the form of a cataplasm is also said to have been useful. Wedel de Centaurea Minori, 29.

CENTENIUM OVUM, the *hundredth egg*. When a hen lays no more eggs she produces a small one without a yolk, but perfect in every other respect, probably because the materials of the yolk are exhausted before those of the albumen. In its place is a fibrous substance, which has been styled a serpent, and the egg is supposed to be the joint production of the hen and a reptile of this kind. It is sometimes styled a cock's egg.

CENTRUM.—Page 386, col. 2, line 2; "*the middle point of some parts.*"—Philosophers distinguish the centre of gravity, of motion, oscillation, and of percussion. The first and last only are connected with medicine. The centre of gravity of the human body is, according to Borelli, nearly in the middle of the pelvis, and he supposes that for this purpose the organs of generation

are placed there; a fanciful idea, which a more extensive view of the operations of nature would soon have refuted. The centre of percussion is that point, wherein the force of a stroke, made with any body, is the greatest. Thus the middle of the humerus is sometimes broken through by the effort of a violent blow on another part of the bone.

CENTUMNODIA. *Polygonum aviculare* Lin. Sp. Pl. 519, has no smell, and a very slight subastringent taste. The decoction is nearly insipid, but becomes brownish on the addition of vitriolated iron. It was used as an astringent, but has been long neglected. Scopoli (Flora Carniol, 423) seems to have found it useful in chronic diarrhœas, which we can easily believe when we perceive logwood useful in the same complaint, with sensible qualities almost equally slight.

CEPHALALGIA.—Page 388, col. 1, line 32; "*should be carefully avoided.*"—We have mentioned that headach precedes mania, and it is equally the precursor of amaurosis. It sometimes has been described as epidemic; but this occurs, we believe, almost exclusively in fevers attended with tumours of the parotid glands, on which it seems to depend. It is sometimes periodical, when not confined to one half of the head, and in one instance was observed to alternate with a mucous discharge from the urethra. It sometimes goes off suddenly with a sense of explosion, and the sound of pulsating arteries has occasionally been so considerable as to be heard by those around (Fabricius Hildanus). Mr. Henry, in the Memoirs of the Medical Society, describes a singular case, in which the pain was confined to the lower part of the coronal suture, about an inch above the sphenoidal bone, and relieved by the discharge of a calculous substance, probably through the nasal sinus. At the seat of the pain the suture was dilated; a circumstance which sometimes has occurred in violent pains of the head. The real seat of this calcareous matter was not ascertained: similar cases, however, occur in Horstius (Opera, vol. ii. 240) and Fabricius Hildanus (v. i.).

Among the causes, acrimony, during the reign of the humoral pathology, was commonly accused: black bile and lentor, or, in other words, pituita, was supposed to be equally injurious in this respect. Valisnieri indeed found coagulated lymph at the basis of the brain. Bonetus has recorded a dissection in which, after cephalalgia, air was found in the pia mater; but it is uncertain whether this may have not been separated in the last moments, or after death. Abscesses we have mentioned as producing coma and lethargy rather than cephalalgia; but the instances are so numerous, and the authorities for their producing headach so respectable, that they must be admitted as very frequent ones. In one instance the cerebellum itself is said to have degenerated into a thin purulent ichor. Ossifications in the arteries, in the sinuses, and tumours in different parts of the substance of the brain, have been also frequently detected by dissection, as well as too close an attachment of the membranes to the cerebrum or cerebellum. The cavity of the cranium, either misshapen or contracted, has been often enumerated among the sources of the disease from the time of Hippocrates (Epid. vi. 1) to Morgagni (Epist. lxii. 15); and from this cause headach, from too closely united sutures, proceeds. Caries and exostoses of the bones, and a thickening and ossification of the membranes, have had a similar effect. Hydatids in the ventricles have been found by Bonetus, and an instance of this kind is recorded by Helsham in the Medical Commentaries of Edinburgh. All the narcotic poisons induce headach, and some kinds of smells are equally injurious. Insects in the brain, which, however, are more frequently in the sinuses of the bones, particularly the frontal, are described by many highly respectable authors among the causes, and the pain has been often removed by their evacuation.

Among the remedies we have probably not given the full force to topical evacuations. Bleeding with leeches in the more acute cases, setons in the more chronic, errhines when the determination to the head is not very violent, and masticatories have been employed. Rubefacients, hartshorn, and various stimulants have been applied to the forehead, and sometimes cold applications have been attended with the most salutary effects. (See CEPHALICA.) All the narcotics have been given as remedies, particularly the hemlock, the aconite, the flammula Jovis, and the digitalis, sometimes with success. To these we may add coffee, recommended by Dr. Percival, and the valerian, a favourite medicine with many practitioners.

Medicines of a different class, designed as deobstruents, have been often employed, and if these have any efficacy, they may be expected to be useful in the more chronic kinds of cephalalgia. We allude to mercurials in slight alterative doses, with the decoctions of sarsa, of bardana, or mezereon.

Blair on the Transactions for the Improvement of Medical Knowledge, ii. 192; Henry, Memoirs of the Medical Society, i. 294.

CERASUS NIGRA.—Page 392, col. 2, line 23; "BLACK CHERRY."—A prejudice has prevailed against the use of the black cherry water, from a similarity of taste, and perhaps of quality, to the laurel; but the proportion of this principle, connected apparently with the prussic acid, is too inconsiderable to be most slightly dangerous.

CERATUM SPERMATIS CETI. CERATUM ALBUM Pharmacopœia Londinensis. See CERATUM.

CEREBRUM.—Page 400, col. 2, line 9; "*an assistant in the same office.*"—The brain is sometimes absent, and Dufour, in the Journal de Medecine, has recorded a case where there was neither brain, cerebellum, nor spinal marrow. Under the article NERVUS, q. v., we have shown how the deficiency is supplied. Yet it is supplied imperfectly; and, as Morgagni observes, should the infant be born alive, he soon sinks attenuated, as in hydrocephalus (De Sedibus, xii. 5, 6). Dr. Heysham, in the Medical Commentaries, mentions a child without a brain, who lived six days; Le Clerc, in Blegny's Collection, observed one to live five days; and, in the Berlin Transactions, another lived eleven hours. See Sandifort Anatome Infantis sine Cerebro nati; Haller de Fœtu Humano sine Cerebro edito; Wepfer Historia Apoplexiæ in Præfatione.

The brain is sometimes peculiarly firm, and both Fabricius and Morgagni have observed that this appearance is not peculiar to maniacs; sometimes dry, *it is*

said, from venereal excesses; sometimes dissolved in purulent matter, consumed by a carcinomatous fungus, or gangrene. A hernia of the brain has been found to occur from a carious bone, sometimes from dilated sutures; and there are many instances of its being cured by gentle, but steady, compression. It is sometimes schirrous, and little benefit can then be expected from medicine. See CAPUT and CEPHALALGIA.

CERUMEN AURIS.—Page 401, col. 1, line 60; "*occasions deafness*."—Warm water is its best solvent, and warm sea water, at least, the safest stimulant when the quantity is diminished. It is said occasionally to be sweet (Ephemerides Naturæ Curiosorum, Dec. ii. An. iii. 91), sometimes resembling castor in smell.

CERUSSA.—Page 401, col. 1, line 64; "*unde κερυσσα*."—It is the acetous oxide of lead, in modern language *oxydum plumbi album acetatum.* It has a scaly, foliated texture, is brittle, heavy, beautifully white, and sweet. It is best powdered by rubbing a lump of cerusse on a sieve over white paper. It is chiefly used in plasters and ointments, occasionally sprinkled on the excoriated skins of children, and sometimes suspected to produce, in this way, complaints of the bowels. It should, therefore, be used with caution.

CERVICALES VERTEBRÆ. The uppermost vertebræ of the spine, seven in number, are smaller and more solid than any of the others, and flatted on the fore part, for the passage of the œsophagus, from the pressure of the food, or the action of the longi colli and anterior recti muscles. They are flat behind, except from the protuberances to which the internal ligaments are fixed. The upper surface of the body of each is made hollow by a slanting thin process, raised on each side: the lower surface is hollowed by the rising of the posterior edge, and the production of the anterior. The cartilages, secured by this structure, are thick, especially on their fore part, which occasions the vertebræ to advance forward as they descend, and enlarges their sphere of motion. The oblique processes are peculiarly slanting; the smooth, and almost flat, surfaces of the upper ones facing obliquely backward and upwards, those of the lower forwards and downwards.

In the cervical vertebræ, besides the common transverse processes rising from between the oblique ones on each side, a second comes from the side of the body of each vertebra; and these, after leaving a circular hole for the passage of the cervical artery and vein, unite, and are considerably hollowed at their upper part with rising sides, to protect the nerves that pass in the hollow. Each side, at last, terminates in an obtuse point, for the insertion of the muscles.

The spinal processes stand nearly strait backwards, are shorter than those of the other vertebræ, and double at their ends, for the more convenient insertion of the muscles. All these circumstances add to the extent of their sphere of motion. Though the holes are in common, the largest share is in the lowest.

The first of these, styled the *atlas* or *epistrophea*, from the motion it performs on the second, has little or no spinous process, but a large bony arch, over which the muscles pass. From two depressions on the back and upper part of this arch the recti postici minores rise, and to two sinuosites, at the lower part, the ligaments, which connect the bone to the following one, are fixed. The superior oblique processes of this atlas are large, oblong, hollow, and more horizontal than those of any other vertebræ. The external rises higher than the internal brim, to render the articulations of the os occipitis firmer. Under the external edge of each oblique process is a fossa, in which the vertebral arteries make a circular turn as they are about to pass through the great foramen of the occipital bone, and where the tenth pair of nerves goes out. This fossa is sometimes covered with bone. The inferior oblique processes, extending from within outwards and downwards, are large, concave, and circular, so that this vertebra receives the bones with which it is articulated both above and below.

The transverse processes of this first vertebra are not much hollowed or forked; but longer and larger than in any other, for the more advantageous insertion of the muscles, whose strength is required to be considerable. The cavity for the spinal marrow is also unusually large, as the medulla itself is large; and, from its importance in this part, care is necessary to guard it from injury. The condyles of the os occipitis move backwards and forwards in the superior oblique processes of this vertebra, admitting little circular or lateral motion. In new-born children the lateral pieces only are ossified, and the arch is cartilaginous.

The second cervical vertebra is called *dentata*, from the tooth-like process at the upper part of its body. This vertebra is somewhat pyramidal, produced downward in front, to enter a hollow of the vertebra below, while, from a square process at the upper part, a small point projects. The side of this process, on which the hollow of the anterior arch of the first vertebra plays, is convex, smooth, and covered with a cartilage. It is equally smooth behind; for the ligament which passes transversely from one rough protuberance of the first vertebra to the other is cartilaginous in the middle, and plays on it. A ligament also goes out, in an oblique transverse direction, from each side of the processus dentatus, to be fixed by its other end to the first vertebra, and to the occipital bone: another ligament rises from near the point of the process to the os occipitis.

The superior oblique processes of this vertebra are large, circular, and nearly horizontal, slightly convex, to be adapted to the inferior oblique processes of the first vertebra. The inferior oblique processes do not differ from those of the other vertebræ.

The transverse processes are short, slightly hollowed at their upper part, and not forked at their ends. The canals through which the cervical arteries pass are reflected outwards, about the middle of each process, so that the course of these vessels is directed towards the transverse processes of each vertebra. The arteries are thus defended by bone, that the course of the blood may not be obstructed by the motions of the neck. This structure is not very uncommon in similar circumstances. The spinal processes are thick, strong, and short, for the origin of the musculi recti majores and obliqui inferiores.

The third vertebra of the neck is called *axis;* but this, with the three below, have nothing peculiar in their structure. Each is larger as it descends. The

seventh vertebra of the neck approaches in form those of the back; but the articulating surfaces are less hollow, the oblique processes more perpendicular, without any bifurcations. In this and the sixth vertebra, the hole in the transverse processes is often divided, separating the cervical vein and artery.

These vertebræ are seldom subject to inflammation in the cartilages, which produces caries, as happens in the lumbar. Yet in the latter case we often find spasms in the upper extremities, as if a similar affection had taken place, or the irritation was communicated through the medulla. We have seen the inflammation and the irregularity of the cervical vertebræ in one instance only.

The vertebræ of the neck are sometimes luxated by blows: if partially only, and soon restored, no inconvenience follows; but if more general, the importance of the nerves and vessels, subject by such accidents to injury and compression, render the case soon desperate; indeed so close is their mutual connection, that they can scarcely be luxated in a considerable degree without fracture. Bonetus records a case where the vertebræ were indurated and immoveable, apparently from cretaceous depositions.

CETACEA, (from *cete, a whale*). Cetaceous animals, though strictly fish, yet in many respects resemble land animals, at least the amphibia; in some important ones, even the mammalia. They require a supply of fresh air, at no very distant period; they breathe by means of lungs, utter sounds, and suckle their offspring. Yet, as they have all the appearances and manners of fish, they ought perhaps to have formed a separate family of these animals.

CEVADILLA.—Page 403, col. 2, line 28; "*the size of linseed.*"—The plant has never been seen in a state of perfection; but, in the appearance of its siliquæ mixed by accident with the seeds, it resembles the aconite, or delphinium; from other parts, particularly portions of the flower preserved equally by accident, it seems to come nearer the veratrum (Retzii Observationes Botanicæ, i. 29). The whole fruit is tricapsular, the capsules ovated, long, and compressed, about half an inch in length and straw-coloured. In each capsule there are two seeds of a deep brown colour, somewhat wrinkled; they are oblong, obtuse at one extremity, sharp at the other, on one side plane, on the other convex, compact, with a sharp margin, and white within. Parsley seed powdered, white pepper, and hellebore are fraudulently mixed with these seeds. The taste of the capsule is bitter only, and not acrid. The seeds themselves are very pungent, disagreeably bitter, affecting the top of the tongue with a sweetish nauseous taste, with the pungency of needles piercing through it, and producing a severe continued salivation. The powder of the seeds is a violent errhine. The decoction is highly acrid and caustic; the tincture equally so, but with a strong aromatic smell. The watery extract amounts to one-eighth of the seed; the spirituous to one-fourth. The seeds, when powdered, soon lose their virtue.

The cevadilla is fatal to almost every animal and insect. Independent of its destroying lice, bugs, &c. it is said to be useful in cleaning foul ulcers, and exciting the action of the vessels in gangrene. When applied, however, to crusta lactea, it has produced violent and fatal effects, so that Rosenstein, who recommended it in his two first editions on the Diseases of Children, has omitted to mention it in the third.

The seed has been given internally as an anthelmintic. Worms out of the body are soon killed by it, and more than one tænia is said to have been completely discharged by its use, continued fourteen days, interposing a drastic every fifth day. Ascarides are also carried off by its means. Two drams of the seeds are boiled in ten ounces of water to seven of the strained fluid, mixed with equal quantity of milk, and thrown up as a clyster. With this the powder should be given internally. In cases of lumbrici Schmucker gives half a dram of the powder every morning; but it should be recollected, that he directs the siliqua and the seeds to be powdered together. This produces generally vomiting, and some worms are discharged, if in the stomach. The dose is repeated the second day, and on the third and fourth taken at twice. On the fifth day a laxative of rhubarb is given; and on the sixth five grains of the seed, three times, in a bolus. In this manner he proceeds, interposing the laxative every fifth day, till the complaints of the bowels are removed, and no more wormy mucus is discharged. Children, from two to four years, take two grains of the cevadilla for a dose. It seems, from some incidental remarks, to be an useful medicine in epilepsies and convulsions of a severer kind; but it must be recollected that these often depend on worms.

As the ancient hellebore was nearly allied to the veratrum, the cevadilla has been used, like it, in mania, &c.; but we know not with what success. We observe, in one of Seeliger's cases, published by Schmucker, that with a tænia, discharged by the cevadilla seeds, a melancholia was also relieved. In killing bugs, every crevice of the furniture must be sprinkled with the powder, or washed by vinegar, in a pint of which two ounces of the seeds have been digested for two days.

CHÆRIFOLIUM.—Page 403, col. 2, line 52; "*essential oil.*"—It is used in soups, since its acrimony as a condiment is not unpleasant, and its smell is not unlike that of fennel. The plant contains a salt, supposed to be nitre; but it does not deflagrate, and has been given as a diuretic and deobstruent. In phthisis it has also been celebrated, though Geoffroy informs us that it is injurious to those subject to hæmoptoe. It is applied in indurations of the mammæ, to boils, varices of the spermatic vessels, and scrofulous tumours (Plenck Materia Medica Chirurgica). Internally it is given in herpes, while a dilute saturnine solution is employed externally. Riverius recommends two ounces of the juice to be taken with white wine, for many days, to promote a flow of urine in dropsies. Geoffroy thinks the effects more certain if nitre be combined.

Murray recommends it, from his own experience, for repelling milk, and dissipating the nodes which its coagulation may have excited, particularly if united with the leaves of the alnus. For this purpose the leaves are chopped, warmed, reduced to a poultice, and applied to the breast, several times a day. Langius prefers adding the leaves of hemlock. A liniment,

composed of its juice and olive oil, relieves the pain of hæmorrhoids, as well as the vapours of a decoction of the plant, or the latter used as a fomentation. A cataplasm of the herb is commended in ischuria.

The scandix odorata Linnæi is nearly similar in its virtues, and is used by asthmatic persons, smoked like tobacco.

CHAJOTLI, or CHAYOTI. A Mexican fruit, covered with a husk similar to that of the chestnut, but much larger, and of a deeper green. The kernel is of a greenish white, and has a large white stone in the middle, resembling it in substance, and eaten with it when boiled. The root of the plant, which is unknown, is also esculent.

CHAMÆDRYS.—Page 404, col. 2, line 38; "*and other chronic complaints.*"—Of these the principal are coughs and asthma. In hypochondriasis Sennertus considers it as highly useful; and Ray informs us that it is a secret female remedy in suppressions of the catamenia.

CHAMÆMELUM NOBILE.—Page 405, col. 1, line 65; "*carminative portion.*"—Though the camomile flowers, when their powers are extracted by warm water, prove emetic, in the cold infusion they are grateful to the stomach, and in this form they appease its irritability. From 480 parts Neumann obtained 180 of alcoholic extract, and 120 of watery; inversely 240 and 60. They are an ingredient in clysters, chiefly from the carminative power of their oil.

CHAMÆMELUM VULGARE.—Page 406, col. 1, line 24; "*changes it to a yellow.*"—Of these flowers the calyx is the most efficacious portion; for in this the essential oil resides. The smell of the flowers is fragrant, and not very agreeable; the taste bitter, and the medical virtue inferior to that of the anthemis nobilis. To this plant, however, the praises of foreign authors must be referred, particularly when they speak of its febrifuge virtues, and the only sceptic whom we can discover on the subject is Senac (De Recondita Febrium Natura, 188); but this very excellent physician had not the same prejudices against the Peruvian bark, which the German authors seem to have felt. In nephritic as well as spasmodic colic it seems to have been peculiarly useful, as well as in relieving cardialgia.

CHAMÆMORUS.—Page 406, col. 2, line 8; "*common use.*"—The fruit is used also as a cooling febrifuge in hæmoptysis and hectics (Linnæi Flora Laponica, 167). The berries, which sometimes equal in size the largest cherries, with acini scarcely less than peas, are preserved by the Laplanders in snow, and sent to Stockholm in casks, to be employed in different dishes as condiments and antiscorbutics. They are seldom ripe, when gathered, and imperfectly matured by the means of preserving them.

CHAMŒPITYS MAS.—Page 406, col. 2, line 44; "See CHAMÆDRYS."—The watery extract is austerely bitter; the spirituous sweetish and warm. It has been always highly commended in diseases of the joints; but we find, from the observations of Gesner, in Haller's Epistles, that it was found, after being for some time employed by arthritics, to produce asthma, slow fever, and apoplexy. It is esteemed as a discutient and aperient; but there is some danger of lessening its virtue by boiling. It was formerly in high reputation for cleaning and healing wounds.

Page 406, col. 2, line 57; for "CHAMÆRIPHES" read CHAMÆROPS.

CHANCRE.—Page 407, col. 1, line 32; "*more difficult to cure than in other parts of the penis.*"—The inflammation, when chancre affects the frenum, is more considerable, and an ulceration appears, forming a little cavity, a circumstance which has induced authors to recommend its division at first, but without reason; for this cavity by stimulating mercurials sloughs, and soon after fills. When a chancre affects the cutis above the glans it soon forms a scab. If the inflammation is considerable, and spreads rapidly, the constitution is irritable, and stimulants should be avoided. Violent pain shows the same state of body, and emollients will be the proper applications. When on the glans, with a considerable loss of substance, hæmorrhages are often violent and obstinate.

When the chancre becomes indolent, the balsam Peruvianum, calomel with turpentine, or the red precipitate, in such proportions as will stimulate without proving escharotic, may be employed. Some surgeons employ the blue vitriol, verdigris, calomel with ether, &c.; but, in general, the red precipitate, proportioned to the irritability of the sore, is preferable. When these stimulants act too violently, some saturnine applications are often combined.

CHELIDONIUM MAJUS.—Page 408, col. 2, line 37; "*dissipates its smell.*"—Yet the extract has been usually preferred in jaundice and obstructions of the mesentery; but it is directed to be made from an infusion of white wine, by a very gentle heat. This extract, dissolved in vinegar of squills, has been also recommended in infarctions of the lungs from pituita, probably to promote expectoration in those cases of asthma where the action of the vessels is languid. In intermittents it has been highly commended; and in dropsies, from the abuse of spirits, the common people of Warsaw infuse the leaves and roots in beer, which is said to produce a copious flow of urine. (Endtell Varsovia Illustrata, 190). In infusion it is recommended in the Berlin Transactions to calculous and gouty patients.

CHELIDONIUM MINUS.—Page 409, col. 1, line 1; "*tettery eruptions.*"—The roots are acrid with a styptic taste, at first acid, then bitterish and nauseous. When bruised they raise blisters on the skin, though not so violently as those of the ranunculus bulbosus. It affords a safer sternutatory than the other ranunculi, and either in powder, or boiled in axunge, is said to be useful in scrophulous tumours. In hæmorrhoids it is a doubtful remedy.

CHEMOSIS. See CHYMOSIS.

CHENOPODIUM.—Page 421, col. 2, line 51; "*little medical power.*"—It often happens that plants

of the least real virtues are decorated with the most numerous imaginary ones, nor is it possible wholly to pass over what authors of some reputation have said. The leaves of the *bonus henricus* have been applied to wounds, ulcers, and various chronic exanthemata. In tinea and leprosy they are said to have brought on a most salutary discharge (Vogel's Practice of Medicine, 63, 64; Murray Opuscula, ii. 3 2). The leaves must be changed two or three times a day. The fresh leaves are said to discharge a considerable quantity of water from œdematous limbs (Lin. Flor. Suecica, 78). In blind piles, bruised and formed into a liniment, with unsalted butter, they greatly relieve pain (Vogel and Linnæus). A cataplasm from the whole plant is said to relieve gout. The buds are sometimes eaten like asparagus.

The *chenopodium botrys* is viscid to the touch, with a balsamic, somewhat unpleasant, smell; an aromatic and bitter taste. Its distilled water is milky, and retains both the taste and smell of the plant. Its distilled oil is in a very small proportion, and is either fluid, yellow, aromatic, and bitter to the taste, with the fragrant smell of the plant: or coagulates like wax, and is easily dissolved in spirit of wine. The watery infusion preserves the bitterness; but the smell is impaired. The spirituous tincture is more slightly bitter, with an acrid taste. From an ounce of the herb somewhat more than two drams of a watery extract were obtained, of a bitter salt taste, and a large quantity of saline crystals effloresce from its surface. The spirituous extract is in a smaller proportion, as the ounce contains only one dram and a scruple, though more bitter and acrid than the aqueous. The salt is apparently nitre, and the whole plant decrepitates in the fire. Its sensible qualities seem to show some activity; but, except in a list of diseases, as usual in herbals, there are few observations which prove that it has been really employed; and the names of the complaints in which it has been useful have been repeated, with little variation, from the time of Mathiolus. It is recommended in diseases of the breast by Forestus, and Mathiolus himself seems to speak, with some precision, of its use in purulent expectoration. The Venetian women, it is said, use it both externally and internally in hysteria.

The *chenopodium ambrosoides* has similar qualities, though in a more considerable degree. It has been styled the Mexican tea, and was formerly used instead of the Chinese in Germany, Sweden, Bavaria, Silesia, and lower Hungary. A saturated decoction has been commended in palsy: this plant contains also nitre.

The seeds of the *chenopodium anthelminticum* are shining, small, brown, roundish, somewhat compressed, and of a faint smell. They are used in America against worms, given in an electuary with honey (Chalmers on the Diseases of South Carolina, 71). The dose is not mentioned.

CHILIADYNAMIS, (from χιλιας, *a thousand*, and δυναμις, *power*), an epithet of the POLEMION, from its numerous virtues. Dioscorides.

CHINA ORIENTALIS.—Page 423, col. 1, line 21; "*gives place to sarsaparilla.*"—It did not prove more serviceable to the emperor Charles V. in rheumatism; and in dropsy, melancholy, infarctions of the spleen, &c. though recommended by Fallopius and Amatus Lusitanus, it has not been found more successful. The advice of Rosenstein to give the decoction for fourteen days after inoculation, that the pustules may be large and full, is more reasonable; but the medicine is unnecessary. It seems to be a pure demulcent only.

CHLOROSIS.—Page 428, col. 2, line 62; "*intermitting headachs and fainting.*"—In general, when the regular changes which the state of the constitution successively produces do not take place, whatever may be the cause, the effect is languor, a weaker action of the vessels, and debility in the conduct of every function. The pulse is weak and quick, the veins almost indistinct, the energy of the mind lost, the mental functions often irregular, the nervous system frequently irritable. Chlorosis is often the effect of the catamenia not coming on, or their suppression after they have appeared. The more remote causes are most commonly indistinct; but generally debility of the constitution naturally existing, or induced by anxiety, pain of mind, or disappointment. Debility may be induced also by bodily complaints, and long fevers are frequent causes. The disease, however, often occurs with little apparent reason, and that power which is destined to expand the vessels appears incapable of performing its office. The chief remedies are the stimulating tonics, either those which act on the system in general, or the neighbouring vessels. Of the former kind are the bark, aromatics, and steel; of the latter aloetic purgatives, and a matrimonial union. Fourcroy recommends breathing oxygenous gas (Annales de Chimie, iv.), and Hufeland, in his Annals, repeats, if he does not confirm, the recommendation.

Dr. Cullen has preserved a chlorosis amatoria as a species; but love seldom produces the disease, if its "course run smooth."

CHOLEDOCHUS DUCTUS.—Page 329, col. 1, line 50; "*to hinder the bile from regurgitating.*"—It has usually the epithet of *communis*, as it seems to convey both the cystic and hepatic bile into the intestines. The cystic and hepatic ducts, after the curvature of the neck of the vesicula, run very near each other, and the raising the liver appears to separate them.

The ductus choledochus seems rather to be a continuation of the ductus cysticus than the common trunk of that and the ductus hepaticus; for the latter runs a little way within the sides of the former before it opens into its cavity.

CHOLERA MORBUS.—Page 420, col. 2, line 47; "*violent passions.*"—Two very common causes of cholera are omitted, viz. drinking cold liquors when warm; and whatever lies cold on the stomach, as lettuce, melon, or peaches: cucumbers often induce it. Suppressed evacuations are sometimes causes, and even drying up an issue has been enumerated among its sources. Terror has sometimes occasioned it; but mushrooms more probably act by their deleterious powers. Blisters applied to the pit of the stomach are sometimes useful.

Add to the references Henrici de Cholera; Tralles

de Cholera, &c. quam Sustinuit ipse; Stahl de Cholera Morbo; Stoll Ratio Medendi, iii. 64; Lind on the Diseases of warm Climates.

CHORDÆ TENDINEÆ, tendinous strings, arising from the carnæ columnæ of the heart, and passing to the edge of the valves in the ventricles.

CHORDÆ WILLISII; small fibres, which cross the sinuses of the dura mater, discovered by Willis.

CHOROIDES PLEXUS.—Page 434, col. 1, line 14; "*lateral ventricles of the brain.*"—It consists of a great number of arteries and veins very minutely ramified, partly collected in two loose bundles, which lie on each lateral ventricle, and partly covering the thalami nervorum opticorum, the pineal gland, and other neighbouring parts. In each lateral portion of its plexus there is a venous trunk, whose ramifications are spread through the whole extent of the two portions. These trunks approach each other near the pineal gland, and, uniting behind it, empty their contents into the torcular Herophili. Sometimes these two trunks unite and pass into the sinus as a single one. Its loose portions contain many tubercles like glands, which enlarge by disease. They are best seen in a microscope when the plexus is expanded in water.

The sides of the fornix, of the eminences, ventricles, canals, and infundibulum, are covered by a fine membrane, containing numerous minute vessels, a continuation of the plexus, which is apparently derived from the pia mater. A very fine membrane is sometimes observable between the septum, whose sides, in other subjects, appear to be contiguous.

CHRYSOMS, (from χρεισμα, *unctio*) an anointed cloth formerly laid on the face of a child until it was baptised. On this account children under a month are, in our bills of mortality, styled *chrysoms*.

CHYLUS.—Page 435, col. 2, line 14; "*presence of chyle in it.*"—See DIGESTIO.

CHYMUS.—Page 436, col. 1, line 23; "*object of our taste.*"—(See DIGESTIO.) *Chyme* sometimes meant a grosser chyle rejected by the lacteals, and taken up by the meseraics to be farther elaborated in the liver, an operation styled *chymosis*.

CHYNLYN, a cylindrical root of the thickness of a goose quill, brought from China, in pieces about an inch long. The taste is bitterish; it imparts a yellow colour to the saliva; and the Chinese consider it as a stomachic. They use it in powder and tincture. Bergius, to whom it was brought by a Swedish East Indian captain, confirms its efficacy; but adds, that it occasionally proved emetic.

CICHOREUM.—Page 436, col. 2, line 36; "*much more so than the flowers.*"—It belongs to the compound semiflosculous flowers, which are usually milky, and, except in the lactuca virosa and scariola, free from any injurious acrimony. The milky fluids suggested to Boerhaave the idea of soap, and all these plants have consequently been considered as aperients, resolvents, and anodynes, employed in jaundice, cachexy, hypochondriasis, melancholy, and hectic. A decoction of the root has been used, it is said, with advantage, when joined with goats milk, in phthisis; and a strong decoction in whey, to which sal polycrest is added, frequently relieves, according to Van Swieten, jaundice from calculus. An old ulcer on the tibia is supposed to have been cured by the juice of this plant. The root is added to the decoction in acute fevers, and it is an ingredient in Lower's decoctum avenaceum.

CICUTA MAJOR FŒTIDA.—Page 437, col. 1, line 11; "SPOTTED HEMLOCK."—It is necessary to guard against an error which the innovations of some later naturalists have occasioned by a change of name, which, though proper, was inexpedient. They have changed the appellation of the cicuta of the ancients from conium to cicuta, and the cicutaria is included under the same genus. There is great danger of confounding the officinal plant with the *chærophyllum bulbosum* Lin. Sp. Pl. 370, which, when more advanced, is furnished in the spring with a bulbous root: the stalk is spotted; but, at the divarication of the branches, and at the footstalk of the leaves, there is a little swelling. The leaves are somewhat rough, clean, at the apex of the pinnæ and lacineæ cartilaginous; the seeds subulated and smooth.

The description of the Κωνειον of the ancients is referred by Haller to the *cicuta virosa* of Linnæus; but among the Greeks it is apparently the appellation not only of one but of every poisonous plant (Plinii Historia Naturalis, xiv. 5; xxv. 13), and of every plant whose stalk is fistulous, between joints (Virgilii Ecloga, ii. 36). It is improbable that our hemlock should be that which the Greeks employed to induce an easy death, since its fatal effects are preceded by vertigo, anxiety, vomiting, madness, &c. Hemlock, at least the plant known to us by that name, is certainly poisonous: its nauseous smell; the bitter acrid milk of its root, from which the tongue is rendered stiff, swollen, and painful; and its botanical analogy, render its nature scarcely doubtful. Storck indeed contends that it will not injure a pregnant woman, or an infant at the breast, and that it may be long continued without danger. The two first assertions may be admitted; but the fatal experience of many practitioners has disproved the last. This author also opposes his own experience to the assertion or the practice of Aretæus, who remarked that it checked the venereal ardour. By chemical analysis it is found to contain a watery saline extract; by distillation, an ammoniacal spirit, an empyreumatic oil, and a volatile salt.

Some authors recommend gathering the leaves before the flowers, or even the flower-stalks, appear, though Fothergill advises them to be gathered when the rudiments of the seeds are conspicuous (Medical Observations and Inquiries, iii. 415). The extract must be made with the greatest care, lest it should be burnt, and it is most advisable to inspissate it only so far that a given proportion of the powdered leaves may make it into a mass. Morris (Philosophical Transactions, liv. 172) contends that the Coimbra extract is superior to any other; an assertion not supported by ex-

perience. In general, the decoction should not be strained. Storck seems to have discovered its inefficacy in some degree, since, in his later works, he recommends various additions.

We have mentioned, in the article, the principal diseases in which it has been employed. It were almost an endless task to enumerate those in which it has been recommended. In gout, spina ventosa, creeping ulcers, resembling elephantiasis, fluor albus, a hard tumour in the left hypochondrium, jaundice, attended with violent fever and anasarca, rickets, amaurosis, lymphatic tumours of the joints, a serous, yellowish tumour of the whole body, syphilitic caries, tinea, hooping-cough from repelled itch, serpigo and fissures of the skin, which extended to the flesh, vomiting, chronic cough, apthæ, slow fever, rheumatism, ischuria, calculus, epilepsy, &c. All these effects it is said to produce without any sensible change, except an increased flow of urine.

Many of the most respectable physicians in Vienna support, by their testimony and experience, these facts, and it affords a lamentable proof of the facility with which we believe what we wish. Physicians of other countries certainly found it sometimes useful, and their commendations, brought into one view, appear to prove that it was generally beneficial. Experience, however, has confined it to the diseases mentioned in the article; and De Haen, even in the cradle of its fame, gave his testimony, adding that of Tralles at Breslaw, against its efficacy (Epistola de Cicuta). In England its opponents have been numerous, respectable, and decided; and, when it was contended that the plant and the extract were not the same as those at Vienna, the medicine was procured from thence, with no better success.

In venereal cases it has certainly been sometimes useful in lessening irritability, and has consequently been advantageous in repressing discharges of semen. It occasionally diminishes tumours of the prostate gland, and amends the appearance, frequently the discharge, of venereal ulcers. As a narcotic, diminishing irritability, and its extensive effects, hemlock may probably still be useful.

See Ehrhart Dissertatio de Cicuta; Halleri Historia Stirpium Helveticarum, N° 766, note *α*.; Quarin Tentamen de Cicuta; Colin Annus Medicus, iii.

Cicuta aquatica.—Page 438, col. 1, line 38; "*and flowers in July.*"—Either this plant, or a compound, seems to have been the instrument of punishment in ancient Greece, and to have been, with the juice of poppies, an ingredient in the medicine of Thrasyas of Mantinea, which killed without pain. Trew, (Commentaria Norimbergica, An. 1740, 388) endeavours to show that it is the κωνειον of Dioscorides.

The roots in spring and summer are almost globular, in the water elongated, annulated, divided by parallel cells, sending out numerous thick fibres. Its yellow juice is contained in little cells in the bark. The poison of the root is most deleterious in the spring, and the radical leaves are almost equally dangerous. The smell of the root is faint; its taste warm and somewhat acrid; and the stagnant lake in which it grows is often covered with a shining oil swimming on its surface. By distillation with water a volatile narcotic spirit of a most noisome smell comes over, and the remainder is inodorous.

Dr. Houlston of Liverpool has also described the effects of this poison in some children in Liverpool (Edinburgh Medical Commentaries). On the dissection of those who have died by eating it the stomach and intestines were found eroded, inflamed, and gangrened. The abdomen was tumid, and the vessels of the brain distended. Wepfer.

What Linnæus and, after him, Vogel have said of the use of this plant must be applied to the conium, and the former has directed the emplastrum è cicuta to be made with it; in which he is followed by the Danish college. When dried the roots are less acrid, and the Fins give them, mixed with salt, to their diseased cattle. Externally it is often used. In the Varen, q. v., a kind of lumbago, endemic in Westphalia, it is applied roasted in the ashes; and mixed with honey, when it terminates in suppuration. It is a popular remedy in Norway, Siberia and Kamtschatka, used externally in pains; but it is forbidden to touch the spine with it, or the most fatal consequences, it is said, will follow.

Cicuta minor, *æthusa cynapium* Lin. Sp. Pl. 367. It is chiefly noticed in this place to remark, that, from its resemblance to parsley, it is often taken for it; but if the curl-leaved parsley were only cultivated in our gardens no such mistake could happen. All the leaves are alike; the stem is branched, the leaves smooth and glossy, the petals whitish, the seeds very large and striated.

Cilia.—Page 438, col. 2, line 9; "*sometimes called cilia.*"—The hairs belonging to the inferior palpebra are bent upward; those of the superior downward: the former are the longest. These rows are irregularly double or triple; the hairs longest towards the middle, and wholly wanting at some little distance from the inner angle.

Ciliares glandulæ. Along the border of the palpebræ, on the inner side, we can perceive a row of small holes, styled the *puncta ciliaria*, the orifices of small, oblong, whitish glands, which lie beneath. In a microscope they appear like bunches of grapes; those of each bunch communicating with each other. The contents of these glands are a soft matter like wax, which may be pressed through the puncta. They are more numerous in the upper than the under lid, and were first observed by Casserius; but described by Meibomius, from whom they are often called.

Ciliaris processus, see Ciliare ligamentum.

Cilium, the eyelid, sometimes applied only to a hair of the eyelid.

Cinconin, the name given by the younger Dr. Duncan to the principle, which in the bark forms the precipitate with tanin. It is soluble in alcohol, and differs in its properties from any vegetable substance formerly known.

See Cortex peruvianus, and the additions to the article in the *Appendix*.

CINCINNUS, the hair which grows on the temples.

CINERITIOUS, (from *cinis, ashes*), the darker coloured part of the brain, and the darker portions of some ganglia and nerves. See NERVUS.

CINGULUM MERCURIALE.—Page 439, col. 2, line 42; "*belt of flannel.*"—It is used to cure itch and other cutaneous eruptions; but it repels the pustules or papulæ without curing the disorder, and has been in many instances dangerous; in some, within our own observation, ultimately fatal.

CINNAMOMUM. — Page 430, col. 2, line 4; "*and of a fibrous texture.*"—The bark of an inferior kind is hard, thick, of a dead brown colour, pungent, with an acrimony resembling that of cloves, followed by a bitter, austere, viscid taste. The Dutch contend that no good cinnamon is brought from any other part of India except Ceylon; but many of the neighbouring islands now produce it in perfection, and the cultivation is in a promising state even in the West Indies. The inferiority already observed, though the trees have not attained their proper age, is in part owing to the management. It is still uncertain whether our cinnamon is the bark distinguished by this name in ancient authors; but the controversy is not peculiarly interesting (See Raii Historia, ii. 1559; Valentini Dissertatio de Cinnamomo, &c. in his Historia Simplicium, 597; Watson in the Philosophical Transactions, xlvii. 301). The oil is in a small proportion, and the largest quantity from imported cinnamon seems to have been obtained by Cartheuser, viz. two drams from a pound.

The spirituous tincture is of a darkish colour, smelling like cinnamon, of a sweet, aromatic, subastringent taste: the inspissated extract is about three-sixteenths of the weight, according to Catheuser, or one-eighth according to Neumann. The watery infusion is of a brownish red, and sweetish, with the other marks just mentioned. By inspissation, in which much of its odour is lost, a slightly astringent extract, about one-eighth or one-tenth, is procured. The remainder is wholly insipid.

It is not certain that the oil of camphor is really produced from the root of the laurus cinnamomum. Its smell is that of sassafras, and it is probable that the camphor proceeds from a variety of the tree called *capuru-carundu*, camphorated cinnamon; for it is seemingly distinguished by the appellation of *oleum camphuræ*. It is said to be analeptic and carminative; useful in gout, in a dose of ten or twelve drops on sugar.

See White in the Philosophical Transactions, l. 860; Gentil Voyage dans les Mers de l'Inde, ii. 70; Dossie's Memoirs of Agriculture, iii. 198, &c.; Grimm apud Bartholin Acta Medica Hafniens, iii. 167, and v. 223; Thunberg's Travels; and the Swedish Transactions.

CIRCULATIO.—Page 442, col. 2, line 33; "*those vessels are then less convoluted.*"—There is some doubt whether the coronaries are filled with blood by the contraction of the heart or the aorta. The right goes off between the aorta and pulmonary artery, the left between the left auricle and the aorta. They communicate by anastomosis round the septum and tip of the heart; but do not make a complete circle around it. That they receive their blood from the aorta is attempted to be proved by the retrograde angle at which they go off, the paleness of the contracted heart, and from the valves of the aorta covering their mouths. These arguments are replied to by observations which show that retrograde angles only retard, and do not stop, circulation; and it is added, that the action of the coronary artery is synchronous with that of the heart. On the whole, we think that they do not form an objection to the general rule.

CIRRHUS.—Page 444, col. 2, line 62; "*serving also for roots.*"—Tendrils are sometimes placed opposite to the leaves, as in the vine; at the side of the footstalk, as in the passion flower; or on the leaves of the flower, as in the winged pea; and are composed of one or of many fibres. Dr. Grew considers them as a mean between a root and a trunk; but a compound of both. The claspers sustain only the younger branches; but the larger, as in the vine, require the care of the gardener.

CITRIC ACID, the native acid of the citrus medica. (See LIMONIUM.) It is of the specific gravity of 1.034, composed of much water, vegetable mucilage, of extractive matter, which seems to contain a slight astringency, of a small proportion of the malic, and a much larger of its own appropriate acid. The proportion of these ingredients varies; but, on an average, 576 grains of fresh juice lose, by evaporation, 528 grains of water, and about 30 grains of the remainder is the citric acid: the rest is the mucilage and extractive, which occasion its fermentation and moulding (Proust, Journal de Physique, lii). The mucilage may be separated by the common means of clarification; but the extractive adheres obstinately to the acid. It in general subsides, and the acid is obtained tolerably pure, or it is covered with oil, to prevent the access of air, and permitted to subside in a cold cellar. In every method, however, the spontaneous changes of the extractive give the juice soon a disagreeable flavour. By freezing, in a temperature of from 23° to 20°, it may be concentrated to about one-eighth of its former bulk, and in this operation the ice, formed of the watery part, must be successively removed till it grows sour. The state of the acid is then tolerably permanent, but still subject to some change. It is sometimes preserved by brandy, and the juice occasionally clarified by the addition of a portion of alcohol, which precipitates the mucilage; but the former method renders it less fit for some purposes, and the latter is expensive, while the object is imperfectly obtained. It cannot be purified by distillation; because it is less volatile than water, and will not rise till the heat is sufficient to decompose it. By moderate evaporation it forms a rob, intensely sour, but of no pleasant flavour from the remaining extractive. The process of Scheele has already been detailed in this work. (See ACETOSELLA.) In this process M. Disè proposes using cold water, which is sufficient, with agitation, to wash out all the acid; but some calcareous sulphat still remains from the excess of sulphuric acid

employed, and it is united with some of the citric acid. If the remaining fluid is evaporated at the temperature of boiling water, the earthy salt falls down; but as the sulphuric acid becomes concentrated, from a clear yellow colour it turns blackish, though this more probably arises from the extractive. The acid is so very soluble that the solution must be brought to the consistence of a thick syrup before it will crystalise, and the crystals, at first dark and dirty, require two or three solutions and recrystalisations before this colour is destroyed. The excess of sulphuric acid is apparently necessary to destroy the extractive. The clear liquor, after adding the chalk, contains malat of lime, and the astringency seems to arise from a portion of gallic acid.

Richter saturates the lemon juice by carbonat of potash, and then adds acetated lead. A copious white precipitate consists of citrated lead. The metal is separated by dilute sulphuric acid. The citric acid is thus accidentally, but more often fraudulently, adulterated with sulphuric acid. The latter is detected by adding to the suspected juice some acetite of lead, and then a few drops of strong nitric acid. If there is no sulphuric acid, the precipitate formed in the first instance is soon redissolved; but, if adulterated, the sulphat of lead will remain at the bottom; for it is not soluble in nitric acid.

The pure acid crystalises, according to Lowitz, in alum-shaped crystals, consisting of two four-sided pyramids, joined by their bases; or, according to Dizé, in rhomboidal prisms, not deliquescing. Its taste is intensely sour; but, when diluted, agreeable to the palate. One ounce of distilled water will dissolve more than an ounce of the crystalised acid, producing 30° of cold by the mixture. In a boiling heat water dissolves twice its weight of the acid. Distilled alone, an empyreumatic acid, phlegm, carbonated hydrogen gas, and carbonic acid come over; so that it seems composed of carbon and hydrogen, with oxygen in unknown proportions.

If boiled with nitric acid, nitrous gas is separated, and oxalic acid formed: with a larger proportion the whole becomes acetous acid without passing through the state of oxalic. Vauquelin contends that this acid may be produced by passing oxymuriatic gas through water, containing gum arabic, for some time. Annales de Chimie, vi.

The only preparations from this acid used in medicine are the *citrat of potash* and *ammonia*. The first was introduced by Riverius, and is called the *common saline draught*. From twelve to sixteen parts of lemon juice will saturate one of common, carbonated potash. According to Vauquelin, thirty-six parts of the crystalised acid, dissolved in water, require sixty-one of crystalised carbonat of potash. This salt crystalises, though with difficulty, and is very deliquescent. It is decomposed by barytes and lime.

The citrat of ammonia is used where the stomach is delicate, instead of Mindererus' neutral, the aqua ammoniæ acetatæ. Thirty-six parts of the acid saturate forty four of the carbonat of ammonia, and the salt is with great difficulty crystalised.

Citrullus.—Page 446, col. 1, line 10; "*employed in this kingdom.*"—In Egypt, and other warm countries, the fruit is eaten in fevers, as its taste is agreeably sweet and cooling; but it is often injurious in producing diarrhœa and cholera, particularly if the body is previously heated. The Chinese avoid it in putrid fevers, and Rumphius adds, that it corrects the inconveniences which arise from taking opium.

Claviculæ.—Page 448, col. 1, line 4; "*by the articulation called arthrodia.*"—Each clavicle is larger at either end than in the middle: that next the sternum is triangular, and to the posterior angle, which projects, the transverse ligament which unites one clavicle to the other is fixed. The opposite side is roundish, and the middle of this protuberant end is as irregularly hollowed as the cavity for receiving it, in the sternum, is raised. The irregularities at each end are supplied by a moveable cartilage, resembling in its strength the intervertebral.

From the internal end the clavicle, for more than half its length, is bent obliquely forward and downward. A small ridge, with a plain rough surface before it, is observable in the upper and fore part of the curvature, whence the sterno-hyoideus and sterno-mastoideus in part arise. Near the lower angle, the first rib and this bone are contiguous, and connected by a strong ligament; and from this part a rough, plain surface, extending outward, marks the insertion of the pectoral muscle, while it is flattened behind from the insertion of the larger share of the subclavian. Where it is bent backward it is round, and soon afterwards broad and thin. A rough sinuosity runs along the external concavity, from which a part of the deltoid arises, and on the opposite convex ridge a portion of the cucullaris is inserted. The upper surface is flat, the lower hollow, and on the back part is a tubercle, to which, and to a neighbouring roughness, the strong, short, thick ligament which connects this bone to the coracoid process is attached.

The external end is horizontally oblong, smooth, sloping on the posterior side, and covered with cartilage for its attachment to the acromion. The bone is spongy around, for the firmer connection of the ligaments. The medullary arteries enter behind in the middle of the bone, and pass obliquely outwards.

The clavicle is firmly fixed to the sternum; but, as the cartilage is moveable, some motion is admitted, which at the other extremity is more conspicuous.

These bones are subject to caries, exostosis, and fracture. It will be obvious, from the description, that it will be difficult to keep the ends together, and many contrivances have been invented for this purpose. Mem. de Chirurgie, v. 20; Desault in Baldinger's Journal, xv. 73.

Clavus.—Page 448, col. 1, line 45; "*and is wholly separated.*"—We find in authors some stories of corns annually suppurating, and it is said, by Borelli, that death has been the consequence of cutting a corn. Armstrong considers corns as the effects of a rheumatic diathesis, and Camerarius endeavours to show that the gemursa of Pliny is only a more malignant species of corn (Dissertatio de Gemursa Pliniana). Silius Italicus is said to have died of an incurable corn.

Among a number of trifling superstitious remedies we find green wax used after cutting, the colour of which is owing to nitrat of copper. A French author,

with similar views, recommends a plaster of gum ammoniac, verdigris, and wax. The cream of milk with pisselæum is also a boasted remedy. Milder applications, as lemon juice (after cutting), the juice of the sedum, and purslain, have sometimes succeeded; in other cases the milk of figs, fresh squills, horse-radish, &c. Severinus recommends the actual cautery.

CLIMATE.—Page 449, col. 2, line 22; "*distempered imagination*."—See TOPOGRAPHIA MEDICA.

CLITORIS.—Page 450, col. 1, line 20; "*venereal pleasure*."—The blood-vessels of the clitoris come chiefly from the hypogastric arteries, and its nerves are derived from the second and third pairs of the nerves of the sacrum, by means of which they communicate with the great mesenteric plexus, and the great sympathetic nerves. They are not, of course, under the controul of volition. See NERVUS.

"*And if weak women go astray,*
Their nerves *are more in fault than they*."

The diseases of the clitoris independent of its enlargement, are cancer, ossifications, and tumour. There are few instances of cancer; but we find that it has been extirpated in such cases with success. Ossifications, it is said, are not uncommon among the Venetian courtesans, and, in different works of Bartholine, there are numerous instances of this disease. In Riedlin's Collection we find an instance of a considerable enlargement of the clitoris on the approach of the menses: a slight fulness of this part is not uncommon, and we recollect a case of a watery tumour of the same organ, perhaps from hydatids, as it was not connected with dropsy.

A morbidly enlarged clitoris may be safely removed by ligature or extirpation. See Denman's Midwifery, and Simmons in the Medical and Physical Journal, vol. iii.

CNIDIA GRANA.—Page 451, col. 1, line 22; "*Daphne gridia*."—The word meant was *gnidia*; but the species was erroneously noted. They are the seeds of the *daphne mezereum* Lin. Sp. Pl. 509. The berries are oval, of the size of a pea, including a round seed, of which the shell is brittle, the kernel white, oily, and very acrid, though the pulp is mild. The nucleus is much more dangerous, as, from the mixture of the oil, the acrimony is not easily washed off; and it is delusive, since the impression on the palate is at first mild and agreeable. Birds are very fond of them; but they are poisonous, if swallowed in due proportion, to every animal. Four of the seeds were nearly fatal to a man; but he was relieved by demulcents and opiates. If, however, the nuts are not minutely masticated, they are not equally dangerous. The more robust peasants of Brunswick take eight grains as a laxative, by which they often procure twenty motions; and Pallas informs us that the inhabitants of the northern districts of Siberia sometimes take thirty of the nuts bruised for the same purpose; and even in Dauphiny they are employed, though in less doses, as cathartics. The Russians use them as emetics in chincough. The Tartars think that they at first increase the cough, though afterwards relieve it. The inhabitants of Finland give in the cough nine grains of the seeds, and in intermittent fevers twenty-seven (Halleri Stirpes Helveticæ, N° 1024). In Sweden an ointment is made of the bark and the nuts, applied to cancerous and malignant ulcers.

COAGULANTIA.—Page 451, col. 1, line 64, read "Externally *there* are undoubtedly coagulants," &c.

COCCINILLA.—Page 453, col. 1, line 5; "*about the size of a flea*."—It is an ill-shaped, stupid insect: its eyes, mouth, and antennæ are fixed so deeply in the skin that a microscope is necessary to distinguish them. The males are rare, in the proportion nearly of one to three hundred, and more active than the females. The neck is narrower than the head, and still more so than the rest of the body. Its thorax is elliptic, exceeding in length the head and neck, and flattened below. The antennæ are jointed, and from each joint hairs issue four or five times longer than the insect. Its two wings are fixed to the upper part of the thorax, fall like those of a fly, and are of an oblong form, suddenly diminishing where they are joined to the body.

COCCYGIS OS.—Page 453, col. 2, line 51; "*a pair of nerves pass*."—The shoulders of this bone extend farther than the end of the os sacrum; and this should, in Dr. Monro's opinion, fix the commencement of the os coccygis rather than the number of the bones. The upper surface of this bone is a little hollow, and from each shoulder a process often rises to join with the bifurcated spine of the fourth and fifth bones of the os sacrum, to form a bony bridge. Sometimes these shoulders are joined to the sides of the fifth bone of the os sacrum, forming the notch mentioned for the passage of the twenty-ninth pair of spinal nerves. Immediately below the shoulders a notch may be observed on each side, through which the thirtieth pair of nerves passes. When the bones ossify, the upper end of each bone is formed into a cavity, exactly adapted to the protuberance below. All these bones are capable of motion, of which the first, but particularly the second, enjoys the largest share: their substance is very spongy.

These bones differ from vertebræ, since they have no processes, no cavity for the spinal marrow, nor holes for the passage of nerves. They have no lateral motion; and in advanced life the motion backward and forward is greatly impaired. Its use is to support the rectum, and as it is cartilaginous in infants, we see why they are so frequently subject to exania. Its chief disease is luxation, which may in general be safely restored.

COCHLEA.—Page 454, col. 1, line 30, for *arises* read *arrives*.

COCHLEARIA BRITANNICA.—Page 454, col. 2, line 7; "*a penetrating acid (acrid) taste*."—Birds in Iceland feed on it, and become very fat; but their flesh acquires a disagreeable flavour. The oil, though in small quantities, is so rich that a single drop gives the smell and taste of scurvy-grass to sixteen ounces of any fluid: it is specifically heavier than water. The plants of this order have been styled alkalescent; but no experiment shows any alkali, and the slight fermentation which en-

sues when the juice is added to beef is of the acid kind. De Haen (Ratio Medendi, viii. 235) calls it a volatile acid, soon degenerating into an alkali. In Iceland they eat scurvy-grass, cut in small pieces, with milk or whey, and keep the plant laid in strata in large casks.

The rheumatism, in which it is recommended by Sydenham, is what he styles the scorbutic, and he joins it with the compound powder of arum. The taste is best concealed by a little nutmeg. In scorbutic ulcerations of the fauces the juice is applied, united with alum.

The *antiscorbutic spirit of Drawitz* is prepared by adding the distilled spirit of tartar, which is highly acrid and empyreumatic, to the spirit of scurvy grass, in which vitriol calcined in a red heat has been previously dissolved. It is highly volatile and acrid, exciting sneezing; commended by Werlhoff, not only in scurvy but in palsy, intermittent fevers, and debility of the stomach. The taste can, however, be scarcely borne, unless given in syrup, or with mucilage; and Werlhoff's dose was thirty drops, though Drawitz gave in in a larger quantity.

COCTIO.—Page 455, col. 2, line 59; "*second and third coction.*"—See CONCOCTIO.

COFFEA.—Page 457, col. 2, line 18; "*first Europeans who writ on the use of it.*"—Rauwolf visited the East in 1573, and Alpinus first described the coffee tree in 1591: he thought it resembled the euonymus. It was used in the earliest ages in Ethiopia, and brought to Arabia in the fifteenth century. About the year 1690 the president of the Indian society, Van Hoorn, procured recent coffee berries to be sent from Arabia to Java, which produced many plants. One of these was conveyed to Witsen, who presented it to the botanic garden at Amsterdam in 1710 (Linnæi Amœnitates Academicæ, vi. 164). It now vegetates and bears fruit in our conservatories. Its most genial natural soil is sandy, dry, and warm, though it occasionally flourishes well in a fertile and shady valley. In Arabia it is collected in elevated situations, or at the foot of mountains, where streams of water are frequent, or can be led to it.

The fruit in pairs, or quaternions, proceed from the axilla of each leaf, consisting of an oblong berry, of the size of a moderate cherry, somewhat compressed on each side, covered with a red, soft, thin epidermis, under which is a sweet and somewhat viscid flesh. When this is separated, two seeds are observed (very rarely a single one) divided by a septum, oblong, convexly plane, and on the plane surface marked with a furrow. Each is covered with a cartilaginous arillus, within which there is a very thin membrane. The double covering is separated by agitation of the dry fruit; the one brown, from the pulpy flesh, with the epidermis; the other yellow, from the arillus. From the former the café à la sultane is prepared; but its flavour is disagreeable to an European palate. Coffee is sometimes prepared from the seeds without roasting, and they are boiled in water for half a quarter of an hour. The decoction is of a yellow colour, and is said not to produce watchfulness nor anxiety. The Arabians and other eastern nations drink their coffee without sugar or cream. We have no reason for thinking either injurious.

Coffee, we have seen, contains originally some albumen; but this seems to be destroyed by the operation of roasting, and we cannot, therefore, allow it a nutrient quality. The unroasted coffee seems to be without the inconveniences which attend the use of the roasted seeds, and it is probable that the narcotic which coffee undoubtedly possesses is owing to the oil rendered empyreumatic in that process. To this power the watchfulness, the anxiety, the palpitations, and, from its excess, vertigo, tremblings of the limbs, cowardice, eruptions on the face, weakness of sight (Linnæi Amœnitates, l. c.), and palsy (Percival), are to be attributed. Hysteria and hypochondriasis are greatly increased by it, so that Tissot guards literary persons from drinking it freely. The catamenia it is said to render more profuse, and to continue the discharge beyond the usual age: it has been accused also of inducing leucorrhœa and hæmorrhoides, of producing emaciation, and lessening the venereal appetite. Coffee is consequently supposed not to be adapted to persons in fever, to the choleric, the plethoric, and the emaciated.

It is rarely used as a medicine. We have mentioned Dr. Percival's recommendation of the infusion in asthma, and it is sometimes said to produce a discharge of urine, as well as of stool. In a bilious diarrhœa it has been apparently useful; and a small cup of strong coffee, with an equal quantity of juice of lemons, is supposed to have been successfully employed in the cure of intermittents, if given on the day of the apyrexia, and the profuse sweat excited by it supported by warm drinks.

COFFEA.—Page 457, col. 2, line 48; "*oil and some salts.*"—Mr. Chevenix, in the Bibliotheque Britannique, N° 158, from some experiments concluded that coffee was neither acid nor alkaline, and that it did not contain tanin previous to its roasting. M. Paysse, either from these remarks, or, as he observes, considering that no analysis of coffee had been undertaken since the operations of chemistry were more minute and refined, engaged in this subject at some length. The memoir is abridged by M. Parmentier, in the fifty-ninth volume of the Annales de Chimie, published since the article was printed.

This author found that coffee contained a particular acid with distinct characters, in a disengaged state, since the powder quickly reddened the vegetable juices, and wine or alcohol would separate it in a state more or less pure, without the assistance of heat. The acid decoction of coffee easily decomposes many metallic salts, particularly of tin, iron, lead, &c. As these precipitates are more copious, and of a deeper colour than those formed by the acid in a state of perfect purity, it is probable that the decoction contains some extractive, albumine, or colouring matter. The colouring matter is apparently precipitated in part by its affinity to the metallic *caput*, and the albumine, no longer rendered soluble by the acid, accompanies it. The acid of coffee may be obtained in sufficient purity by mixing its decoctions or macerations in alcohol with the muriats of lead, and decomposing the salts in the manner practised

by Mr. Chevenix, by sulphurated hydrogen. The cafiat of lead may be decomposed by sulphuric acid. This new acid has not yet been reduced to crystals; but is wholly soluble in water and alcohol. It separates the small portion of iron usually contained in the prussiat of potash, and may thus be useful in purifying this useful reagent.

Different species of coffee contain this acid in nearly the same proportion, and it exists in a small quantity in infusions of coffee, roasted in different degrees, as well as in the products by distillation of the same seeds. It certainly resembles the gallic acid and the tanning principle; but M. Paysse's experiments show that it differs from them, and essentially from the latter. The acid is apparently the unknown principle mentioned by Mr. Chevenix, which he seems not to have examined with care. The salts which it forms with different bases are decomposable more or less easily by fire, or the more powerful acids; but the order of affinity is different from any known acid; for the alkalis have the weakest attraction to it. When decomposed by the sulphuric acid, assisted by heat, by the nitric, the muriatic, or the oxygenated muriatic acids, it is reduced to the malic acid. It appears, from distillation, chiefly composed of carbon, with a less proportion of hydrogen, oxygen and azot, the existence of which is proved by the products, which are oil, pyromucous acid, carbonic acid, and carbonated ammonia. About 100 parts of the watery extract of coffee, produced from 750 parts of the powder, yielded of the cafic acid 0.55; extractive, 0.25; vegetable albumen, 0.05; resinous matter 0.09; loss, 0.06. The ashes and coal of coffee contain muriat of potash and lime, with a very minute portion of iron.

Roasting coffee is an operation of considerable nicety, as it is necessary to give the taste of empyreuma, without depriving the berry of its aroma. Under the idea of making the coffee strong, this operation is sometimes carried too far, and it is almost wholly carbonated. In fact, the colour is deeper, but the aroma is destroyed, and the taste is acrid and bitter, followed by a very disagreeable empyreuma. This coffee is never fine, and the union of the component parts is apparently destroyed. At the end of the roasting a little butter is sometimes added to prevent the exhalation of the aroma, sometimes sugar, which is said to heighten the flavour. It must be powdered only when used, or it loses its flavour, and has not those globules of oil which usually swim on the surface of the best coffee. The infusion M. Paysse considers as by far the preferable mode of preparation. Cold water does not extract from coffee either the aroma or the other principles. The Dutch supply its place by the roots of the wild succory, the *cichorium intybus* Lin. Sp. Pl. 1142.

Cold Affusion. See Bathing; Currie on cold Affusion, two volumes.

Colica.—Page 463, col. 1, line 24; "*similar effects.*"—Independent of acrid matter, some substances seem to act mechanically, or by the spasm, occasioned by their irritations, in producing colic. Gall-stones, when passing through the ducts, sometimes occasion this disease, or at least pains which are mistaken for it, and authors have described it as proceding from biliary calculi in the intestines; but this can only be the case when, by sticking in the villous coat, or in the caput coli, they produce considerable irritation. Some tubercles are occasionally formed in the intestines of a sebaceous nature, and appear to produce colic. Scott, in the Edinburgh Medical Commentaries, has described a case of colic relieved by a discharge of adipose masses, and in the Acta Naturæ Curiosorum a pain of the hypochondria was removed, after the evacuation of some globules, resembling in substance soap (vol. iii. obs. 51). There are numerous instances, in different collections, of colic arising from cherry and plum stones, sometimes covered with conglomerated hair, in one instance (Philosophical Transactions, 252) with calcareous matter. Cancerous and schirrous tumours, hydatids, as well as obstructing causes of every kind, have occasioned colic.

Obstructions may also arise from some disease of the intestine, independent of its contents, or of the neighbouring organs; thus hernia, a rupture of the colon, a contraction of the intestines (Stoll Ratio Medendi, vii. 154), a callosity of the intestines (Valisnieri Opera, iii. 305), sometimes ossifications in their coats, and even varices in their veins, have been said to have occasioned it. Tumours in the mesentery, the omentum, the liver, the pancreas, the stomach, the kidneys, or a hernia of the stomach into the thorax, may contract the canal of the intestines, and occasion colic pains. Bordenhave, in the History of the Academy of Sciences at Paris, mentions as a cause a contraction of the omentum in the form of a rope; but it is more singular to find the same consequences from its being wanting. (De Haen Ratio Medendi, xi. 3); Quarin de Morbis Inflammatoriis, 160.

In the cure we have spoken too slightly of vomits. Colic is sometimes kept up by acrid saburræ, gradually passing from the stomach; and emetics are frequently the quickest mode of relief. When colic arises also from repelled gout and eruptions, from cold and damp, a vomit will often relieve. Stoll we perceive to be very partial to this remedy, and he has given three and five in succession, particularly in the summer season (Ratio Medendi, ii. 135, and iii. 65). Dashing of cold water against the legs and feet has been mentioned under Ileus, q. v.; but in the warmer climates we perceive cold employed in all its rigour. Snow has been externally applied, cold draughts of water freely given, cold clysters injected; but in this country they have been scarcely ever used.

In some cases it has appeared that the mucus is thin and acrid, and this is most probable when colic arises from cold, or when slight, but teasing, in elderly persons. In such cases demulcents of every kind, often joined with opium, may be employed, and oils, particularly the oleum ricini, is useful. Should these fail, the old remedy, vitrum antimonii ceratum, has often succeeded, and even wax, united with a proportion of soap, to render it soluble. When it arises from spasm, evidently connected with debility, the warmer aromatics, with opium, are highly useful, taking care to prevent the latter from constipating the bowels. As stimulants, turpentine and the oil of juniper are often advantageous, and spirits or wine have been

freely employed, often indeed with too much freedom, and inflammation has been induced. Other narcotics employed have been the nux vomica, the skins of walnuts, henbane, camphor, tobacco, &c. Blisters to the abdomen have been often useful, and leeches, cupping-glasses, burning with moxa (Kempfer), and escharotics applied to the navel have been recommended.

See Morgagni de Sedibus, xxxiv. xxxv. 21, 22; Stoll Prælectiones, ii. 185; Saalman Descriptio Morbi Variolosi et Colicæ Acutæ; Eyselius de Colica Passione; Baglivi Praxis Medica, i. 9.

The *colica pictonum* is not always attended with severe pain, but very generally with a retraction of the abdomen, though sir George Baker mentions its being sometimes distinguished by a considerable flatulence. In general, stools are procured with great difficulty; but gangrene is less common, from their delay, than in colics of a different kind. Of lead as a cause we have spoken in the article PLUMBUM. It is indeed a rare one, and sleeping in newly-painted rooms is undoubtedly not dangerous from any saturnine effluvia. We lately met with a case attributed to this cause, and was blamed for our incredulity; but, in fact, the lady had for many years been in the habit of using saturnine cosmetics.

The cathartics employed must be of the most active kind, and these often long continued, before any effect is produced. The torpor induced on the bowels requires the most active stimuli, and the empirical remedy among the Devonshire labourers is equal parts of ardent spirits, and the ethereal oil of turpentine. Hillary, however, considers stimulants as injurious; but Lentin properly observes, that the pulse rising after the fourth day is a good sign. Sydenham recommended the balsam of Peru in doses of forty drops, twice or three times a day, and Dr. Lionel Chalmers combined with his purgatives some essential oils. Oily medicines, though recommended by Eyerel, Mosely, Tissot, Odier, Grashuis, and Segner, have been in our hands the most inert cathartics, and the only medicine of this class from which we have derived benefit is calomel in large doses. Hahneman recommends the dry calcareous liver of sulphur as an antidote to the lead; but in a few instances only is lead conveyed into the intestines when it produces the disease, and, after much inquiry, we cannot find that this remedy has been employed. Blisters have been applied to the abdomen by Hunter (Diseases of the army in Jamaica), by Baker and Grashuis; but in our hands they have availed little, and bleeding has been usually unnecessary.

The chief narcotic, employed, has been opium, and it has been given previous to the evacuations, after them, and united with the cathartic. The last method has always appeared trifling; for the power of the purgative is lost before the action of the opium has ceased. When the violence of pain requires it, the opium should be first given; for, previous to the cessation of the spasm, purgatives will be of little use, and the dose should be such as to mitigate its violence, whatever the necessary quantity may be. Dr. Adair gave a grain every hour (Memoirs of the Medical Society, ii. 21). Other narcotics recommended are the henbane, the camphor, and the musk; but on opium our chief dependance should be placed. Mercury does not seem to have been given to a sufficient extent; to large doses of calomel, internally, active mercurial frictions on the abdomen may be joined. The practice of Dr. Chalmers seems to support this idea; for he sometimes gave a wine glass full of a solution of vitriolated copper, in the proportion of eight grains to eight ounces. This medicine at first discharged much bile, both from the stomach and intestines, but at last ceased to procure any evacuation. We have found copper, like other metals, a powerful tonic.

De Haen Ratio Medendi, iii. 2. x. 1 and 2; Ratio Medendi Continuata, iii. 363; Fothergill in the Medical Observations and Inquiries, v. 394; Lentin in Blumenbach's Bibliotheca Medica; Grashuis de Colica Pictonum, Amsterdam, 8vo. 1752, with the Appendix, containing a Decad of Observations, Amsterdam, 1755; Segner de Colica Saturnina Metallurgorum; Stoll Ratio Medendi, vii. 308.

COLLIQUATIVA (from the same), excessive evacuations either from the bowels or skin, in which the solids of the body seem to melt.

COLLISIO.—Page 465, col. 2, line 27; "See CONTUSA."—The reference is useless; for, though contusions happen by collision, the effects do not explain the cause. In physics *collision* means the mutual impulse of two or more bodies in motion, in opposite directions. The effect of this impulse is in proportion to the momentum of the largest body, though sometimes, when the velocity of the smaller is increased in a vast proportion, its momentum may exceed that of the larger. Yet in the human body velocity does not seem always to supply the defect of bulk; for that of light is conceivable, though it appears to possess no momentum in its impulse on the retina, and out of the body scarcely any, even when concentrated in the focus of a mirror.

COLOCYNTHIS.—Page 466, col. 1, line 37; "*quickens their operation.*"—It has been used as an anthelmintic; but it is not poisonous to worms; for Redi found them living twenty-four hours after immersion in a strong decoction of colocynth. As a drastic purgative it may, however, separate them with the mucus in which they are involved. In gonorrhœa it was a favourite remedy, when active purgatives were supposed to be the most certain means of relief; a plan lately introduced again, it is said, with success in some military hospitals. Fabre's tincture, if the remedy be admitted, is the safest form (Maladies Veneriennes, ii. 368). An ounce and half of the gross powder with six cloves, a dram of the stellated aniseseed, twelve grains of saffron, and an ounce of diuretic salt, are digested in twenty ounces of spirit of wine for a month. Two drams of the strained tincture are taken in white wine, for three days, every morning. On the fourth the medicine is omitted, and the former course afterwards repeated. Dahlberg's tincture is said to be more convenient, which he gives in chronic pains of the head. It differs only in omitting the cloves, the saffron, and the salt. The dose in these cases is from fifteen to eighteen drops three or four times a day. A woman who was pregnant took, it is said, a large tablespoonful without miscarriage following. It has been recommended in epilepsy, melancholy, mania, asthma, &c.; but seems to have no effect different from any purgative equally active.

Some authors contend that the seeds *are* purgative (Lobel); and according to Wedel, when infused in beer, they have been successful in lues.

Various preparations of this medicine occur in the older pharmaceutical authors. The *trochisci alhandel, confectio hamech, pilulæ iliacæ*, &c. The oil of colocynth is only the fruit infused in oil, with the addition of the root of black hellebore, and the gall of an ox.

COLON.—Page 465, col. 2, line 32; "*rugæ are waved and irregular.*"—These rugæ are not found under the bands, which, of course, appear to be distinct from the intestine, and if these bands are cut through all the rugæ are not obliterated.

The common coat on one side is a continuation of the mesocolon, and its continuation on the other forms the omentum. The irregular action, therefore, of the mesocolon, when not balanced by the omentum, may be the cause of COLIC, as stated in that article; see page 84, Ap. The longitudinal fibres of the muscular coat are very slender, except in the bands, and those which are in the situation of the annular fibres are segments only stretched over the folds. The solitary glands are broader and more numerous than in the cœcum. From the course of the colon, spasms and inflations of this intestine may be mistaken for a disorder of the stomach, gall-bladder, kidney, or pancreas: on the contrary, diseases of these viscera may be referred to the colon: the former error is, however, the most common. The diseases of the colon do not greatly differ from those of the other intestines.

COLOR. The *colour* of the complexion is often useful in our prognostics. The dead paleness shows that the circulation is not duly carried to the extreme vessels, while the livid colour is equally a proof that the blood stagnates in them: the latter, when in the cheeks, is the most common and certain mark of an obstruction of the circulation through the lungs; and when the foramen ovale continues open, the whole body is cærulean. The dead paleness usually partakes of a yellow hue and the most brilliant complexion is compounded of this yellowness, the real colour of the skin, and of the red colour of florid blood. The more brilliant yellowness from jaundice is well known; but the "green and yellow melancholy" as well as "green-eyed jealousy," exist almost exclusively in the pages of poetical fiction. Yet, as green is compounded of blue and yellow, its existence cannot be wholly denied.

In the materia medica we are informed by Linnæus that a yellow colour usually points out bitterness. Yet gentian is not yellow, and gutta gamba of a most brilliant hue. Red, he thinks, denotes a sour taste, and this is undoubtedly true, not only of fruits, but of herbs which turn red in the autumn. The stalks, however, of the conium maculatum are red. Green indicates a crude unripe taste, as in leaves and immature fruits; a yellow white, a sweet and luscious one. Black generally shows a nauseous, disagreeable taste, with, very generally, deleterious properties.

COLUMBO.—Page 468, col. 1, line 53; "*ultimately be successful.*"—Distilled with water it shows no marks of oil; but the fluid has a slight balsamic taste, and a smell resembling cummin seeds (Cartheuser Dissertationes Physicæ, 149). From an ounce of the root the infusion was brownish, very bitter; and by a gentle evaporation afforded a dram and twenty-four grains of extract, highly bitter, and with a slight smell of cummin. A saturated tincture was yellow, with a grateful balsamic smell approaching that of musk or a hyacynth, intensely bitter, affording only twenty-four grains of extract. Wine digested with the root is only moderately bitter; but the best menstruum is proof spirit (Cartheuser, l. c. and Josse Histoire de la Societe de Medecine, Paris, iii. 343). The watery infusion is soon injured by keeping.

The Indians consider it as an excellent remedy in diseases of the stomach and bowels, and they generally employ it in infusion with Madeira wine. In puerperal fever it is often used, particularly where the discharge by stool is apparently kept up, in excess, by a redundance of bile. In habitual vomiting, from weakness and irritability of the stomach, it is of service, and it is said often to repress this action when produced by the bark in intermittents. In the yellow fever it is supposed to quiet the irritability of the stomach very successfully. The union of vitriolated kali often adds to its efficacy. Columbo root was first mentioned by Redi, in 1685. Experimenta circa res Naturales, 142.

COLUMNIFERUS.—Page 468, col. 2, line 40; "*bearing columns or pillars.*"—It is the thirty-seventh order of Linnæus' fragments, consisting of plants, whose stamina and pistil have the appearance of a pillar in the center of the flower. Plants of this order differ greatly in size and height; for the mallow, the tea-tree, the lime and the silk cotton tree belong to it. On the whole, it is far from a natural order in any view.

COMPOSITUS.—Page 471, col. 2, line 12; "*in opposition to single.*"—A compound flower is an aggregate of many sessile florets on one common receptaculum, with a common perianthium, whose five antheræ unite in the form of a cylinder: the flosculi are monopetalous, and under each is a monopetalous germen. Compound flowers are *ligulated, tuberous*, or *radiated*. The COMPOSITÆ are an order in Linnæus' natural method.

CONCEPTIO.—Page 471, col. 2, line 45; "*a living full grown fœtus has been found.*"—These facts are sufficient to overturn the tales of authors, who contend that impregnation has taken place while the hymen was entire; that women have conceived who have never menstruated; and that the same event has occurred where the penis has been in part destroyed. In the first and last instances the causes of the deception are obvious. No conception has taken place where at least some passage has not remained pervious; and the conception depends often on the ejaculatory power, rather than the length of the penis. Where indeed the venereal inclination is strong in the female, a very slight influence is apparently sufficient. The second case has numerous and respectable authorities, among which we may reckon Morgagni, Fabricius Hildanus, Stark, Friend, Hollerius, &c. In fact, however, if there is such an evolution of the organs that a disposition to menstruation exists, it is of little consequence whether the discharge has taken place. A woman

more readily conceives soon after menstruation; but may do so in any circumstances, if the organs are duly evolved. Conception during menstruation is not so easily understood yet facts of this kind are adduced by authors of credit; and they are not more difficult to explain, than that the menstrua shall recur soon after conception without destroying the connection of the fœtus with the uterus.

CONCOCTIO.—Page 472, col. 2, line 53; "*δια πυρος, through the fire.*"—We have been entertained by a recurrence to the old authors on this subject, to observe the terrors they felt that the concoction should not be perfect; but disgusted by observing the apprehensions they entertained of every kind of evacuation, particularly purging, from the often repeated axiom of *cocta non cruda sunt movenda.* The best information may be obtained by those who wish to pursue the subject in Richter's Dissertatio de Coctionum Præsidiis Abusu Evacuantum Eversis, Gottingen, 1758; Quesnay in the first volume of the Memoirs of the Academy of Surgery, page 122; and De Gorter in his Commentary on the Aphorisms of Hippocrates, i. Stoll in Germany, and Cullen in Great Britain, first broke the spell; the former unwillingly and with hesitation, by confining concoction to inflammatory, and excluding it from gastric, fevers; the latter more decisively, by overturning the whole of the humoral pathology.

CONCOU, a plant found on the coast of Guinea, the leaves of which are bruised with oil, and employed, it is said, with success in destroying the *Guinea worm.* Its place in the botanical systems has not been ascertained.

CONESSI.—Page 477, col. 2, line 26; "*where it is called conessi.*"—*Nerium antidysentericum* Lin. Sp. Pl. 306. It is called, on the coast of Coromandel, the Tellicherry bark; and Lind informs us that it is employed in the peninsula of India to remove intermittents. Dr. Monro (Medical Essays of Edinburgh, iii. 32) found it useful in dysentery as well as diarrhœa. Dr. Brocklesby considers it as a narcotic.

CONFERVA, a genus of plant arranged with the algæ. The tubercles are of different sizes, on very long capillary fibres: they chiefly grow on stones, on the sides of cisterns, and on ponds where the current of water is inconsiderable.

CONFERVA RIVULALIS, Lin. Sp. Pl. 1633; a plant lately used in asthma and hectic, from the observation, that in sunshine it separates a large proportion of vital air; but this we now know to be injurious in such cases, so that it is no longer employed.

CONGESTIO.—Page 479, col. 1, line 39; "*quickly formed and terminated.*"—In pathology, it is the accumulation of blood in any one part, which the Boerhaavians considered as arising from lentor; the Stahlians and the Cullenians, from partial increased action of the vessels. We have not been able to trace this opinion beyond the era of Stahl, and now introduce the subject to notice more distinctly the titles of the dissertations in which this opinion was promulgated. Stahlii Dissertatio Epistolica de motu Tonico Vitali indeque Pendenti motu Sanguinis Particulari Jenæ, 1692; Ejusdem de Commotione Sanguinis Translatoria et Eluctatoria Halæ, 1694; Ej. Positiones de Estu Maris Microcosmici, seu Fluxu et Refluxu Sanguinis Halæ, 1696; Ej. de Motibus Humorum Spasmodicis, a motu Pulsus Ordinarii Diversis Halæ, 1697.

CONGLUTINATIO, the union of two contiguous bodies by the interposition of a third, as of two fingers, each deprived of their integuments, by an effusion of gluten; or of the pleura to the lungs, by effusion, one of the terminations of inflammation.

CONIFERÆ ARBORES.—Page 479, col. 2, line 12; "*fir and pine.*"—The fruit of these trees is squamose and scaly, the substance ligneous. Under the scales the seeds are placed, and when these are ripe the squamæ separate. Linnæus has united them in a natural order, and the genera are the *cupressus, ephedra, equisetum, juniperus, pinus, taxus, thuja.*

CONNIVENTES VALVULÆ; those folds discovered on the inner surface of the duodenum and ilium.

CONSERVA.—Page 480, col. 1, line 11; "*become glutinous, and astringents soft.*"—Read *less* glutinous and astringents *mild.*

CONSOLIDA REGALIS. *Delphinium consolida* Lin. Sp. Pl. 748; a plant which we might resign with little loss. The flowers are bitter, and the taste remains in the watery as well as the spirituous extract; in the former there are some traces of mucilage, and the water is tinged with their blue colour. Authors have copied from each other with little examination, and the cure of ophthalmia by the distilled water recurs in almost every writer on the materia medica. Its utility as a diuretic, lithontriptic, an emmenagogue, and a deobstruent, scarcely rests on a better foundation. Ambrose Paré styles it a vulnerary.

CONTORTÆ, the thirtieth order of Linnæus' fragments, comprising plants which have a single petal, bent on one side. The genera are *echites, gardenia, genipa, microcnemum, nerium, periploca, rawolfia, tabernæmontana, vinca, apocynum, asclepias, cameraria, ceropegia, cynanchum, pulmeria, stapelia.*

CONTRACTURA PRIMARIA.—Page 485, col. 1, line 6; "*from irritating acrimony.*"—The causes of these varieties are numerous. Suppressed evacuations are frequent ones, and in Baldinger's collection there is an instance of its arising from repelled itch, and yielding when the eruption was restored. It is said not to be uncommon if the hair is prematurely cut off in plica, and suppressed perspiration has often occasioned it. Anger and terror are enumerated among the causes; but more frequent ones are metallic vapours, particularly the fumes of arsenic, lead, and mercury. From an injudiciously conducted salivation it seems also to have arisen. The irritation of a ganglion on a nerve, or an injury of a nerve in bleeding (Plater), or from a fracture (Eason Medical Commentaries, v. 83), have occasioned the disease.

The causes will often suggest the remedies. Embro-

cations of every kind, stimulating plasters, the warm bath, mineral waters, electricity, and galvanism, have been employed: oily embrocations are sometimes successful; but the pulsatilla nigricans has been only recommended by Storck. A plaster of the gum ammoniac, softened with vinegar of squills, has been highly commended on the most respectable authorities.

CONTRAYERVA. — Page 485, col. 1, line 37; "Lin. Sp. Pl. 176."—There is still some difficulty respecting the real plant from which this officinal is procured. Dr. Houston (Philosophical Transactions, xxxvii. 196, 197) refers it, with great reason, to the dorstenia drakena, or to a species since distinguished by his own name (Sp. Pl. Wildenow, i. 683, 682); yet Wildenow still preserves the references under the dorstenia contrayerva (683). The name, which implies a plant against poisons, may have misled travellers, and indeed Hernandez (Rar. Med. Novæ Hispaniæ Thesaurus, 301) considers this plant to be a species of passiflora; and Jussieu has referred it to the *psoralæa pentaphylla* Lin. Sp. Pl. 1076 (see the following article, CONTRAYERVA NOVA). The appearance of the root opposes the opinion that it is the *drakæna* of Clusius, unless the fibres are supposed to have been destroyed in the voyage.

The colour of the root is a reddish brown, internally white; the taste and smell of the fibres are much weaker than those of the tubera. Vitriolated steel shows no astringent principle. The watery decoction is so mucilaginous that it will scarcely pass through a filter, and the aqueous extract is double the quantity of the spirituous. The tincture is, however, more elegant in its appearance, of a red colour, more pungent than the decoction, leaving a sensation of heat and pungency in the mouth. It seems to have been formerly a favourite medicine in low fevers, though now neglected. Whether it was too much extolled, and expectation too highly raised, or whether really useless, we know not; for we have never employed it, except with the bark in gargarisms in the angina maligna, and then rather from its mucilaginous than its pungent qualities.

CONTRE-COUP, a French word, implying a contra fissure, viz. a fissure on the side opposite to that on which the blow was inflicted. See FISSURA.

CONTUSA.—Page 486, col. 1, line 53; "*often the consequence.*"—We have omitted, among the remedies, to mention leeches, or camphor combined in a large proportion with alcohol. The latter is chiefly useful when united with strong vinegar. In inward contusions the German surgeons depend greatly on the efficacy of arnica.

CONVULSIO.—Page 488, col. 2, line 65; "*is the only certain remedy.*"—Convulsions are sometimes periodical, and Bonetus mentions them as occasionally so violent as to break a bone. They often return periodically; are sometimes, it is said, epidemic (Stoll Ratio Medendi, iv. 60); often contagious (Collectio Societatis Med. Havniensis, ii. 3; Van Swieten's Commentaries). The malleatio is a singular form of this disease, viz. a convulsive action of one or both hands striking the knee like a hammer. We remember a case of this kind, where it affected both hands clenched. If, however, they were separated, or the motion stopped, the convulsion became violent and general. Morgagni, de Sedibus, x. 16, records a case in which it came on in the sound hand, if the finger of the affected one was extended.

Convulsions have been most frequently induced by diseases of the brain or cranium, particularly by effusion of blood, serum, or pus in it (Morgagni de Sedibus, i. 236; ix. 18; x. 6, 9, 18; li. 45, &c.); by exostoses, particularly of the temporal bone; by a misshapen head (Morgagni de Sedibus, ix. 9; Smellie's Collections, 469); and by bony spiculæ irritating the falciform sinus: an irritation of the spinal marrow has produced the same effect. Suppressions of every kind of evacuation have occasioned them, and even the delay of those eruptions, which appear at determined periods, as small-pox, meazles, &c. Terror is no uncommon cause, and the irritations are as numerous as the sensible organs of the body. Among these we have mentioned worms; but probably more frequent sources are acrid contents of the stomach. We may mention also as causes narcotics of every kind, acrid clysters, the more violent drastic purgatives, and arsenic (Helsham in the Edinburgh Commentaries). The deleterious gases have a similar effect. Wounds and punctures of the nerves are frequent causes, and distension of a nerve by an aneurismal tumour has been accused.

If the principle laid down be correct, the first step in the cure will be to remove irritation, or, secondly, to lessen the mobility, so as to render its influence less injurious. The former agrees very nearly with the plans laid down by Stoll (Ratio Medendi, ii. 155, &c.), who directs emetics, laxatives, bleeding, &c. with every method of removing irritation. Each must be, in the first place, useful, if the disease does not occur in worn-out constitutions, where excessive irritability is the only cause. When every suspected source of irritation is removed, the antispasmodics, the tonics, or the narcotics, are employed. The two former have been spoken of at some length (vide in verbis). The narcotics employed have been numerous. The nux vomica; the stramonium (Wedenberg de Stramonii usu in Morbis Convulsivis); Hyoscyamus, Faba St. Ignatii, belladonna (Stoll Ratio Medendi, iii. 407); orange leaves (De Haen Ratio Medendi, vi. 301); and Dippel's animal oil. Morgagni mentions a singular remedy (De Sedibus, x. 21), two ounces of olive oil every night, instead of a supper. See EPILEPSIA.

CONYZA.—Page 489, col. 1, line 23; "*covered with a downy substance.*"—The plant is the *coryza cærulea*, the *erigeron acre* Lin. Sp. Pl. 1211. It is sometimes used in heartburn, and in diseases of the chest.

CONYZA MINOR.—Page 489, col. 1, line 30; "INULA DYSENTERICA."—As sometimes happens in a dictionary, the word referred to is not to be found, or its object is different. Thus, in the above article we are referred to enula, and then only find enula helenium, without any explanation. We should not have blazoned this error but that it is almost the only one. The conyza media is called the *Swedish arnica*, and in the Berlin Transactions styled *arnica spuria*. The root is acrid and

slightly aromatic, though little known. It is more acrid and more astringent than the arnica, and, from the latter quality, better fitted for restraining hæmorrhages. The Russians, it is said, used it with success, in their Persian expedition, when attacked with the dysentery.

COR.—Page 493, col. 2, line 5; "*meliorated by the action of the air*."—The diseases of the heart are those of original structure and situation, or the consequence of former complaints. The heart has been found on the right side, and out of the thorax; sometimes inverted; occasionally displaced by steatoms, or diseases of the other viscera. It has appeared on dissection globular, sometimes flattened, and (chiefly in animals and birds) double. The point, in one instance recorded by Bartholine (Historia Anatomica), was bifid. A concretion with the pericardium, and of both with the mediastinum, have been occasionally observed; and different authorities may be adduced in support of its being often found hairy. The hairy heart of Aristomenes of Messina has been often mentioned. Among the original diseases of the heart we may mention a rupture of different parts, since it probably depends on organic debility. Each part of the heart has been occasionally ruptured; but perhaps the left ventricle most frequently; in one instance it was the effect of an epileptic attack; in another (Ludwig Adversaria, i. 1, 4) the right article was ruptured from a blow. Portal also records a case of rupture from the same cause. An instance of the perforation of the septum is recorded by Dr. Hunter (Medical Observations and Inquiries, vi. 299), and another occurs in the Historia Anatomica of Bartholine (iv. 26). The foramen ovale is sometimes found open (Hunter l. c. case 2; Albini Annotationes Academicæ, i. 9) and, in one case recorded in the Bologna Transactions, vi. by Taceoni, it seems to have been again burst open by a fall. The heart is sometimes found enormously enlarged, sometimes loaded with fat.

The secondary diseases of the heart are, ossifications, hydatids, polypi, inflammations, aneurisms, and ulcerations. Mr. Cheston found, in one instance (Medical Observations and Inquiries, v. 31), the heart wholly without blood, containing air only. It is sometimes wholly consumed, perhaps, as Morgagni suggests, by the irritation of osseous matter (De Sedibus, xxvii. 24; see also xxv. 19, &c.; Mechell in Epistolis ad Hallerum Scriptis, iii.; Senac sur le Coeur, cap. 4). In many instances it is lean, tabid, and flaccid, particularly in some cases of hectic. Lancisi has observed, that diseases on the right side of the heart are pointed out by a pulsation of the jugular veins; a question which Morgagni examines at some length (Ep. xviii. 9, 10, 11). The effects of diseases of this organ are chiefly those of the convulsive kind.

CORALLINA HELMINTHOCORTON. — Page 494, col. 1, line 10;—"*anthelmintic*."—For *conserva* in the line before read *conferva*. This is said to be a fucus, called by La Tourette (Journal de Physique, 1782), *fucus helminthocorton*. The last author who has treated of it medicinally is Schwendiman (Dissertatio Helminthocorti, Historia Natura atque Vires, Strasburg, 1780). When Corsica was invaded by the French armies it was tried by Stephanopoli, a Greek surgeon of the hospital at Ajacio, and by his recommendation conveyed to France and Switzerland. The Strasburg physicians seem to have found it successful as a vermifuge; but, from the few facts recorded, it appears not to have been eminently advantageous. It is chiefly mucilaginous, containing common salt in a large proportion, soda, with Glauber's salt, selenite, and a considerable quantity of an inert earth. These facts do not support its vegetable nature, and, in reality, it does not differ from the other corallines. We believe, however, that the animal inhabiting any of the corallines has not been seen.

CORIANDRUM.—Page 495, col. 1, line 15; "*remarkable consequences*."—The seeds certainly become milder by age; but the plant itself has always been suspected. A late author, Seguier, remarks that in its native country, after rain, it will even affect the heads of passengers (Plantæ Veronenses, 28); and Avicenna has observed, that the plant, when moist, or its expressed juice, brings on vertigo, dimness of sight, and fatuity. Boiling seems to lessen its deleterious power; for the Egyptians used it as a condiment, and in Spain it is accounted a cordial, though sometimes with a suspicion of its affecting the head. Mathiolus is so apprehensive of the deleterious power of the seeds, that he orders them to be steeped three days in vinegar before they are used as a medicine. It has been recommended as a remedy in intermittents.

CORK.—Page 495, col. 1, line 45; "*but now disused*."—When burnt, it is employed in the preparation of Spanish black, and is supposed to be, medicinally, useful, with burnt sponge, in bronchocele and scrofula.

CORNEA.—Page 495, col. 2, line 3; "*but soon evaporates*."—The strata may be easily separated by maceration in cold water; but if macerated until it is nearly putrid, and then immersed in boiling water, the cornea separates from the sclerotica. It is thicker than the sclerotica, particularly at birth, when its posterior surface nearly touches the iris. The figure of the cornea approaches that of a segment of a circle: the circumference of the concave side is circular, but that of the convex transversely oval. See OCULUS.

CORONA IMPERIALIS.—Page 496, col. 2, line 20; "*Crown imperial*."—*Fritillaria imperialis* Lin. Sp. Pl.

CORPORA FIMBRIATA.—Page 497, col. 2, line 35; "*fornix of the brain*."—They are the flattened terminations of the posterior crura of the fornix, which turn round into the inferior cavity of the lateral ventricles, and in the pes hippocampi.

CORPORA QUADRIGEMINA, *tubercula quadrigemina*, *eminentiæ quadrigeminæ*, four white, oval tubercles of the brain, situated, two on each side, over the posterior orifice of the third ventricle, and the *aqueduct* of Sylvius. From a supposed resemblance, they are called *nates* and *testes*.

CORPORA STRIATA.—Page 497, col. 2, line 46; "*mixed together*."—They lie at the bottom of the superior cavity of the lateral ventricles, which they dis-

tantly resemble in shape. The anterior parts are near the septum lucidum, from which they gradually separate, as they run backward, and diminish in size. They are, in reality, the convex bottoms of the ventricles; and, at the lower part of the interstice between the larger portions of them, is the anterior commissure of the cerebrum, a transverse medullary cord, which communicates with the bottom of the corpora striata by a turn towards each side.

Cortex Peruvianus.—Page 499, col. 2, line 49; "*virtue to this principle*."—Since this article was printed we have received the experiments of Vauquelin on the different species of bark, of which we shall add an abstract from the fifty-ninth volume of the Annales de Chimie. It is difficult to ascertain, our author remarks, the real goodness of this medicine by its sensible qualities. M. Seguin proposed, as a criterion, the precipitation of tanin, while the bad kinds precipitate a solution of animal jelly; but there are many species of true bark which do not precipitate tanin, though they cure intermittents.

A superior kind of yellow bark, styled royal, infused for twenty-four hours in water, communicated a yellow colour, a very bitter and slightly astringent taste. It formed a copious flocculent precipitate, with a solution of isinglass; a green one of a bilious hue, by a solution of sulphat of iron; and a yellowish white sediment, by tartarised antimony. Oxalate of ammonia, precipitated oxalate of lime, and the solution sensibly reddened the tincture of turnsol.

After the precipitation by the isinglass, when filtered, it was colourless, scarcely astringent, though the bitter taste was sensibly preserved. It gave a green tinge to the solution of iron, as before, though with a yellower hue, and precipitated also the tartarised antimony; but the precipitate was whiter.

Another portion of the same infusion, precipitated by tartarised antimony, and filtered, still rendered an infusion of isinglass and of vitriolated iron turbid. The precipitate, first formed by the antimony, was rendered slightly green by the addition of some drops of sulphat of iron. It would seem, therefore, that the principle which precipitates tartarised antimony, isinglass, and the sulphat of iron was the same; and if the property still remains after precipitation with tartarised antimony, it is apparently owing to the combination of this principle with the antimony remaining in the solution. This supposition, however, is scarcely reconcileable with the very abundant precipitation of isinglass by some barks, which do not precipitate tartarised antimony, so that they seem rather to depend on two different principles. The decoctions afforded the same appearances; but the precipitates were more abundant, and were deposited more quickly. The decoction, as well as the infusion, precipitated solutions of sulphat of copper of a reddish yellow, and of acetat of lead of a yellowish white.

The *Santa Fé bark*, though lately introduced, has been found very efficacious. It is grey externally, red within, thick, slightly curled, with a taste strongly astringent, but an inconsiderable bitterness. Its infusion is much redder than that of the former species; it precipitates a solution of isinglass in red flocculi, and an infusion of yellow bark itself in a very copious red sediment. Though the effect on a solution of tartarised antimony is inconsiderable, it precipitates a solution of iron in a beautiful deep green, sensibly reddens the tincture of turnsol, is precipitated by oxalate of ammonia in oxalate of lime, though less copiously than the infusion of yellow bark. It precipitates the acetat of lead and sulphat of copper in a reddish brown sediment; so that the principle which precipitates the antimony is probably different from that which precipitates the other salts; and, therefore, this species wants some component parts which the other possesses. If, too, they were the same, they would not render each other turbid.

The decoction of this species does not differ from the infusion; but it was not turbid on cooling, and does not possess a sufficient quantity of the principle which precipitates the antimonial and other metallic solutions; for M. Vauquelin is confident that the depositions formed by the decoction of bark, on cooling, are the same which in the bark of Santa Fé precipitates the iron of a green colour, lead yellow, and copper brown, without affecting the salts of antimony. We may, therefore, at least, in his opinion, presume that this species is a weaker bark than the yellow.

The third species was the *grey cincona, styled superior*. The infusion is colourless; but the taste bitter and astringent. It produces a copious white precipitate from a solution of isinglass, of red from tanin, of white from tartarised antimony, and of a beautiful emerald green from vitriolated iron, but induces no change in the infusion of yellow bark.

Grey canella cincona produces an infusion of a deep red colour, a bitter and astringent taste; precipitates in a fawn colour a solution of isinglass, and communicates a green colour to a solution of sulphat of iron; but does not precipitate a solution of the antimonial salt, and occasions no change in the infusion of the superior grey bark, or the infusion of tanin, though it throws down a copious fawn-coloured precipitate from the infusion of yellow bark.

These vegetable infusions, precipitated one by the other most completely, no longer produce any effect on tartarised antimony; from whence it is probable that the principle which, in the yellow bark, precipitates the antimonial, is combined with some substance of the grey canella bark and of tan; but these infusions thus mutually precipitated, still copiously throw down the isinglass from its solution, so that the principle which precipitates the latter is not the same that decomposes the antimonial. What confirms this opinion is, that the infusion of yellow bark precipitated most completely by a solution of isinglass still decomposes the antimonial, though certainly in a less proportion. The precipitation of the metallic salt is not occasioned by the isinglass, which produces no effect on it. The mutual precipitates of the yellow and grey canella barks is brown, dries readily, bubbles when heated, exhales a smoke void of acrimony, and shows some analogy to animal matters, by leaving a light, spongy, coal.

The *red bark* has been improperly called the *pitton bark*; for the latter is a different substance. The infusion is of a red colour, with a light tint of the orange, a bitter and astringent taste. The precipitate, with isinglass, is copious and of a red colour; with emetic tartar, of a yellowish white; with the infusion of the grey canella, brown; with the sulphat of iron,

green. It acts on the other metallic solutions as the former species.

The *grey cincona* was put into our author's hands by M. Bouillon la Grange. The pieces are thin, curled, apparently from the branches or very young trees, apparently of the kind of the quinquina of Loxa, which will be soon noticed. The infusion of this bark, in colour, resembled the red Malaga wine, with an astringent and bitter taste; precipitated isinglass of a white colour, tanin of a yellowish red; infusion of yellow bark grey; emetic tartar in flakes of a yellowish white; sulphat of iron green, and the acetat of lead white. It did not precipitate the sulphat of copper, nor the infusion of the Santa Fé bark. This bark is seemingly an active medicine.

The *dead grey bark* is apparently the white Santa Fé bark, brought home by Humbolt, which will be soon described. The infusion is of the colour of Malaga wine, without astringency or bitterness, producing a copious precipitate of yellow bark, in brown flocculi, and giving a solution of red sulphat of iron a beautiful green, which soon forms a similar precipitate. Emetic tartar, isinglass, and the canella cincona produce no change in it; so that, if a species of bark, it is a very inert one.

The *yellow bark, cincona pubescens* of Wahl, macerated for twenty-four hours in distilled water, yielded a transparent fluid of a golden colour, very bitter, and frothing by agitation. Gallic alcohol threw down a copious precipitate re-dissolved by an excess of alcohol, and again precipitated by adding water, which proves that the matter separated by the tanin is not purely animal. It precipitates the solutions of tartar emetic and nitrated silver of a yellowish white, gives the sulphat of iron a decided green colour, without precipitating any thing. A solution of isinglass produced no change, and the tincture of turnsol was not reddened. The fluid, during evaporation, deposited a rose-coloured substance on the sides of the capsule; when reduced to the consistence of a syrup, a precipitate was still formed of a brown marron colour: the fluid, when filtered, was coloured, and contained the salt peculiar to the bark. The brown substance, washed with a small quantity of cold water, is chiefly soluble in hot water and alcohol, very sparingly in cold: the taste is very bitter.

In the watery solution of this deposition galls form a copious precipitate. Tartar emetic and nitrat of mercury produce the same effects as in the maceration: sulphat of iron is changed to a green; oxygenated muriatic acid loses its smell, and forms, with the solution of this substance, a flocculent precipitate. Isinglass produces the same effect as in the maceration. The sulphuric and acetic acids produce no change, and, when diluted with caustic potash, no ammoniacal odour is exhaled.

Two hundred and twenty-five grammes of this substance dried, and submitted to distillation, yielded much water, a sensible quantity of ammonia, and a purplish oil, which loses its colour by a solution in alcohol; but recovers it when its menstruum is evaporated. A small proportion of charcoal was left in the retort, which, by combustion, gave about one-eleventh of ashes, soluble in muriatic acid, and which consisted of lime and iron.

The bitter coloured substance evidently produces all the phenomena just described; apparently holds a middle rank between vegetable and animal matter; and seems to M. Vauquelin to be the efficacious principle in the cure of agues. The fluid, separated from this substance, was triturated with alcohol, which took up the colouring part, and seemed only a portion of the same substance which had been retained by water. The portion which the alcohol would not dissolve resembled a thick mucilage, with scarcely colour or taste. It dissolved copiously in water, yielding, by evaporation, lamellated crystals of a salt, to be soon noticed, which were slightly coloured.

The seventh maceration of the same bark still precipitated a solution of galls, and it was supposed that cold water could not wholly dissolve the principle which produced this effect. The remaining bark was consequently boiled, and the decoction resembled in every respect the cold infusion, except that it did not dissolve tartarised antimony, probably because its principle was too much diluted.

Eighty-four grammes of the CINCONA OFFICINALIS, treated like the last species, yielded a fluid equally bitter, but of a lighter colour and more mucilaginous. The infusion slightly reddened the tincture of turnsol, and, with reagents, the appearances were the same as with the cincona pubescens. All the infusions were inspissated by evaporation; but the remaining water, containing the *essential salt of the bark*, was evaporated separately, and crystalised. After separating "the colouring matter by means of alcohol, it furnished crystals in a few days." We have thus two species of bark which do not precipitate isinglass, and consequently do not possess the principle which produces this effect "in the other species; these then, according to M. Seguin, should be styled the best kinds."

Cold water, repeatedly effused, still furnished a precipitate with galls, and the residuum was consequently boiled. The decoction was less bitter than the infusion, but more mucilaginous than that of the cincona pubescens; precipitated gall-nuts, and nitrated mercury, rendered the sulphat of iron green; but produced no precipitation with solutions of emetic tartar and isinglass. This species differs, therefore, from the *superior grey bark*.

The next kind examined was the *cincona magnifolia*. One hundred grammes of this bark, reduced to a fine powder, macerated for twenty-four hours in water, gave a solution which passed the filter with difficulty, was of a ruby red, slightly mucilaginous, and bitter; but with a decided astringency. The tincture of turnsol was not reddened, galls and tartarised antimony not precipitated by it, though a copious precipitate appeared on adding a solution of isinglass; and on infusion of the two last species, the sulphat of iron was changed to a light green, which the oxygenated muriatic acid rendered of a dirtier hue. The second infusion no longer precipitated isinglass.

The infusions, evaporated, were digested in warm alcohol, which acquired a very beautiful colour, and when diluted with water, and tried by the reagents employed in the first maceration, produced the same effects; so that the principle on which these depend is soluble in alcohol. The portion, not soluble in alcohol, was of an ochry red, blackened by the access of air, and

was soluble again in water. The solution neither precipitated isinglass nor galls, though it precipitated nitrat of mercury and emetic tartar, and rendered sulphat of iron green. This substance, insoluble in alcohol, yielded, by distillation, ammonia and one twenty-fifth of coal.

A *kind of bark sold without a name*, but with all the characters of the *c. magnifolia*, yielded, however, a solution of a less deep colour, though more bitter and less astringent. This solution sensibly reddened the tincture of turnsol, precipitated neither galls nor tartar emetic, but rendered sulphat of iron green, and precipitated nitrat of mercury. In general, it agreed with the *c. magnifolia*; but a decoction of the residuum did not precipitate tartarised antimony.

The *true pitton bark* resembles in colour, form, and bitter taste, the St. Domingo bark, analysed by M. Fourcroy. The infusion communicated to water the colour of veinous blood. The taste is more bitter and disagreeable than that of others. Tincture of galls, emetic tartar, nitrat of mercury, sulphat of iron, and oxygenated muriatic acid, produced with it copious precipitations. Solutions of isinglass were unchanged. The infusion left, on evaporation, a residuum, which partly dissolved in alcohol, communicating to it a beautiful red: the portion insoluble in alcohol was grey, and appeared like earth. The solution resembled the infusions: the residuum gave out, on distillation, ammonia.

Some specimens of bark brought by Humbolt and Bonpland were next examined. The first was the *cincona of Loxa*, proceeding from branches of two years old, and destined for the repository of the king of Spain. The colour externally is grey; within yellow; in quills, with a bitter and astringent taste. The infusion was of a yellowish red, slightly coloured, with an inconsiderable smell of mould, a bitter taste, precipitating galls, tartar emetic, and acetat of lead of a yellowish white; iron of a blueish green; oxalate of ammonia, white; and solutions of isinglass in large, glutinous, white flocculi. The precipitates formed by isinglass and the antimonial salts were re-dissolved by an excess of the warm infusion. From these qualities M. Vauquelin supposes that it must be a very active medicine.

The *white bark of Santa Fé* is of a rusty yellow externally, and of a deeper colour within. The pieces are flat and thick, with a granulated fracture; the taste neither bitter nor astringent. The infusion is of a deeper yellow than that of the last species, precipitating neither galls, emetic tartar, nor isinglass; but rendering a solution of iron green, and precipitating acetat of lead of a brownish yellow. This is consequently not a species of cincona.

The *orange cincona of Santa Fé* is of the yellow colour of canella, without an epidermis, thick, of a very fibrous fracture. The thinnest pieces are in quills, the thickest flat, without astringency. The infusion is scarcely coloured, the bitter taste decided, precipitating copiously tanin and tartarised antimony of a white colour, rendering a solution of iron slightly green, without injuring the transparency of the infusion of the Loxa bark. We can, therefore, scarcely expect any decided febrifuge virtues from this bark.

The *common bark of Peru* is grey without, and of an ochry red within. The surface is wrinkled; the bark itself in quills of different thickness; the taste bitter and astringent. The infusion is slightly yellow, with a bitter and astringent taste, precipitating tartar emetic, isinglass, and tanin, of a yellowish white, and sulphat of iron green. It reddens the turnsol, and appears to resemble the grey (*superior*) bark.

The *red bark of Santa Fé* seems to resemble that called the Santa Fé bark, without any distinction. It yields an infusion, resembling in colour Malaga wine, with a taste slightly bitter, but astringent, precipitating isinglass of a brown colour; but not emetic tartar, nor tanin; rendering the sulphat of iron green, and slightly reddening the turnsol.

The *yellow bark of Cuenza* was taken from branches of from four to six years old; but it seemed to have been damaged. It was covered with a white moss, of a yellowish brown internally, with a fibrous fracture, and no taste. Its infusion is neither bitter nor astringent, precipitating neither tartarised antimony, isinglass, nor tanin; rendering the sulphat of iron green, and precipitating the acetat of lead.

To elucidate the nature of the principles of the bark, M. Vauquelin next examines some analogous vegetable substances better known. The first of these is the *galls*. The infusion of galls precipitates copiously the solution of isinglass white, iron blue, emetic tartar of a yellowish white, the infusion of yellow cincona in dirty white flocculi, copper of a yellow brown, and lead of a yellowish white, without affecting the infusions of the Santa Fé bark or of tan. Galls appear, therefore, to approach in properties the yellow bark. They differ, however, in their action on tan and iron, as well as in precipitating each other.

The *infusion of tan* precipitated the solution of isinglass yellow, iron blue, copper brown, without affecting the infusion of the Santa Fé bark, or a solution of emetic tartar. It reddens the tincture of turnsol, and is precipitated by the oxalat of ammonia. An essential difference is, therefore, perceivable in its want of influence on the antimonial salt. The *bark of the cherry-tree*, sometimes mixed with the Peruvian bark, has only one common property, viz. precipitating the sulphat of iron green. The *centaury and chamædrys* are exactly similar to the cherry-tree bark.

The *white willow bark* certainly possesses some of the properties of cincona, and precipitates, on infusion, isinglass, sulphat of iron green, and acetat of copper brown; uniting, therefore, the bitter and astringent principles, it is probably a febrifuge.

An infusion of *Angustura bark* does not precipitate isinglass, but throws down a copious precipitate from an infusion of galls and of yellow bark, rendering that of the Santa Fé very slightly turbid. Iron, emetic tartar, copper, lead, and tanin, are all precipitated yellow. Angustura bark, therefore, differs from the Peruvian from its want of astringency, and the principle which occasions the precipitations is not probably the same, as their colour is different.

Those infusions and decoctions which precipitate neither the infusion of tan nor tartarised antimony communicate to water a red colour, often a yellowish, sometimes a brown, red; froth by agitation; are bitter, with more or less astringency. Left to the air in a vessel not quite full they mould rapidly, and are covered with a greenish pellicle; some of these sensibly redden the tincture of turnsol, showing an acid at liberty. Alco-

hol, mixed in the proportion of two parts to one, precipitates a greyish matter, which, on drying, is black. The liquor then becomes clear and of a purer red: these appearances show the presence of a mucous matter.

A small quantity of pure alkali in the acid infusions throws down a red precipitate, approaching the violet; but a larger quantity redissolves the precipitate, adding to the intensity of the colour. When evaporated, the colour becomes deeper; and on cooling after concentration, a brown, very bitter, matter is deposited, dissolved, especially with the assistance of heat, in alcohol, and again precipitated in water, if the solution is sufficiently concentrated. Water itself dissolves this matter, which it has abandoned during the evaporation; but it requires a much larger proportion than when the other principles of the cincona were present, which seem to prove that these principles assist the solution.

If the infusions of bark are allowed to cool frequently before they are reduced to dryness, they deposit, at each cooling, a matter similar to that just spoken of, and this has been supposed to have become insoluble by its union with oxygen; but is really deposited from the want of a sufficient proportion of water. This apparently resinous matter gives the infusions their bitter taste; for if mixed with the same proportion of water, after the separation the degree of bitterness is nearly the same. The whole of this portion is not, however, separated; the other principles ret in a part of it in solution. If, however, these soft extracts are treated with alcohol, so as to separate the "*resiniform*" matter, a brown viscid substance only remains, which is not bitter to the taste, and which dissolves in water, without separating when cold. There are, consequently, in these kinds of bark two distinct substances, one bitter and astringent, soluble in alcohol, and scarcely soluble in water; the other insoluble in alcohol, of a sweet mucilaginous taste, wholly taken up by water.

The former of these substances in a dry state is of a red brown colour, intensely bitter, soluble in part only in cold water, while the other is dispersed in the fluid in the form of reddish flocculi. If heated, however, the latter dissolve also, and the liquor is clear, of a deep brown, turbid on cooling, but leaving only a slight deposit. It is singular that with a small proportion of water this substance dissolves wholly in a clear liquor; it becomes turbid if more water is added, and again clear, with a still larger proportion. It seems, therefore, accompanied with another principle, which, when concentrated, favours its solution; but this substance loses its property by dilution.

This is the matter which renders the decoctions of bark on cooling, and the infusions, evaporated to a certain degree, turbid: authors have styled it the resin. When dissolved in water it grows mouldy in a few days, forming little mushrooms, like a solution of gum, which shows that it is not a true resin; for this never grows mouldy.

The watery solution of this substance recently prepared is coagulated by ammonia, in a whitish, thick, matter which becomes brown in the air, and soon hardens considerably; but it is softened, and rendered ductile by heat, assuming the brilliant silkiness of turpentine, when moulded in the hands. Nearly the same phenomena are produced by mild alkalis; but the acids produce no sensible change. The oxygenated muriatic acid renders it yellow, without occasioning any precipitation; though, if ammonia is then added, a greyish white, light, flocculent deposit is thrown down. Animal jelly does not precipitate it; yet the infusion of these kinds of bark precipitate the solutions of animal glue: the principle which produces this effect is consequently altered by the evaporation. Muriat, or any other salt, of iron produces a deep green colour, and soon afterwards a precipitate of the same shade. Tartar emetic forms no precipitation, so that the substance is not the same which decomposes this metallic salt in some species of barks. It reddens very sensibly the tincture of turnsol.

The acidity of this peculiar principle, and the effects of acids, led to a suspicion, that part of its solubility was owing to a free acid; and the suspicion was confirmed on finding that, when first combined with an alkali, washed and dried, the remainder was scarcely soluble in water. To ascertain this fact, our author put some of this insoluble substance into water, sharpened with different acids, and he found the solubility and the bitter taste restored. A portion of the alkali, however, employed in the precipitation is apparently retained; for, after precipitating the infusion by ammonia, and repeatedly washing it, pure potash produced a very sensible smell of ammonia; an effect which it had not before the precipitation. This matter, then, seems sometimes to act as an alkali, sometimes as an acid, since it unites to both, neutralising a part of their properties. If, after having precipitated this matter by acids, they are added in excess, it is re-dissolved, and the fluid assumes a brown, red colour.

The solubility of this substance in alcohol increases in a peculiar degree by heat. When the menstruum is saturated it has a red brown colour, and a very bitter taste. The addition of water throws down a copious precipitate of a beautiful red, approaching a rose colour. This alcoholic solution exposed to the air in an open vessel crystalises in needles like a salt. The solution thus precipitated by water preserves a portion of the matter, which gives it a rose colour inclining to an orange, and a sensibly bitter taste. It deposits this substance in the form of plates of a red brown, by spontaneous evaporation.

The portion of cincona, insoluble in water, filtered and evaporated, spontaneously in a warm place, thickens like syrup, and crystalises in laminæ, sometimes in hexaedra, sometimes in rhomboids, occasionally in squares, slightly coloured, of a reddish brown. A thick liquor incapable of crystalisation remains, which must be separated by decantation. By successive solutions and crystalisations this salt may be obtained white and pure, in which state its properties will be soon explained. What may be styled the mother water is wholly mucilaginous, yet it contains some of the salt, which will not admit of crystalisation.

The species of cincona of which the author has been treating, though exhausted by water, and even by alcohol, still *furnish somewhat to acids*. They all operate by simple solution, without changing sensibly the nature of the barks. If, however, reduced to a fine powder, and submitted repeatedly to the action of alcohol, assisted by heat, little remains for the acids, since the portion which the latter dissolve is similar to that taken up by the alcohol, as will be soon explained. The nitric acid acquires, by this combination, a red colour, bordering on the rose, sometimes on the orange; but

the shades vary in proportion to the concentration of the acid; for they are of a yellower hue when the concentration is greater. The acid loses a part of its acidity by taking up some lime, which the oxalate of ammonia discovers. If to this nitric solution a saturated, carbonated, alkali be added, a beautiful red precipitate is formed: if the common carbonat is added in excess, the colour of the precipitate passes to a violet and a blue. Thus alkalis turn to a blue those barks which are naturally red.

The metallic solutions form precipitates of different colours, in proportion as the nitric acid contains more or less vegetable matter; but, in saturating the excess of acid, the metallic salts produce copious precipitates, and the liquor is discoloured. Thus muriat of tin produces a rose or a flesh-coloured precipitate; sulphat of iron a grey, of copper a marron brown; sulphat of titanium, assisted with a little carbonat of soda, an orange red, not unlike that produced by galls in solutions of this metal. Alum produces no change; but, with the assistance of a little alkali, throws down the colouring part, and the liquor becomes clear. In the country where these barks grow a solid red marron dye for linen or cotton might be prepared from them, which would become a rose colour by soap.

The sulphuric and muriatic acids dissolve the supposed resin of these barks, and may be saturated with it, like the nitric acid. The colour verges less on the yellow, and is of a more decided red. The precipitates formed by adding alkalis to these combinations are also of a purer red, and an excess of the alkali gives a stronger blue. The residue of these barks appear to contain a large quantity of lime, at least after adding the sulphuric acid much sulphat of lime may be obtained. If it be ever proved that this resiniform substance is the salutary medicinal ingredient, much advantage might be gained by joining acids or wine to the bark. In fact, in infusion and in slight decoctions, little of this matter is obtained, and of that little a part is deposited. It is well known that the salt of bark is not efficacious in fevers, in proportion to the quantity of powder from which it is extracted; which proves that something is left in the mock, the dried residuum, useful in these complaints. It is injurious then in making the essential salt of bark to evaporate the infusion till the resiniform deposition falls down, and to repeat this operation till the fluid remains clear; for a very small proportion of the supposed resin then remains in the water; but the principal ingredients are a gum and a calcareous salt, whose medicinal utility is very doubtful.

Is there any vegetable principle, then, to which this supposed resin can be referred? It is true that various substances have been styled so which have few common properties; but, in strict chemical language, this and many similar substances do not deserve the name. If it resembles resins by solubility in alcohol, it differs by its solubility in water, acids, and alkalis, particularly its property of precipitating metallic salts, and fixing as a dye on stuffs. This substance, then, is a peculiar vegetable principle, whose properties are not yet well known; nor is it, as we have seen, the same in every kind of bark; in those, for instance, which precipitate tanin and emetic tartar, and in those which precipitate isinglass only. The principle on which the bitter taste of vegetables depends is probably very analogous to it.

Recapitulation.—Barks may be divided into three classes from their chemical properties: 1. Those which precipitate tanin and not animal glue; 2. those which precipitate the latter, and not the former; 3. those which precipitate both, as well as tartarised antimony. Every vegetable substance, therefore, which does not possess one of these properties is probably not a cincona; and, in proportion to the greater number or degree of these, the febrifuge effects will be more striking. The property of precipitating tanin is not common to all the species, and on this, therefore, the febrifuge virtue does not depend; but all the more powerful kinds agree in precipitating an infusion of oak bark and of galls. This, however, is not the only febrifuge principle; for some barks have not this property.

The principle which precipitates the infusion of tan and of galls is brown, bitter, less soluble in water than in alcohol, and precipitates also tartarised antimony, but not isinglass. It has some analogy with resins, though it furnishes ammonia by distillation. The precipitations are formed by its union with tan and galls; but yet, as it exists in some species of cincona, which precipitate also isinglass, it is doubtful whether an union really takes place, or whether the principle which in other species of bark precipitates isinglass be truly tanin. One or other of these suppositions must, however, be true, since these infusions precipitate each other. The principle which precipitates isinglass has a bitter and astringent taste, is more soluble in water than that which in the other species precipitates the infusion of tan, is soluble also in alcohol, and does not precipitate emetic tartar. The substance which precipitates tanin seems the same which decomposes the antimonial salt. Much therefore still remains, to ascertain on what principle the cure of fevers by the bark depends.

M. Vauquelin next examines the essential salt of cincona, prepared by the younger Deschamps. It is white in square crystals, sometimes rhomboidal or truncated at the solid angles; the laminæ occasionally unite in groups. The taste is inconsiderable, the salt bends between the teeth, requiring five parts of water at the temperature of 10° of the centigrade thermometer. It swells on burning coals like tartar, which it then resembles in smell, leaving a greyish matter, which effervesces with acids, and appears to be a mixture of carbonat of lime with charcoal. The solution does not change the colour of turnsol, and the salt is wholly insoluble in alcohol. The lime is precipitated pure or carbonated by alkalis in either state; but ammonia produces no decomposition. The sulphuric and oxalic acids throw down, from solutions slightly concentrated, either sulphat or oxalat of lime; but acetat of lead or nitrat of silver produces no apparent change. The concentrated sulphuric acid, poured on the dry powder, renders it blackish; but separates no poignant vapours, as from acetats. It is remarkable that the infusion of tan, and of some kinds of bark, particularly of the Santa Fé species, occasions a yellow, flocculent precipitate from the solution of this salt, so that it appears to be composed of a vegetable acid and lime. When our author endeavoured to separate the acid by the oxalic he found the lime in a very small proportion, and the remaining fluid, evaporated in the open air, was thick like syrup; but produced crystals only after a slight

accidental agitation. These quickly formed a solid mass by the union of numerous laminæ, diverging from different centres of crystalisation. The colour was a light brown, the taste very sour, and slightly bitter, as the acid was not perfectly purified.

This acid is neither deliquescent nor efflorescent, melts readily on burning coals, boils, blackens, and exhales white poignant vapours, leaving a slight coaly residuum, forming, with alkalis and earths, salts both soluble and crystalisable, precipitating neither the nitrats of silver, mercury, nor lead, like the greater number of other vegetable acids. It will be obvious, therefore, that it differs from the other vegetable acids; for the oxalic acid forms an insoluble salt with lime, and decomposes the union of this acid with lime; the citric and tartarous acids form also, with lime, insoluble compounds, and decompose the acetat of lead; the malic acid does not crystalise, and decomposes the saturnine salt; the benzoic acid is scarcely soluble in cold water, and is volatile, without being decomposed; the gallic acid is equally insoluble in cold water, and blackens the solution of iron; and the acetous acid does not crystalise, but rises by heat, without any change. M. Vauquelin, therefore, styles it the *kinic acid*, and this, when united with lime, the physicians at Lyons have found, it is said, such a powerful febrifuge, that no intermittent fever can resist two doses of thirty-six grains each: about a dram of this salt is contained in five or six ounces of the common grey bark. Our author adds some very judicious doubts on this subject, on which we need not fully enlarge. The effects of the infusion and extract of bark prepared by Garaye, he observes, are by no means proportional to the quantity of bark from which they are taken, though they contain this salt; and tinctures which retain no portion of it are powerful febrifuges. Some kinds of bark, with very little of this salt, and vegetables, wholly without it, are found to cure fevers. If it has succeeded, M. Vauquelin suspects that the bitter principle has not been wholly separated.

We must apologise for this long abstract; but we are unwilling to omit a single fact of this very curious specimen of vegetable analysis, especially as foreign works now reach us irregularly, and this paper has only appeared in one journal, not extensively circulated among physicians, viz. Mr. Nicholson's. From this analysis many of the phenomena which attend the pharmaceutical preparations of bark are fully understood, particularly the effects of alkalis and magnesia in heightening the colour; and the mode of preparing the salt of bark is sufficiently obvious.

Page 503, col. 2, line 29, for CORTEX POEGEREBÆ read CORTEX POCGEREBÆ. It was brought from America, and is wholly tasteless. Its pieces are convoluted, sometimes so small as a goose-quill, sometimes an inch in diameter. In thickness they are about a line; hard, weighty, compact, sometimes strait, occasionally distorted. Externally they are wrinkled, sometimes annulated. The epidermis is closely attached, and of a deeper brown than the parenchyma. Some authors think they perceived, on tasting it, a stricture and a kind of aluminous taste on the tongue; in the younger branches, a slight bitterness, though Vogel denies that it has any taste. Materia Medica, 295.

COSTÆ.—Page 504, col. 2, line 4; "*carried on by the diaphragm.*"—Caries of the ribs is not a very uncommon disease, and often owing to aneurisms, sometimes to syphilis; but it requires no peculiar treatment. Severinus recommends the actual cautery. Fractures of the ribs also require no peculiar management, but the proper bandage to secure them from motion, with a cooling regimen and rest. Gooch, in his Observations (Appendix, 55), speaks of their being fractured by a cough, and *it is said* that the same effect has been produced by twisting the body. It requires greater credulity than we possess to believe the tale in the Ephemerides Naturæ Curiosorum, of their being broken by palpitation of the heart. Dyspnœa is sometimes occasioned by an ossification of their articulations. Van Doeveren Specimen Observationum, N°. 13.

COSTUS.—Page 504, col. 2, line 24; "*Alpinea of Linnæus.*"—The bitter costus, according to Garcias, is the root, which has contracted a black colour and bitterness by keeping. The canella is usually sold for it.

COUNTER, a translation, or rather a corruption, of *contra, against*, often employed in surgery as a *counter stroke* or a *counter fissure*, where the effect is perceived on the side opposite to that where the blow was inflicted; and *counter opening*, viz. an opening of an abscess in an opposite, generally a more depending, part.

CRANIUM.—Page 507, col. 2, line 44; "SKULL."—The shape of the skull is spherical, and more so in the infant than the adult, for in the latter the action of the temporal muscles depresses it at the sides. The management in childhood is said to alter the shape of the bones, and this is assigned as the reason why the skulls of Turks are round, of Germans, flattish behind, of the Dutch and English, oblong. It is supposed, that the flatness of the sides enlarges our sphere of vision; but a slight attention to the situation and structure of the eye will soon show the fallacy of the remark. The skulls of ideots are remarkably oblong. Pinel.

The external and internal surfaces of the upper part of the skull are smooth, but the back part externally has numerous risings and depressions; indeed, internally, the arteries occasion deep furrows, and occasionally pits, which the surgeon must guard against in the operation for the trepan: the arteries from the dura mater seem sometimes to pass into the cranium. The cranium consists of two plates, between which, in general, cancellæ are interposed, as in the long bones: the inner plate is the thinnest, and, in some parts, the cancellæ, (*diploe*) are wanting: particularly in the temporal bones.

The diploe is sometimes the seat of abscesses, but a caries and exostosis generally begin in the hardest parts. Tumours in the head have often no connection with the cranium, and are frequently wens or steatomata. These sometimes, apparently from their pressure, destroy the bones, and occasion apoplectic symptoms by compressing the brain. Tumours are occasionally supposed to occur in the head when the shape of the cranium is

defective; and in these cases the apparent tumour, on one side, is accompanied by a proportional depression on the other. When the skull is slightly depressed by a blow, and no apoplectic symptoms follow, the best surgeons usually trust the case to nature. It is sometimes relieved spontaneously, but if considerable the trepan must be applied, and the depressed portion raised. Petit, in the Memoirs of the Academy of Surgeons (i. 302. ii. 157), has described a new and more convenient instrument for elevating depressed portions of the cranium.

CRINONES.—Page 510, col. 2, line 47; "*after which she recovered.*"—The term, in English authors, is more commonly applied to the little pustules in the face, in the middle of which a black spot, the supposed head of a worm, is observable.

CRITHMUM.—Page 511, col. 2, line 63, add, *crithmum maritimum* Lin. Sp. Pl. 354.

CRUCIFORMIS.—Page 513, col. 2, line 35; "*in a particular state.*"—The explanation is imperfect. The term is derived from the disposition of the petals, which are four, arranged in opposite directions, and consequently forming an imaginary cross. Such plants constitute a very natural order, styled *cruciform* by Tournefort, and chiefly found among the tetradynamiæ of Linnæus.

CRUOR.—Page 513, col. 2, line 52; "*occasionally the venal only.*"—The word is most commonly applied to the crassamentum, which in its coagulation entangles the red globules.

CUBEBÆ.—Page 516, col. 2, line 37; "*with a slender stalk.*"—Camelli, Philosophical Transactions, 1773. Cubebs, when broken, are found to contain a kernel much smaller than the shell, which is thin and brittle. The epidermis of the nucleus is brown, the parenchyma white, somewhat oily, and much warmer than the shell. Each part unites, with a considerable pungency, a bitterness, and renders the breath fragrant. Cubebs are seldom attacked by worms. They are supposed to be the cubebs of the Arabians, the Κουβεβα of Actuarius; but this is doubted: the arguments are, however, fairly detailed in Wedelius's Dissertation de Cubebis. The oil does not contain their virtues, as asserted in the article; for it is mild, resembling the oil of almonds (Baumè Elemens de Pharmacie, ii. 41); but the acrimony is taken up by water, more completely by spirit. They are employed in cases of dyspepsia, particularly where the stomach is loaded with mucus, and, in some parts of the continent, are covered with sugar, in the form of confects.

CUBOIDES OS.—Page 517, col. 1, line 32; "*scarcely begun at birth.*"—This bone, behind, is formed into a long unequal concavity, adapted to the shape of the os calcis. On its internal side it joins the navicular bone by a small semicircular notch, and immediately before this an oblong smooth plane is made by the external cuneiform bone. Below it is hollow and rough. On the internal side of the lower surface are a round protuberance and a fossa; on the external side, a round knob, covered with cartilage, immediately before which is a smooth fossa, apparently formed by the tendon of the peronæus primus, where it runs obliquely across the foot; and on the knob the thin flat cartilage peculiar to this muscle rests. More externally than the knob, the strong ligaments between this bone and the os calcis are stretched in a rough hollow. The surface of the os cuboides anteriorly is flat, smooth, and slightly divided into two planes for sustaining two of the metatarsal bones. It has little motion, as it is so closely tied down by ligaments.

CUCUMIS AGRESTIS.—Page 517, col. 2, line 34; "*more active than the leaves.*"—The root contains all the virtues of the plant in a superior degree, and is an active emetic, as well as a powerful purgative. Indeed all the drastic purgatives act so violently on the stomach, as often to disappoint our expectations of the discharge by stool. Avicenna advises fifteen grains of the root; but Fallopius recommends a dram. In smaller doses it is considered as an active deobstruent, particularly in infarctions of the viscera. Externally it is said to be discutient, and in a cataplasm to relieve œdematous swellings; united with vinegar, to mitigate the pains of the gout, and with water those of sciatica. When powdered, it is recommended by Dioscorides as useful in chronic exanthemata, rubbed on the pustules.

The elaterium in a perfect state, according to Dioscorides, should be white, with a slight moisture, light, extremely bitter, easily burning on the approach of a candle. If porraceous, it is not good. Different modern chemists have followed the directions of Dioscorides without success; for it is generally green, and most frequently porraceous. In the foreign pharmacopœias the juice of the fruit is prepared by inspissation, sometimes the juice of the whole plant. Boulduc prepares the elaterium from the root by means of water; and it is, in fact, a watery extract, more mild than the common elaterium, but equally useful, and more manageable. What we generally meet with in the shops is blackish, brittle, intensely bitter, and subacrid. The dose varies; but in general from two to five grains are given.

CUCURUCU, an American serpent, whose bite is poisonous; but whose flesh is rich, and esteemed a great delicacy.

CULEX, A GNAT; an insect of the dipterous order, of the family of the *tipulariæ* of La Treille. Its characters are, setaceous antennæ, pectinated or plumous, of the length of the thorax; a trunk elongated or cylindrical, receiving, in a canal above, a sucker composed of very small pieces, and terminated by an enlarged diameter; two filiform antennulæ, elongated, inserted at the lateral base of the trunk, with four joints, of which the first are very short. The body is long, the head low, small, round, almost wholly occupied by the eyes; the thorax convex; the wings horizontal, lying down, covered with small scales; the balancers long; the abdomen long and cylindrical; the feet very long and thin, with very small cushions.

Gnats are known by their unpleasant buzzing, and by their sharp bites. Every country is more or less in-

fested by them, particularly the low marshy districts. In America, and the American islands, they are peculiarly troublesome, and are called mosquitos: in Sweden and Lapland, during the summer, the inhabitants can only guard against their bites by smearing their faces with grease. They wound with the trunk, and draw the blood by means of the instrument we have called the sucker, which they have the power of exhausting. The trunk with a lens appears to be barbed. Though the wound be slight, the inconvenience is considerable; for a poisonous fluid is introduced, it is said, to dilute or to dissolve the blood, that it may pass more freely through the sucker: some persons, though their skin be delicate, are not attacked by them. When they can find no animal to fix on, they suck the juices of plants, particularly the willow. They generally hide themselves in the day, and come out in the evening. Fire, at night, soon disperses them.

Various remedies are employed for their bites, as the fixed and volatile alkalis, brandy, lavender water, vinegar, lime, or lemon juice, and Venice treacle, mixed with sweet oil. Some apply the leaves of the green willow bruised, to the juice of which they add vinegar and common salt: others prefer the leaves of plantain. The European species is the *culex pipiens* Linnæi.

CULILTLAWAN.—Page 519, col. 2, line 16; "CULILTLAWAN."—This term, originally given by Rumphius, has been softened down to culilawan, and it is taken from the genus *laurus*, with the same trivial appellation, described by Linnæus in his second Mantissa, 237; *laurus culilaban* of Wildenow, vol. ii. page 478. We have here resumed the subject, as in the article referred to the account is too short and unsatisfactory.

The term is Malayan, signifying the clove bark, from its smell. Its appearance differs with the country which produces it. In the Molucca islands it is browner than at Amboyna. The latter is also much thinner, harder, and of a more pleasant taste. The pieces are generally convexo-plane, about a line in thickness, of a yellowish-red colour, with some remains of a grey epidermis, wrinkled, smooth within, and moderately hard. The taste is aromatic, not much unlike the Winter's bark; but more mild, mixed with an astringent and mucilaginous sensation. The smell is that of sassafras mixed with that of the cassia caryophyllata. The bark of the root resembles in taste and virtues the lignum sassafræ. Its distilled water is milky, of an acrid, aromatic, and bitterish taste, on which a thin, limpid, yellow oil swims, which is in so small a quantity that half a pound of the bark scarcely furnishes thirty drops. This also is acrid and aromatic, of a smell between that of cloves and sassafras (Cartheuser). Rumphius compares it to a mixture of cloves and nutmegs; Valentyn to the oil of cloves. From an ounce of the bark fifty grains of a spirituous extract were procured, in taste and smell resembling cloves. The quantity of the watery extract was somewhat less, resembling cloves in smell; but to the taste bitterish, and slightly aromatic. Each extract was mucilaginous; but the younger bark was most so.

It is used in the east as a condiment, to amend the breath, and to strengthen the stomach. We can scarcely distinguish its effects from those of other aromatics; but, in Amboyna, five or six drops of the oil are given in suppression of urine; and it is used externally in luxations, contusions, in palsy, and in gout. The oil of cœlilaban has been confounded with this procured from the laurus culilawan; but we are expressly told, that the former is procured from the roots of the nutmeg and clove trees. It is probably an imitation of the true oil.

CUPRESSUS.—Page 522, col. 2, line 37; "*oleum cyprinum*."—The galbuli and leaves were formerly used as astringents (Ray Historia Plantarum, tom. i. ii. 282, and 1407); the nuts in intermittents. The wood is pale or reddish, undulated, of an agreeable smell, but without taste, except a flavour somewhat resinous. The bark is more decidedly astringent, with a bitterness, and in warmer countries turpentine can be drawn from it. It is used for chests, as worms do not eat it, and for coffins, as it resists putrefaction.

CURCUMA.—Page 524, col. 1, line 57; "*lively yellow tending to red*."—The tubera are oval, annulated, and brown, of the size of a pullet's egg, from which processes three or four inches long, of a pale yellow, also annulated, are derived. The root in part consists of thick, long fibres, some of which terminate in a sharp point, some in a knot, resembling in form an olive. All the fibrous part is rejected. The root itself is of a pale yellow colour, wrinkled, solid, heavy, of a deep saffron or orange colour. Its smell is somewhat fragrant, its taste bitter, slightly acrid, exciting a sense of warmth in the mouth. It is softened by chewing, and tinges the spittle yellow. The infusion is of a saffron colour, which by alkalis is changed to a chestnut. As its yellow hue is, by means of starch, imparted to paper, it becomes an useful test of alkalis. Acids render the yellow paler. The spirituous tincture is of an elegant red, though it imparts to the fingers a saffron hue. The essential oil is in so small a proportion that Buchner obtained from half a pound only a dram; others even a less quantity. The watery extract is mildly aromatic, bitter, and salt; but it amounted only to one-fourth of the root employed. Neumann obtained a less proportion. The spirituous extract was equally variable in quantity; in general less, and its taste nauseous, and acridly aromatic.

In India the curcuma is chiefly used as a dye, both for the linen and the skin, and as a condiment; the Chinese employ it as an errhine. It enters the circulating system; for the urine is tinged of a yellow colour. In jaundice, as we have said, it has been highly celebrated, though Coe speaks of it slightly, and found no advantage derived from the dose of a dram, repeated three times a day. It is said to be also lithontriptic, to cure dropsies and intermittents.

CUSCUTA.—Page 524, col. 2, line 45; "DEVIL'S GUTS."—It chiefly grows on the linum usitatissimum urtica dioica, trifolium pratense, &c. The *cuscuta epithymum*, the var. β. is separated from the *c. Europæa* in the Systema Vegetabilum, and constitutes another species. It is chiefly found on thyme, whence its name is derived; but it adheres also to the origanum, siderites, erica, &c. The latter seems to be the *epithymum* of the ancients. Each is acrid or mucilaginous, according to the plant which has nourished it. Haller compares the

dodders to the sedum, and supposes them resolvent in consequence of a nitrous saponaceous power. They have been recommended in hypochondriasis, melancholy, dyspnœa, intermittents, &c.; chiefly from the fancied theory of resolving lentor and pituita, or purging black bile.

CUTICULA.—Page 527, col. 2, line 2; "*putrefaction to take place.*"—The openings of the cuticle, which suffer the more insensible perspiration to escape, and even the fluid sweat, still deny a passage to the fluid poured out by the action of blisters. This apparently arises from some of the gluten being effused in their operation; for milder stimulants applied to the skin produce a more fluid discharge, which readily escapes. This we find on the application of warm plasters, where the exuded fluid throws them off. The origin of the scarf skin has been a subject of dispute. It is said to be an exudation, thickened by the air and by pressure; but it exists in the fœtus. Others suppose it to be an expansion of the extreme vessels, or the nervous papillæ; but this idea is opposed by its insensibility. It is evidently inorganic, and not a primordial part, as it is so frequently and extensively reproduced. In the fœtus it may be in part a deposition from the liquor amnii; in the infant, the hardened discharge from the mucous glands. We find some instances in Bartholine and Deckers of its deficiency, though the circumstances are not clearly explained. We are informed by Albinus (Annotationes Academicæ, i. 19) from Saviard, that the separation of the cuticle is not always a mark of the death of a fœtus.

The cuticle sometimes desquamates, or separates in scales; and when this separation takes place in any considerable degree the nails accompany it. After malignant fevers, scarlatina, and gout, this has happened; sometimes from terror, from the bite of a viper, and from arsenic. The scaly skin is a species of lepra. A singular instance of the disease occurs in one of the early volumes of the Philosophical Transactions; and Vater, in a separate dissertation, has described the appearance of a boy of fifteen, "whose skin resembled that of a rhinoceros, or the bark of a tree." See CUTANEI MORBI.

CUTIS.—Page 528, col. 1, line 1; "*the organs of touch*"—The papillæ differ much in figure and disposition, according to the different parts of the body on which they are observed. The greater number is flat, differing in their breadth, divided by sulci in the form of irregular lozenges. Those of the palm, the fingers, and toes are higher, smaller, and more closely united than in other parts, representing straight, crooked, or spiral lines. In the lips the villi are closely united; under the nails they are conical, and the points directed to the extremity; in the hairy scalp and scrotum they still differ; but the whole description would be endless and useless.

In inflammations, and minute injections, fine vessels are apparently spread on the surface of the skin, called by Mr. Cruickshanks *cuticula quarta*; but these are raised above the membrane, in which they are placed by the unusual distension. The various folds of the skin in different parts are not of sufficient importance to detain us. Many of these depend on the action of the muscles rather than the state of the skin, and are rendered permanent by the frequency of that action. From hence arise those traces of character in the face which so essentially assist the physiognomist. See PHYSIOGNOMIA.

CYANUS ORIENTALIS MAJOR MOSCHATUS.—Page 528, col. 1, line 38; "1286, α."—It is the *centaurea cyanus* Lin. Sp. Pl. 1298. The spirituous extract is slightly austere and saline; the watery more decidedly saline. The whole plant is said to be diuretic, and the infusion or expressed juice to be useful in inflammation or weakness of the eyes.

CYNOGLOSSUM MAJUS VULGARE; CANINA LINGUA.—Page 529, col. 2, line 63; "*adversus pediculos.*"—It is anodyne, and in the spring highly narcotic. From the resemblance of its early leaves to those of comfrey the worst consequences have arisen (Morison and Haller). The root is large, branched, succulent, externally brown or black, internally white. In moist places it has a virose smell, and in dry ones is almost without any odour. The smell is always transitory, and does not remain either in the watery or spirituous extract. In the recent state it is, therefore, probably dangerous; in any other useless, or merely mucilaginous; and in the latter view it seems to have been employed in coughs, hæmorrhages, and diarrhœas. Ray informs us that in decoction, and externally applied, it has been useful in scrofula (Historia Plantarum, 490); and Scopoli that it has been beneficial as a demulcent in dysentery (Flora Carniol. 440). The leaves have been equally useful in infusion as a demulcent in coughs. Scopoli.

CYNOSBATOS.—Page 530, col. 1, line 42; "*certainty of its power.*"—The *bedeguar* is a rough excrescence, about the size of a walnut, of a reddish-green colour, oblong or roundish, containing many cells, in which an insect, the *cynips rosæ*, has deposited its eggs. The situation of this excrescence on different parts of the plant, and even on the fruit, prevents any explanation of its origin. This substance has, however, been given in hydrophobia, epilepsy, calculus, and many other diseases, probably with equal success.

D.

DACTYLUS PALMULA.—Page 533, col. 1, line 43; "*food in Africa.*"—The date tree is celebrated for the chief support which the artificial impregnation of its female blossoms afforded to the sexual system, and which may probably have suggested it. It is a native of Asia, seemingly conveyed to Egypt, and found also in Africa, &c., but chiefly in the warmest climates. The date tree, like the cocoa-nut, supplies all the wants of the inhabitants of the tropics, and the riches of the possessor are estimated by their number: one farm often contains from three to four thousand. Independent of the fruit, the buds from the axillæ of the leaves, particularly their bases, and the upper convoluted tender leaves, the primordia of the spadix, are either eaten raw or boiled with animal food.

The fruit is an oblong drupa of the size of a plum:

when fresh the flesh is reddish, soft, pellucid, and very sweet. They are gathered sometime before the period of their maturity, while yet acerb, and ripened in the sun. The seed is hard and stony, approaching a cylindrical shape, loosely covered with a pellucid epidermis, oblong, wrinkled, white, the apex compressed, marked on one side with a longitudinal furrow, on the other with an orbiculated hilum in the middle of the back. They differ greatly in colour and flavour, according to their soil and mode of drying: those brought to Europe are chiefly from Barbary. Through vast tracts the natives use no other food, and they are well adapted to the climate, by their cooling, antiseptic properties. The best kinds yield, by a slight pressure, a syrup, which is used in their dishes instead of butter. When fermented they yield a pleasant vinous liquor, and the unripe ones are eaten by camels. In a medical view they are refrigerant and demulcent. In strangury, cough, and hoarseness, they are generally employed internally, and externally in promoting suppuration. Kempfer tells us that they are moderately astringent; but he probably speaks of the unripe dates. They still remain as ingredients in the different formulæ of the Wirtemberg and Paris Dispensatories.

DAUCUS CRETICUS.—Page 533, col. 1, line 65; "*foul and offensive.*"—Carrots have gained credit as medicines from their supposed saponaceous quality; and Aretæus long since recommended them in elephantiasis. Lobb seems to think that they had some power in dissolving the stone, and Rosenstein recommends them in the ascarides of children, eaten on an empty stomach. The seed is roundish, grey, rough, with serrated alæ, aromatic and fragrant, containing a small quantity of essential oil. Its diuretic power was first noticed by Aretæus.

DEBILITAS, (from *debilis, weak*). WEAKNESS. Debility is a term often employed in medicine with little discrimination. It will be obvious that it is sometimes general, at others local; and we constantly see a weak arm, or a defective digestion, with health otherwise unimpaired. But even general debility admits of various modifications, or perhaps rather some kinds of local debility from sympathy appear general. In cases of chlorosis or amœnorrhæa there appears to be a peculiar debility of the extreme vessels communicated to the stomach and to the brain: in fever there is a debility of the sensorial power, from which the stomach and circulation seem to suffer, though in the latter case the debility is soon general from the extensive influence of the functions of the brain. After apoplectic attacks the debility is general in the whole system; but peculiarly felt in the voluntary muscles, and not particularly in the sensorial power; for the circulation is carried on at least equably, if not freely. From the depressing passions, from plethora, and fatigue, the debility is also general, and the sensorial power suffers more than in apoplexy; for evening paroxysms of fever are often produced, and the body is very susceptible of fever from infection, cold, or any irregularities of diet. The debility from poisons introduced, as from lues or cancer, from impending lepra, infarctions of the viscera, as of the liver, &c. appears of a different kind. It seems to undermine the vital power; but does not produce any very striking effect on any one function, except that of nutrition. The debility from hectic paroxysms is still different, and appears not to influence the mental energy, except in a few instances; but chiefly the sensorial power, and the circulation in the extreme vessels. We have thought that we could distinguish these different kinds of debility by the sight, and have brought the suspicion to the test of experience, by forming an opinion of the disease from the appearance of the patient, before hearing the case. It is not surprising that we should have been oftener right than in error, since many of the diseases mentioned, arising from these different species of debility, are sufficiently obvious. Yet in equivocal cases we have been, we think, often able to correct misinformation from the exercise of this faculty, and we would strongly recommend its constant exertion to the younger practitioner. He must be cautious, however, not to trust to it too confidently. These distinctions, though forming only the outline of what might be adduced on the subject, will frequently correct confusion, and obviate many difficulties. Had they occurred to Dr. Brown, much of the confusion, and we may add much of the mischief, which have arisen from the application of his system to practice would have been avoided.

The cure of debility must depend, therefore, on its cause; but in every instance a free open air, regular exercise, an appropriated diet, early hours, and a due regulation of what are styled the non-naturals, is of much greater importance than tonics.

DECUBITUS, (from *decumbo, to lie down*). The position of a patient in bed is often of considerable importance in judging of his disease. It is noticed in the articles FEBRIS and PROGNOSTICA, q. v. A problem of much more difficult solution occurs in diseases of the chest, viz. whether the patient can lie best on the affected or on the opposite side. This has been considered in the articles PERIPNEUMONIA and PHTHISIS: we wish we could add that the problem had been solved. See Baglivi Praxis Medica, i. 9; Boneti Sepulchretum, lib iv. vii. 2, 3, and 5; Keller Dissertatio cur plures Ægroti in alterum latus Decumbere nequeant.

DEGLUTITIO.—Page 536, col. 1, line 24; "*neighbouring parts.*"—These obstacles are not only every variety of substances incautiously swallowed, but abscesses and calculi formed in the canal, or the muscular structure destroyed by a cartilaginous hardness. A dilatation of the œsophagus has produced a similar effect (Burserii Institutiones Medico-practicæ, iv. 292); and a curious instance is mentioned by Lieutaud (Historia Anatomico Medica, ii. 313) of a double œsophagus, producing difficult deglutition. Polypous, steatomatous, cancerous, or schirrous tumours, a dryness of the glands (Morgagni de Sedibus, xviii. 14), ossifications of the canal, perforations into the lungs, or produced by ulcers of the latter organ, excessive sensibility of the œsophagus from previous inflammation, an union of the sides, or a rupture of this part, have destroyed its functions. The diseases of the neighbouring organs, which equally induce the disease, are aneurisms of the aorta, or the carotid artery, a luxation of the os hyoidis, excrescences, or a destruction of the palate (Morgagni, l. c. xlviii. 60), diseases of the lungs, or of the epiglottis, tumours be-

tween the œsophagus and the aspera arteria, and scrofulous swellings in the neighbourhood of the canal. Such are the associated motions between the stomach and œsophagus, that whatever disturbs the action of the former prevents that of the latter; so that when from injured organisation, or any other cause, digestion is impaired or destroyed, swallowing is proportionally impeded. Among the causes of debility we have not mentioned narcotics, which may, however, primarily act on the stomach. We find the stramonium, tobacco and coffee in excess, considered as causes of difficult deglution. Dr. Dobson (Medical Observations and Inquiries, vi.) mentions its arising from suppressed salivation, and Morgagni has recorded a case in which it was a symptom of hydrothorax. De Sedibus, xxiii. 4.

Among the remedies we have omitted the hemlock, which has certainly been sometimes found useful, and the friction with mercurial ointment is probably more generally successful than we have in the article represented it. Cupping-glasses, leeches, and blisters, have sometimes relieved; but it is singular that the first have been applied to the stomach, and the last to the coronal suture. In the Edinburgh Medical Commentaries we find a case where the disease arose from spasm, in which the cuprum ammoniacale was singularly useful; and as it frequently arises from scrofulous tumours, the burnt sponge and salt water have been recommended.

DELIRIUM.—Page 539, col. 1, line 62; "*of which it is a symptom.*"—The causes are either those producing partial excess of excitement or its opposite state. Thus we find it arise from injuries on the brain, producing inflammation, from fever, repelled eruptions, or the checking of accustomed evacuations, and from pregnancy. The opposite causes are, grief, disappointment, hunger, narcotic poisons of every kind, particularly excess of drinking. Indigestion and disorders of the stomach are generally of the same kind, and effusions of water and other fluids on the brain belong also to the depressing powers. We hear of delirium being periodical or epidemic; but in these cases we suspect the source has been fever. The cure must depend on the causes; and when these are ascertained, they will lead to the different articles in which the remedies are described.

DEPURATIO.—Page 545, col. 2, line 14; "*the fluid to be depurated is hot.*"—Of these operations clarification is most commonly necessary in medicine, and a process of no little difficulty, as the feculæ are nearly of the same specific gravity as the fluid; and the mucilage, which vegetable expressed juices necessarily contain, is an additional obstacle to the separation. For this reason, vinous fermentation, which destroys the saccharine mucilage, so completely depurates the juice of the grape and the infusion of malt. The coagulating fluids are albuminous and gelatinous, which should be previously mixed with the turbid fluid, and, on the application of heat, the coagulation takes place. The alcohol of vinous fluids produces the same effects without heat. M. Parmentier (Annales de Chimie, xxxix.) mentions the effects of marl in clarifying the latter. A handful of marl will, it is said, clarify a whole cistern of water. Heat alone will clarify many expressed juices, particularly that of cabbages. When the virtue resides in the fecula clarification is injurious.

DIABETES.—Page 547, col. 1, line 51; "*without being uncommonly copious.*"—This peculiar disease of the urine has been understood only within these thirty years. It was suspected by Willis, and mentioned, after him, by other authors; but the real nature of the discharge was only ascertained by a French chemist in 1778, and more clearly established by Franck in 1791. The labours of our countrymen, Dr. Rollo and Mr. Cruickshanks, were followed by those of MM Nicholas and Quendville, at Caen, in 1803; and we shall now add a mere abstract of a memoir on this subject, by MM. Dupuytren and Thenard, published since this article was printed, and shortly noticed in the article MELLITUS. The latest inquiries had before ascertained that the urine of diabetic persons contained no sensible proportion of urea or uric acid; that the most delicate reagents scarcely showed any traces of phosphoric or sulphuric salts; that no free acid was found, but only sugar, and different proportions of marine salt.

The first part of the memoir contains observations on the diabetic patient, whose urine they examined. All their conclusions we shall not transcribe; but they think the seat of the complaint to be in the kidneys, not in any part of the intestinal canal, and to consist in a "*perversion*" and "*exaltation*" of the action of these organs. We would translate these words if any precise meaning could be affixed to them. The reasons for this conclusion are, that the appetite and the digestion are not injured. The latter, in particular, is more rapid, and a larger proportion of aliment is absorbed; for the fæces are comparatively small in quantity. The authors also remark, that, from the excessive discharges, a considerable absorption probably takes place from the surface to supply the wants, and that the only disease is too great action of the digestive and urinary organs. They found the plan of Dr. Rollo very successful.

They next offer the analysis of the urine of their diabetic patient. It contained no animal, and scarcely any saline, matter; almost wholly consisting of vegetable principles, and chiefly of a principle slightly saccharine. It possessed, however, all the properties of sugar; for it is changed to alcohol and carbonic acid by fermentation, affording much oxalic, and no mucous, acid by the addition of the nitric. The extract is scarcely soluble in alcohol at 36°; and produces, on calcination, a small proportion of oil, much water and carbonic acid. There are consequently many varieties of sugar, and we have shown that MANNA, q. v., contains only a small proportion of it, which may be destroyed by fermentation; while its chief constituent part is mild to the taste, does not ferment with leaven, yields the mucous, by the addition of the nitric, acid, is more soluble in hot than in cold water. Heat assists its solution in alcohol so powerfully, that on cooling it forms a crystaline mass. When an animalised diet was given to their diabetic patient, the changes were rapid. They first found an albuminous substance in the urine, the precursor of its proper state, which gradually increased. When this lessened, the kidneys secreted the urea and the uric acid, probably also the acetous.

We do not find in their memoir any striking advances in the knowledge of this disease. We have frequently

observed in this work, though it is not sufficiently insisted on in the article, that the assimilation of our food, rather than its digestion, constitutes the real disorder; and that the chyle, instead of becoming blood, is carried off as a foreign excrementitious fluid. What we have also observed in different articles we shall repeat, to elucidate more fully our opinion of the nature of the disease. The distinguishing character of animal substances is azote, and the supply of this azote is a problem of some difficulty, unless furnished by the liver, or from the air in respiration. (See JECUR and RESPIRATIO.) Azote is, however, apparently necessary for animalisation, and in this disease seems wanting. It is supplied by a diet purely animal, and by the hepatised ammonia; but in this country, where animal food is so common, the disease is comparatively rare, and the changes, from an alteration of diet, by no means so rapid as represented by the French chemists. M. Place, in a dissertation published at Gottingen in 1754, has attributed the disease to a defect of assimilation.

We have accidentally omitted the remedies for the *diabetis insipidus*, as well as some of its causes. Authors have with reason attributed it to the abuse of diuretics, chiefly of cartharides and juniper berries, though the whole class have been occasionally accused. It sometimes arises from gout, from riding, suppressed discharges, organic diseases of the kidneys, as ossified arteries (Gooch), abscess (Ruysch), and worms (Duretus); spasm as in hysteria, the retrograde action of the absorbents (Darwin). The chief remedies are astringents, tonics, and stimulants. The terra japonica, gum kino, and alum, are the chief of the first class; bark and steel of the second; cantharides and balsam of capivi of the third. The Bristol waters are recommended by Dr. Brocklesby, lime water by Fothergill, emetics by Wintringham.

DIAPHRAGMA.—Page 556, col. 1, line 25; "*enlarging the cavity of the thorax.*"—Through the crura of the lesser muscle the thoracic duct, as well as the aorta, pass; and on the outside of these the great sympathetic nerves, with the branches of the vena azygos, perforate the short heads. The diaphragm is assisted in its action by the intercostals, and in cases which demand an increased action of muscles which assist respiration by the serrati antici majores and postici superiores, as well as the scaleni. When, on the relaxation of the diaphragm, the elastic contents of the abdomen rise into its concavity, the sterno costalis and postici inferiores pull down the ribs; an action aided by the elasticity of their cartilages. In laborious expiration the quadrati lumborum, sacro-lumbales, and longissimi dorsi, concur.

The hint in the article, that the diaphragm has more important uses in the constitution than as yet are clearly understood, was taken from an author of character and reputation. It has led us in this revisal to examine its diseases with peculiar care; but we cannot find any extensive influence of this part on the stomach, the brain, or the extreme vessels. It is a muscle interspersed with tendinous substance, to afford a more ready contraction, as in the hollow muscles the fibres are not continued all around; but inserted into tendinous lines, or connected with each other. It has been wounded, torn, its apertures enlarged, so as either by laceration or dilatation to admit of the passage of the stomach, or a part of the colon into the thorax, without any uncommon symptoms; and the delirium and the spasms, supposed to be peculiar to its inflammation, we do not find enumerated among the consequences in the most respectable authors. In two strongly-marked cases, which have occurred to us, they were not present.

DIAPYESIS. An abscess in the eye, producing blindness. Sauvegesii Nosologia.

DICTAMNUS ALBUS.—Page 560, col. 2, line 23; "*about the size of a quill, are the best.*"—The root is thick, branched, externally of a pale yellow, internally white, of a hircine odour, and an aromatic, bitterish taste. The thick, spongy, cortical part is only kept, as the ligneous is inert, and from this cause it appears rolled, like a quill. The dry root is bitter and slightly aromatic. The spirituous extract is most bitter; but in the smallest quantity. The tincture mentioned in the article has been given, it is said, with success in epilepsy; and the root forms a part of a very useless farrago for the same purpose, "pulvis ad guttetam" of the Wirtemberg Pharmacopœia.

The whole plant exhales a fragrant bituminous odour, owing to its essential oil, which is contained in vesicles in the surface of the extreme branches, and the internal parts of the flower. This vapour takes fire on the approach of a candle. The resin collected from the flowers, not yet expanded, is said to be a powerful diuretic; but the capsules, disposed like stars, are supposed to be more efficacious in this respect.

DIGITALIS.—Page 565, col. 2, line 60; "*with little melioration.*"—Since this article was written numerous publications have announced the happy effects of digitalis, particularly in hydrothorax, and other dropsies, while many authors have confessed their diappointment at its failure. Whether owing to our timidity in the dose, or to the cases not being properly adapted to the remedy, we have not been among the fortunate practitioners who have succeeded with this medicine, and consequently can only report the success of others. A late author, Dr. Sanders, has endeavoured to show that the digitalis is a stimulant. This is a verbal dispute, worthy only of the disputing societies in the schools. We know that it makes the pulse often fuller, and apparently stronger; but it has this effect in common with every other narcotic, in consequence of its relaxing the arterial system, while the diminished frequency of the pulse is owing to the diminution of the irritability. When given in large doses it excites a discharge of saliva, produces vomiting, with very considerable anxiety, heart-burn, hiccough, great coldness in the hands and feet. Given to turkeys it produced bloody discharges, with emaciation and death. These are not the effects of stimulants, and we have no instance, though so often asserted, of a medicine being stimulant at first, and sedative in its subsequent operation. We have repeatedly shown that this apparent stimulus is unequal excitement. In scrofula, it has been given internally with advantage (Haller Historia Stirpium Helveticarum, 330). The decoction has been preferred; sometimes the expressed juice in warm beer.

DIGITUS.—Page 566, col. 1, line 37; "*are convex, within flat.*"—All the bones of the fingers have round, convex surfaces, covered with an aponeurosis, formed by the tendons of the extensors, lumbricales, and interossei, and placed directly backward for greater strength. The concavity in front is designed for lodging the tendons of the flexor muscles, or formed by them. The ligaments for keeping down the tendons are fixed to the angles between the convex and concave sides. The bones of the first phalanx answer to the second bone of the thumb; but the cavity of the base is less oblong, and the motion less confined: they move laterally and circularly, though with very inconsiderable rotation, round their axis.

The base of the second bone of the fingers is formed into two lateral cavities, and a middle protuberance, and the lower end has two lateral protuberances and a middle cavity. It is joined, therefore, in the same manner at both ends, which is not the case with the bones of the thumb. The third bone differs only from the bones of the thumb in the general distinguishing marks. The upper end of the third phalanx is a cartilage in a grown child, afterwards an epiphysis, and not completely united till the body is fully grown. The bones of the middle finger are longest and largest: those of the fore-finger are next in thickness, but not in length: the little finger has the smallest bones.

The first bone of the thumb resembles the metacarpal bone in size and strength, but differs in being set on the carpus with a large round head, in being separated from the line of the other fingers standing out on one side, and, as we have said, opposed to them. It rolls freely and widely, as the joint is a ball and socket.

DIPLOE.—Page 567, col. 1, line 57; "*bones of the skull.*"—It is rather the cavity filled with cancelli, like the large ends of the round bones. See CRANIUM, and the same article in the Appendix.

DIPLOPIA.—Page 567, col. 2, line 7; "*So long as the object,* &c." to "*and therefore double,*" line 18.—Instead of this erroneous representation of the subject, which has inadvertently crept in, read, It arises from the different direction of the *two optic axes;* for the image falling on corresponding points of each retina conveys, from experience, the idea of a single one. (See OCULUS.) It sometimes arises from an altered situation of the pupil, either from a blow or an operation, sometimes from a change in the situation of the lens, frequently from spasm, often from fulness. Morgagni describes a case of this disease from a slight paralysis of the abductor muscle of the eye (De Sedibus, &c. xiii. 20), and, when it arises from fulness, a partial palsy of some of these muscles may be suspected. Vater mentions a variety of diplopia where only one half of the second object was seen; and this probably may be the complaint described by Lentin, quoted as a case of visus sesqui-duplicatus; but the work we have not been able to procure. Mr. Gooch recommends mercury, valerian, and sulphur. When it arises from spasm these medicines may be useful; but when from fulness, from abscess in the brain, or beginning hydrocephalus, they will have but little effect. It is chiefly the object of our practice when it arises from fulness, and in that case general and topical evacuations, proportioned to the constitution of the patient, and the indications from other sources, will be alone sufficient. When from palsy, drawing electrical sparks has been sometimes useful.

DISPENSATORIUM.—Page 569, col. 2, line 51; "*must conclude our list.*"—This enumeration must not be considered as complete; but no work of importance is omitted. The London college, since this article was printed, have published a specimen of a new edition of their Pharmacopœia. In this state it is not an object of our attention, and the appearance of the corrected work cannot be expected till long after the publication of these volumes. We had intended to give an outline of their proposed plan in this Appendix, in the additions to the article PHARMACOPŒIA; but even this would convey little information.

DOG'S BANE, the *asclepias syriaca* Lin. Sp. Pl. 313. A plant poisonous to dogs, and deleterious in the human species. But in its younger state, when boiled, it may be safely eaten.

DOLICHOS PRURIENS.—Page 578, col. 1, line 14; "*given to destroy worms.*"—Bergius thinks that the anthelmintic power is rather confined to the *dolichos urens* Lin. Sp. Pl. 1020. The descriptions, however, of Dr. Kerr, in the Medical Commentaries, vol. ii. and of Jacquin (Historia Stirpium American. 201) seem to ascertain very strictly the accuracy of the representation in the article. The account of Dr. Bancroff equally supports it. The legumen is coriaceous, four or five inches long, about the thickness of the finger, twisted like the letter S, covered with dense, clean, ochry brown hair. These certainly act mechanically, since the decoction and tincture are useless. Though they irritate the skin to such a degree as to be highly troublesome, they seem to occasion no inconvenience in the intestines, if guarded only by a thin mucilage or syrup; nor does the dose seem to be an object of importance. The SOY is prepared from a species of dolichos. See CONDIMENTA.

DORONICUM ROMANUM.—Page 579, col. 1, line 12; "*neglected in our present practice.*"—There was a violent controversy between Gesner and Mathiolus respecting the salubrity or the poisonous quality of this plant, and to decide it Gesner took two drams of the root, without any other bad effect than flatulence in the stomach, and general debility, which soon disappeared on using the warm bath. Costæus has, however, told us, and Boerhaave has repeated the tale, that Gesner was killed by it; though Haller, who has collected the chief points of the controversy, has expressly said that he died of the plague. The herb is, however, sweetish and aromatic, eaten frequently by the mountaineers, and therefore not suspicious. The doubts seem to have arisen from Mathiolus supposing the pardalianches to be the aconite of the ancients.

DRUPACEÆ, (from *drupa*), a stone fruit surrounded by pulp. An order in Linnæus's Fragments, containing the cerasus, the amygdalus, prunus, and padus.

DUODENUM.—Page 581, col. 2, line 25; "*neigh-*

bouring parts."—This intestine, through its whole course, is firmly bound down by the peritoneum, particularly by a transverse duplicature, which gives origin to the mesocolon. The two laminæ are at first separate, and afterwards unite, so as to leave a triangular space between them, lined with a cellular substance, by means of which the duodenum is connected to the neighbouring parts. By this duplicature the intestine is hid, except at its beginning and end; but the former is covered in the natural state by the colon, and the latter by the first convolutions of the jejunum. The first coat, therefore, does not wholly surround it; the muscular coat is thicker than in the jejunum and ileum, and the inner coat is described in the article. Brunner's glands are crowded near the beginning of the intestine, but become gradually less numerous, and towards the end are single. The nature of their fluid is little known: it seems to be very viscid.

Dura mater.—Page 582, col. 1, line 51; "*the cerebrum and cerebellum.*"—There is a third process below, between the lobes of the cerebellum, called the occipital. It is very short and narrow, runs down from the middle of the transverse septum to the edge of the great occipital hole, fixed to the internal spine of the occipital bone. This septum is sometimes double. There are also two small lateral folds on the sides of the sella turcica, each running from the posterior and anterior clinoid apophysis on the same side. These, with the anterior and posterior parts of the sella turcica, form the cavity for the pituitary gland. There are two anterior folds at the edges of the sphenoidal or superior orbitary fissures, which increase the depth of the middle fossulæ of the basis of the skull. The processes which accompany the nerves are styled *elongations of the dura mater.*

Dysenteria maligna.—Page 585, col. 1, line 5; "*weakness, and emaciation, are added.*"—The appearances, on dissection, are described by Morgagni in his work De Sedibus, &c. xxxi. 14, &c. These are generally warty excrescences in the rectum; the large intestines, livid, black, inflamed, eroded, hard, and thickened, sometimes ulcerated. The intestinal glands are swollen and inflamed (Stoll Ratio Medendi, iii. 345), sometimes eroded (Morgagni). Stoll denies that ulcerations ever take place; but, though not a frequent consequence, they certainly have occurred. The other abdominal viscera are occasionally affected, as the liver, spleen, mesentery, and omentum. These are, however, the effects of the disease; for the easy and complete relief sometimes experienced fully proves that no organic affection originally existed. The disease terminates sometimes in dropsy, in tinnitus aurium, and dulness of hearing (Stoll), in gangrene, in dysury, or ischury, in swellings of the thighs and wrists, in rheumatic or gouty pains, and in abscess of the rectum. These are, however, consequences, not salutary crises. In the chronic dysentery all these appearances are more striking and considerable.

Dysentery is often epidemic, and occasionally endemic, generally esteemed contagious, though this is denied by Stoll. When the fæces are without smell the disease is considered as dangerous; when without pain, it has been quickly fatal. Pringle thinks hiccough a dangerous symptom; but Quarin and Stoll deny it. When the discharge has been incautiously suppressed, blindness, epilepsy, and a variety of diseases is said to have followed.

The causes are undoubtedly, like those of putrid fever, to which it is nearly allied, miasmata or contagion, particularly that kind which is generated by numerous individuals crowded together. Unwholesome diet, impure water, and suppressed evacuations, seem to have occasionally their share in producing the disease. Every cause of debility, as usual, assists the influence of miasmata or contagion.

To the treatment we can add little. Authors, in general, rest on astringents of different kinds, though Galen long ago informed us that the disease was not exclusively to be cured by such remedies (De Simplicium Medicaminum Facultatibus, i. 34); and Stoll observes that they are never salutary. The volatile alkali is recommended by a Berlin physician; the arnica by Stoll and Colin; starch by Pringle and Cartheuser; mercury by Clark and Lind in the chronic dysentery; opium by a variety of authors, though Stoll remarks, that in the inflammatory state it is injurious; the nux vomica by the Swedish physicians, and the white vitriol by Mosely.

The rheumatic dysentery described by some authors we have not seen, nor can we discover on what the distinction rests, unless it be the cessation of rheumatic pains, when the dysentery attacks. In this disease we find all stimulants discouraged. Whatever induces a gentle, but free, diaphoresis is recommended, and in this species the Dover's powder is given by Stoll.

Dyspermatismus.—Page 587, col. 2, line 64; "*into the urinary bladder.*"—The cure of these species must depend on the causes; and, in general, when these are ascertained the remedy is easy. In the first and fourth the frequent introduction of bougies will be found necessary. In the second, mercurial ointment may be rubbed on the part, or a hemlock poultice applied, while the mercurius muriatus is taken internally. The sixth and the ninth seem equally to depend on obstruction, and must be relieved, if susceptible of relief, by the same means. The seventh requires cold bathing and tonics. The fifth perhaps will be relieved without any particular medicine by indulgence, or at last by age.

Dyspnœa.—Page 588, col. 1, line 44; "*easy ingress of the air into the lungs.*"—Though we exclude hydrothorax and empyema, many organic affections of the lungs and neighbouring parts have been enumerated among the causes; air in the cavity of the thorax, a collection of serum, or indeed fat, in the cavity of the mediastinum (Medical Observations and Inquiries, iii. 9), ossification or callosity of the pericardium, effusions of blood or serum in its cavity, polypous excrescences, hydatids, exostoses, or tumours of any kind pressing on the lungs, diseases of the sternum or the cartilago ensiformis, and obstructions in the trachea. Pressure, whatever be the cause, from the neighbouring organs must also induce it, and these must be as various as the organs themselves, or the enlargements to which they are subject. The enumeration would be tedious and useless. Other causes are, suppressed gout, repelled

eruptions, drying up old ulcers, deleterious vapours of every kind, and sometimes from idiosyncracy, apparently innocent ones. The fumes or the fine powder of ipecacuanha floating in the air when pounded have produced this effect.

The cure will greatly depend on the cause: should no organic defect forbid, full vomiting may be advantageously employed; in the more languid states of the circulation, the ammonia and the squills.

E

EBULUS.—Page 591, col. 1, line 3; "*in the beginning of September.*"—The whole plant has a disagreeable, virose smell, more unpleasant than that of the elder. The root is creeping, round, somewhat more than a finger's breadth, thick, white, and somewhat fleshy. It was formerly much celebrated in dropsy, both as a diuretic and a purgative. Two drams in decoction are sufficient for the latter purpose. If the interior branch of the recent stalk be boiled in water, a very bitter decoction is produced, which excites vomiting, a discharge of stools and urine (Brocklesby). The *leaves*, thrown into a granary, drive away mice (Losselius apud Linnæi Flor. Suec. 97). Boiled with wine in the form of a cataplasm, they discuss tumours of the joints, arising from contagion, particularly if a bandage is added. They are said to be useful applications in œdematous swellings. The rob of the berries is a domestic remedy in Switzerland and Carniola, as a deobstruent. When recent, the berries are gently laxative, less so in the form of a conserve.

The seeds are oval, somewhat triangular, and wrinkled; when recent, their cathartic effects are more certain in the dose of a dram, taken in wine or broth, or with syrup, in the form of an electuary; but it sometimes excites vomiting. The expressed oil is equally efficacious.

ECCYMOSIS.—Page 591, col. 2, line 11; "*alone necessary.*"—Astringents and stimulants of a more active kind are often advantageous, and ardent spirits, from their astringent, perhaps their antiseptic, power are generally useful. When the ecchymosis is considerable, bark and vitriolic acid internally are required.

EFFLORATIO.—Page 593, col 2, line 44; "*See* EXANTHEMA."—In botany, this term means the time of flowering of each plant, which is variable according to the climate, and more so when the plant is kept in conservatories. Those which flower twice a year are called *biferæ*; if oftener, as the monthly rose, *multiferæ*.

ELEMI.—Page 597, col. 1, line 12; "*kakuria.*"—Geoffroy distinguishes two kinds of gum elemi, the *true*, which is yellow, or of a greenish white, in cylindrical pieces, internally soft and glutinous, with the smell of fennel, covered with reeds and palm leaves, brought from Ethiopia; and the *spurious*, brought from New Spain, the Brazils, and the American islands. When the bark is separated from the top of the trunk, in a dry season, within about three days, a gratefully smelling resin, with the odour of dill seeds recently bruised, exudes, which sensibly hardens. It is imitated by uniting yellow resin with the oils of spike and turpentine; but the smell of the latter betrays the fraud.

ELEPHANTIASIS.—Page 597, col. 2, line 20; "*on bad diet.*"—It is not only endemic among the Moors, but in Sweden, in Java, in Barbadoes (Hillary), and around the river Jaik (Pallas). One of the common remedies recommended is the flesh of vipers; but Horstius, and, after him, Dr. Heberden, have informed us that it is of little utility. The bark and warm bathing have occasionally been useful. Hillary observed, on dissection, that the vessels of the cellular substance were considerably dilated.

Hillary's Diseases of Barbadoes; Albinus de Elephantiasi, 1694; and De Elephantia Javæ Novæ, 1683; Emerson de Elephantiasi vera Ulterioris Asiæ; Fracastorius de Morbis Contagiosis; Hendy and Rollo on the Diseases of Barbadoes.

EMANSIO.—Page 599, col. 1, line 62; "*usual period of appearing.*"—In modern authors, the term is more strictly limited, and "emansio" is applied to the deficiency of the discharge at the period of its first appearance.

EMBALMING, the art of preserving a dead body from putrefaction. The Egyptians excelled in this process, which consisted among them in discharging the contents of the cavities by means the least calculated to disfigure the corpse, and filling them with antiseptics and aromatics, particularly myrrh, cassia, and different spices. It was then laid for seventy days in a strong solution of nitre, and afterwards bound up with bandages and fillets, immersed in a bituminous substance. Sometimes the features were preserved, at others the face was bound up, and a resemblance probably, though a rude one, drawn on the mask. Another mode of preserving was by injecting a terebinthinate fluid into the anus, and covering the body with some drying powder, either fine calcareous earth or lime. In more modern times, the Egyptians wash the body frequently with rose water, perfume with incense, aloes, &c. and then bury it in silk or cotton, sometimes in a covering consisting of each, moistened with liquid perfume. Dr. Hunter recommends injecting the vessels with turpentine, impregnated with camphor. Faujas de St. Fond gives a very entertaining account of the method Mr. Sheldon employed to preserve the body of a young lady (Travels through England and Scotland, i. 42). The vessels were injected in different parts with alcohol saturated with camphor, mixed with a small proportion of turpentine. The skin was prepared with finely powdered alum, rubbed on with the hand. The intestines, and all the internal parts, were taken out and covered with a varnish, composed of a mixture of camphor and yellow resin, afterwards rubbed slightly with alum. The viscera were then replaced, and the crural artery injected with a strong solution of camphor in rectified spirit. To imitate the colour of the skin of a face, a coloured injection was thrown into the carotids. The body was then placed in a case of Virginia cedar, on a layer of calcined chalk, inclosed in another, and not again opened for five years. It was then found

perfect, without having experienced any injury from insects.

EMBRYOTOMIA.—Page 599, col. 2, line 55; "*easier delivery.*"—It has been asserted by Dr. Osborn, that the head of a full-grown child cannot be diminished less than three inches, between the parietal protuberances by the action of the uterus, and that where either aperture is less, the operator ought to proceed, as soon as possible, to *embryotomy*. This assertion is perhaps somewhat too hasty, since the heads of different fœtuses yield in different degrees, and are of different sizes, nor is it easy, at all times, to determine the exact size of the aperture. It is best, therefore, to avoid the opposite errors of waiting too long, or too hastily attempting a disagreeable and dangerous operation. When, after a trial proportioned to the woman's strength, the fœtus does not advance, and the impediment appears to arise from the size of the aperture, the operation should be determined on. The aperture, which will admit of the extraction of the child after it is mangled by the operation, has been the subject of our consideration under the article CÆSAREA SECTIO.

When the operation is decided, the perforator is to be cautiously introduced, guided by the hand and finger to ascertain that the part to be perforated is really the head of the child; and it is almost indifferent what part of the head presents, if it be any portion of the upper part. The perforator must then be used cautiously till the skull is penetrated and it enters the brain so far as the rests. The blades of the scissars must then be separated in different directions, to make a crucial opening, and the brain evacuated by a teaspoon, though it will be in a great measure discharged spontaneously. In this part of the operation we must avoid injuring the woman, and make the aperture sufficiently large for the evacuation. It is proposed by Dr. Osborn to wait for some time after the brain is evacuated, and should the strength permit, this may be allowed, but in emergencies we must hasten on. Though fatigued, she will gain some strength by the delay, if delay is admissible; the swelling of the soft parts will subside, and the bones collapse, when the distending cause is removed. To guard against injury, the ragged edges of the fœtal bones should be covered with the integuments.

When we proceed to the extraction, the crotchet, introduced like the forceps, is to be fixed at first on the inside of the cranium, with two fingers of the left hand on the outside, that if the blade should slip the mother should not be wounded. The operator will then draw downwards firmly and steadily, directing the head so that its largest diameter shall pass through the widest part of the pelvis. Much time, and sometimes very violent exertions are required, but if the operator imitate nature in occasional remissions, and increases the force when he finds any yielding, or, which rarely happens, any assistance from pains; if he supports the woman by cheering promises, and proper nourishment, the wished-for end will be at last accomplished. The practitioner must be cautious not to use violence. If the resistance is considerable, it is not to be overcome by active exertion, but by steady perseverance. The force, which for ten minutes has not the least effect, will perhaps in fifteen overcome the resistance, and, in a moment of relaxation, we gain by steadiness what ten times the power would not otherwise effect.

If the head passes, the body sometimes remains, and it is then advised to introduce the flattened hand, by the side of the back or thorax, into the uterus, to bring down the feet. The distortion of the pelvis, however, seldom admits of this measure, and the crotchet must be fixed in the ribs; the contents of the thorax and the abdomen evacuated, and every method tried to lessen the bulk, or assist the expulsion.

The dangers to be apprehended from this operation are injuries to the passages from the instrument slipping, or violent inflammation of the parts from bruises, inflammation extending to the abdomen. Indeed more women die from this operation than practitioners are willing to admit; but we believe the greater number sink from its being delayed too long.

We have mentioned, in another place, the proposal of bringing on labour at an earlier period, viz. at seven months, when the narrowness of the pelvis rendered the necessity of this or the Cæsarean operation probable; but the attempt is dangerous, and the execution often difficult. Mr. Lucas (Memoirs of the Medical Society, ii.), proposes, by a strictly abstemious diet, to lessen the bulk of the child. This, however, is a very precarious measure, and we suspect that it has not been properly tried.

EMOLLIENTIA.—Page 605, col. 1, line 3; "*the whole more flexible.*"—We have very inconsiderable evidence of emollients having any effect internally, except in a very slight degree on the stomach. They can have none on the internal surfaces of the arteries; but we find that they operate beyond the part to which they are applied: an effect partly arising from the relaxation induced by the heat, partly from the communication of that produced by their immediate influence. If a state of tension be general, as it apparently is in the human body, the relaxation of one part will admit of the contiguous portion yielding; and this is probably the source of the benefit, for the relaxation is felt more evidently nearer the part to which the application is made. We have already mentioned that, on a principle not very different, Dr. Cullen has explained the action of the warm bath; and the more fully this doctrine is examined, the greater will the probability of its truth appear. Water alone we have considered as the principal emollient; but the frequent application of warm water will dissolve the sebaceous matter of the skin, and counteract its own effects. Some oily or mucilaginous substance ought, therefore, to be added. When the design is only to relieve tension, the warm water alone will be sufficient, and no addition will improve its salutary effects.

EMPHYSEMA.—Page 605, col. 2, line 20; "*without any injury to the pleura.*"—Dr. Blagden and Dr. Simmons mention a rupture of the air-vessels as the consequence of labour pains, and Mr. Hicks as the effect of peripneumony (Medical Communications, i. 13). Dr. Wilmer, in his Cases and Remarks, observed it from a putrid fœtus, when it was relieved by acids.

Achard in the Berlin Memoirs, 1781, proposes the injection of different gases into the cellular substance

as remedies; but neither this author nor Timmerman has adduced any facts in support of this novel practice, and, from our more intimate acquaintance with the nature of these artificial gases, there is not the slightest expectation of their success from this mode of employing them.

EMPLASTRUM.—Page 606, col. 2, line 53; "*in many plasters.*"—Iron is not mentioned as susceptible of an union with oil, but from the changes in the appearance of the oil from the action of wheels, it is probable that an union actually takes place, which may prove an useful addition to the list of external remedies.

EMPYEMA.—Page 608, col. 1, line 9; "*symptoms of hydrothorax.*"—The observation of Dr. Cullen that empyema may arise from vomicæ, and the distinctions enumerated in a subsequent part of the article taken from the strumous habit, apparently require correction. In vomicæ no real suppuration takes place except in the cyst of the tumour, and this is too inconsiderable to produce empyema. If true purulent matter is discharged in any quantity from the lungs, we have, as observed in another part of the work, considered it as a common abscess, and given a favourable prognostic, which the events have not yet contradicted.

After the external incision, the aperture of the pleura may be made of a less extent. This membrane should be very slowly and cautiously divided, lest any adhesions should have taken place. When a probe can be introduced it will serve as a director. If the adhesion be considerable, an opening must be made in another part; but, in general, by enlarging the external aperture, access to the cavity of the pleura may be obtained. When the first flow has escaped, a flat silver canula should be introduced, that it may be stopped should the patient be faint. The patient should lie on the side affected, that the matter may be gradually drained. It has been proposed to make the external incision lower, and to draw back the skin before the pleura is wounded, to prevent the access of air: but this is apparently unnecessary. The matter remaining will prevent any great danger, and the air may contribute to excite some salutary inflammation, which will obliterate the cyst. The wound must not be allowed to heal soon, as a discharge from it will contribute to prevent the return. When matter has formed near the pleura, when its seat can be ascertained, a deep issue will frequently evacuate it. Watson has succeeded by means of a seton.

It has sometimes happened that nature has made an effort to discharge it at different parts of the thorax; but when this has occurred under the scapula, and at the upper regions of the chest, the patient is only for a time relieved, and a depending opening must be made. The puncture has been made in many different parts, by David (Memoires pour le Prix, x.) near the sternum; by Saviard (Observations Chirurgiques) near the xiphoid cartilage. Borelli mentions sudden death, from too rapid evacuation of the purulent matter.

The older surgeons direct various injections of myrrh, wine, oil, &c. after the operation, which induce dangerous inflammation; but could this be moderated it might occasion an obliteration of the cavity by the adhesive inflammation. The continuance of the discharge is a safer plan. The bark, the salix, and a variety of tonics, have been advised after the operation; but the circumstances of the patient, and the previous disease, will direct the proper remedies. As empyema has occasionally arisen from metastasis, as in a case described by Fabricius Hildanus, where it followed a suppuration of the thumb, induced from a wound made by broken glass, so it has been relieved in the same way, and the matter discharged by urine (Buchner Dissertatio Sistens Solutionem Empyematis per Mictionem Purulentam Halæ, 1762). Scultetus and Valisnieri have attempted to imitate this process by diuretics; but have succeeded only in those equivocal cases, which may have been collections of water only.

EMULSIO.—Page 609, col. 1, line 13; "*acute disorders.*"—Emulsions are often the vehicles of oils, resins, &c., and are generally useful in the exhibition of the more acrid medicines of this kind, from the demulcent nature of the oils. They are the vehicles in general of oils, and consequently useful in all cases where demulcents are required.

ENEMA.—Page 611, col. 1, line 4; "*its valve offers.*"—Almost every medicine of the more active classes have been given in clysters, chiefly when they cannot be, from different causes, swallowed. The turpentine, however, in urinary complaints, and carminatives in flatulencies of the bowels, are often, in expectation of superior advantages, thrown into the rectum. The former is certainly conveyed nearer the part affected; but, except from the warmth, it operates only in consequence of absorption; and such clysters are chiefly useful from the greater dose which can be thus conveyed into the system. The latter, particularly in children, are often highly useful in this form. Clysters of vinegar and fixed air, as antiseptics, were some years very fashionable, but now disused. Those of tobacco smoke are often advantageous; but we have already spoken of them under the complaints for which they are particularly employed, HERNIA and ILEUS, q. v. When too warm, or wholly cold, they are said to be often injurious, and in some instances fatal; yet in Germany cold clysters are often recommended, so that the danger is apparently not so great as Paullini and Bartholine seem to apprehend. They are not employed in this country, though apparently well adapted to menorrhagia, particularly the *m. puerperarum*.

Of Kæmpf's visceral clysters we have already spoken. They consist of the simple bitters, or rather the medicines styled by the older physicians aperients, and are not employed in this country, or deserving of confidence. Kæmpf's own account, die Krankheiten des Underleibs zu Heilen, is not accessible to every one, but the following works are more easily met with; Elvert de Infarctibus Venarum Abdominalium Internarum Eorumque Resolutione per Enemata Potissimum Instituenda, Faber Expositio novæ Methodæ Kæmpfianæ Curandi Morbos Chronicos Inveteratos; or, Koch de Infarctibus Vasorum in Infima Ventre.

ENGASTHRITHMOS, (εν γαστηρ, and ρυθμος). A VENTRILOQUIST; one who speaks from his belly, at least without visibly employing the organs of speech.

On this account, by varying the loudness of the voice, or rather accommodating it to the supposed distance, it has seemingly proceeded from different spots. The faculty is possessed in various degrees of perfection by different persons; but from some the effects have been truly terrific, as apparently proceeding from the air, from an oyster, &c. This power it is supposed enabled the ancient priestesses to utter their prophecies, as if they came from the idols, and thus to impose in their votaries as the source of the vaticination.

ENSATÆ, (from *ensis, a sword*), the sixth order in Linnæus' natural method, consisting of plants with sword-shaped leaves.

ENYSTRON, the last ventricle of ruminant animals, synonymous, according to Gorræus, with *abomasum*. In this stomach the digestion is completed.

EPHELIDES.—Page 613, col. 1, line 52; "*close phial.*"—Stoll recommends for their removal an infusion of horseradish in vinegar; Starke, a solution of borax.

Page 613, col. 2, line 38, for INCUBO read INCUBUS.

EPIDIDYMIS.—Page 616, col. 2, line 59; "*forms the vas deferens.*"—This body is oblong in its form, and surrounds the outer and posterior margin of the testicle, to which it is joined by cellular texture. In the lower, middle, and more slender part it occasionally adheres, though it is sometimes free. The vascular cones at the upper part of the epididymis unite by degrees, and form one duct, which composes the greater part of the testicle, and grows larger as it descends. From the bottom, where it is of course largest, it ascends along the posterior face of the testicle, spreads its spiral convolutions, enlarges, and is called *vas deferens*.

The membrane which connects it to the testicle at the middle is the doubling of an almost transparent continuation of the tunica albuginea. The epididymis is flat, a little concave next the testicle, irregularly convex on the other side. These sides are distinguished by two angular edges, the innermost of which is connected with the testicle, while the outermost is free. A duct is seen to pass off from the epididymis, whose use is unknown. It was supposed to be a lymphatic; but, in a few instances, Dr. Monro found it to originate in one end, and terminate in the other. May it not be a provision in nature to supply the communication, should this body, which consists of a single convoluted tube, be in any part obstructed?

The diseases of the epididymis are not numerous. Walter discovered a calculus in it, and Dr. Nisbet informs us that it was found in a decayed state, without diminishing the venereal appetite. If this be true, it can only be accounted for by the existence of such a duct as we have just described.

EPIGLOTTIS.—Page 617, col. 1, line 38; "*See* ASPERA ARTERIA."—The epiglottis is almost wholly ligamentous, having only a triangular space filled with cellular and fatty substance, in which small glands are dispersed between the lateral and anterior ligaments, which bind it to the root of the tongue, the os hyoides, and the neighbouring cartilages of the larynx.

EPILEPSIA OCCASIONALIS.—Page 617, col. 2, line 25; "*conformation of the brain.*"—It is almost impossible to enumerate all the changes which have been found in the brains of epileptic patients. Morgagni (De Sedibus, ix. 16, 17) mentions a preternatural softness; and again (25), too great hardness of the brain. Pacchioni describes the brain as hard in that part which was the seat of a hydatid. Other authors mention hardened tumours of different kinds, and the accretion of a hard dura mater to the brain. In one instance there was a hard tumour of a reddish white colour in the corpus callosum, and in another the cause seemed to be a preternatural thickness of the cranium. Accumulations of pus and of fluids, differing in their nature, qualities, and consistence, have been frequently described, as well as irritations from sharp bones, exostoses, &c.; hydatids, fulness of the vessels, particularly in the plexus choroides, steatoms of the pineal gland, and adipose matter in the ventricles, have been found on dissection, and accused as causes. See also Boneti Sepulchretum Anatomicum, lib. i. sect. xii. obs. 3, 4, 5, 12, 17, 20, 21, 23, 25, 26, 27, 30, and Appendix.

The diseases of the stomach, supposed to produce epilepsy, have been numerous. Morgagni, in one instance, attributes it to inflammation of that organ, and hard substances swallowed have certainly often occasioned it. We have already mentioned irritation on the nerves from hard bodies, apparently originating from them; but Theden adds a case where it apparently arose from tying the spermatic cord. There is reason, however, for suspecting that this was not true epilepsy. Worms, frights, contagion, or the sight of a person in a fit, and narcotic poisons, have been undoubtedly causes.

To repeat the numerous absurdities of practitioners, in their list of remedies, would be a tedious and an useless task. We have not, we think, inserted several of the narcotics, which have, it is said, been found useful. The chief of these are the tobacco, the aconite, nux vomica, digitalis, oil of box, hyoscyamus, and bella donna. Where an affection of the head has been ascertained, as in cases where the disease has arisen from external violence, the application of the trepan has apparently succeeded.

EPIPHORA.—Page 621, col. 1, line 36; "*downwards to the nose.*"—When the water does not succeed, and some thickening of the membrane which lines the duct seems to be the cause, a little blood, according to Mr. Ware, may be taken from the side of the nose by leeches, and the injection changed for a vitriolic or saturnine solution. If the obstruction seem to arise from spasm, some diluted tincture of opium may, with advantage, be substituted; but all astringents will be injurious. Mr. Ware seems inclined to try these plans in succession, as it is not easy to ascertain at first the real source of the obstruction. He employs also another method, viz. introducing a silver probe, about the size of a bristle, through the superior punctum into the nose, and injecting water through the inferior. By this means he has often succeeded in cleaning the pass-

age. In slighter cases a sternutatory powder has succeeded.

In line eighth of this paragraph for *Avel* read *Anel.*

EPSOMENSIS AQUA.—Page 622, col. 2, line 20; "*probably contains some earth.*"—Read, some other earthy salts. These are selenite and, probably, muriat of magnesia. The water is transparent, without any gas. It is very mildly cathartic, and often, in smaller quantities, diuretic. It is chiefly useful as an eccoprotic, and well adapted to scrofulous and hypochondriac patients.

EQUISETUM.—Page 622, col. 2, line 58; *Hippuris vulgaris.*"—The species is erroneous. Linnæus considers the medicinal plant to be the *equisetum arvense* Sp. Pl. 1516. Haller thinks the medical virtues confined to the *e. palustre* and *limosum*, which he considers as a single species; Alston to the *e. fluviatile* and *arvense;* while Bergius gives the appellation of *e. minus* to the *e. arvense*, and of *e. majus* to the *e. hyemale*. These species do not, however, wholly agree in their qualities, so that, as we have numerous astringents, we need not employ them. The equisetum arvense is apparently not astringent. The equisetum is said to be diuretic, and to be useful in restraining hæmorrhages from the bladder, as well as in nephritis calculosa; but the uncertainty of the species renders it a precarious and uncertain remedy.

ERIGERUM.—Page 623, col. 2, line 13; "*senecio vulgaris.*—It is the *erigeron acre* Lin. Sp. Pl. 1211.

ERUCA SATIVA.—Page 624, col. 1, line, 27; "*the seeds have the same qualities.*"—The seeds are oval, somewhat compressed, of a yellowish red colour; the taste sharp and bitterish, like a weaker mustard. They were formerly used as a condiment, and preserved in vinegar. They promote the secretion of saliva when chewed, and on the skin are rubefacient. They are spoken of as useful in scurvy and in incipient dropsies; and were anciently considered as aphrodisiac.

ERVUM.—Page 624, col. 1, line 51; "*mixed with honey, expectorant.*"—The seeds, however, are said to be poisonous, and to bring on palsy of the lower extremities. The meal was formerly used as a resolvent in poultices.

ESCHAROTICA.—Page 628, col. 1, line 25; *on account of their great fluidity.*"—In lues the mercurial caustics are chiefly employed, and it is doubtful whether they possess any specific power. If the cupreous preparations are equally efficacious, this is probably not the case. We suspect, however, that the mercurials are more useful.

ESULA MINOR.—Page 629, col. 1, line 53; "*euphorbia cyparissias* Lin. Sp. Pl. 661."—There is the same confusion respecting the spurges, as we have just noticed in the article EQUISETUM. In many countries no distinction is made. In Sweden the euphorbia helioscopia is the only plant directed. Linnæus, in his Materia Medica, distinguishes exclusively the euphorbia palustris; and the Wirtemberg, as well as the Helvetic Pharmacopœia, confine themselves to the *e. cyparissias.* The distinction, therefore, is probably of little importance.

The leaves of the *e. minor* resemble in taste those of the almond tree, and the oil is without any acrimony. The juice spontaneously exuding from the plant, in the dose of a scruple, did not injure a cat to whom it was given; but, applied to the eyelid when closed, brought on inflammation and blindness.

The root is highly acrid, and even in the smallest quantity stimulates very violently the tongue, the fauces, the œsophagus, and even the stomach; an effect which physicians have attempted to lessen by macerating it in vinegar and cream of tartar. From six to twenty grains of each species of esula is an active purgative; but Tournefort records the bark of the root being given in in a dose from a scruple to a dram. The extract, from the latter, prepared with vinegar, or the powder inspissated in simple oxymel, is more mild, and has been given with effect in dropsies, dissolved in whey, and combined with a decoction of juniper berries.

The recent juice of the *e. major* is given in the dose of from five to six drams, or the same quantity of the dry root is infused in warm water, and given in Russia as a remedy in intermittents, visceral obstructions, and other chronic diseases (Pallas). Each excites violent vomiting and purging. This species, as well as the *e. verrucosa,* is given in Dauphigny for the same purpose.

EUPHORBIA.—Page 630, col. 2, line 4; "*euphorbia officinarum.*"—In a later work Linnæus referred this medicine to another species, *euphorbia antiquorum* Sp. Pl. 646. The gum brought to England, however, is the production of the e. canariensis. The powder is a violent errhine, inducing hæmorrhage from the nose and lungs: when introduced into the system the acrimony seems directed to the kidneys.

Notwithstanding many fatal events have followed its accidental exhibition, the ancients, particularly Ætius and Actuarius, gave it freely; and the moderns have followed them, endeavouring to correct its acrimony by oil of almonds, lemon juice, mastic, tragacanth, &c. The only way, however, of avoiding danger is to lessen the dose, which has varied from one grain to ten. Fallopius was more bold; but we gain nothing by this remedy which we may not obtain by safer ones.

Externally, however, it is highly useful, particularly in assisting the exfoliation of carious bones, and in that kind of cancer which arises from the contusion of squamous bones (Theden). It is sprinkled in the form of powder on the part every day, or every other day, sometimes applied in the form of a tincture; in other cases mixed with sal ammoniac (Theden). Some practitioners mix it with the root of orris or aristolochia rotunda. The lips of the wound must, however, be closed before the application, that its stimulus may not produce too violent inflammation. It was formerly applied to limbs wasted with atrophy, palsy, or chronic rheumatism.

Even externally, however, euphorbium is dangerous. The tops of the e. esula applied to the abdomen induced swelling of the whole body, with a fatal sphacelus. In another case, the application brought on a tumour of the scrotum, with violent pains, and the patient escaped with difficulty. Scopoli.

EXCORIATIO.—Page 632, col. 1, line 51; "*ecdora.*" —Excoriation is chiefly painful when the part is pressed against, or subject to, attrition; it then often degenerates into a deep ulcer. It is best guarded against by cold water, and most successfully relieved by the application of spirits, which destroy the too great sensibility of the vessels. De Haen recommends the white of an egg mixed, by agitation, with alcohol.

F.

FABA.—Page 638, col. 1, line 4; "*cyamus, phaseolus.*"—It is the *faba vicia* Lin. Sp. Pl. 1039. As a food the seeds are flatulent, and often troublesome in weak stomachs. The farina is used in poultices as an emollient and maturating application.

Page 638, col. 1, line 46; "FABA PECNURIM."—Read PECHURIM. It is certainly not procured, as was once conjectured, from the copaifera, and Bergius suspects that it is the production of the lauraster amboynensis. It was brought from the Brazils, or Paraguay, about the middle of the last century to Portugal, from thence to Stockholm, as a remedy for colic and diarrhœa, and was used with considerable success by the Swedish physicians in the seven years' war.

We receive only the kernel of the nut, which is oval, of a black brown colour, somewhat smooth, heavy, convex on one side, and concave on the other, with often a longitudinal furrow. Its length and breadth differ. The colour internally is of a reddish yellow, variegated by deeper-coloured spots, mixed with a paler parenchyma. It is easily penetrated by the knife or teeth; the taste somewhat between nutmeg and sassafras.

A spurious bean is sometimes sold about double the size of the true, externally wrinkled and paler; internally deeper in its colour, more hard, and bitter, but less aromatic.

The watery infusion retains the taste and smell: from the decoction of the powdered seeds a fragrant odour exhales, and its surface, when cooled, is covered with an oil. When inspissated, the extract exceeds by a third part the quantity of the nuts. Alcohol is tinged by the bean with a red colour, and covered also with oil. The extract prepared from the tincture is warm and acrid; the original taste of the bean preserved. When it is used in diarrhœa, evacuations should be premised, and it has failed when the tongue has been dry. It has failed also in other circumstances, which have not been clearly understood or pointed out. In hectic diarrhœas it seems to have been very advantageous, and its effects are apparently rapid. In dysentery it also seems to have succeeded. The medicine is given in powder, from half a dram to two scruples, two or three times a day. After the substance, the extract (we suppose the alcoholic) is said to be most useful; the infusion and tincture of inferior efficacy.

The *bark* of this tree is of a cinnamon colour, deeper internally; externally white. The best is about a line in thickness. The odour is highly aromatic, superior to that of cloves and nutmeg; at a distance resembling amber. The taste is stimulating, gently astringent, and bitter. It is brought from Panama; but is supposed to grow also in India. When reduced to powder, the finest and most aromatic parts are highly volatile. Cold water extracts an aromatic odour. Two ounces by Garaye's process yield two drams and a half; in the common way five drams of an extract, which is bitter, astringent, and aromatic. The watery infusion is rendered brown by vitriolated iron; the vinous infusions more balsamic and bitter, though less astringent; the distilled water highly perfumed. The essential oil is warm, of a deep colour, sinking to the bottom. The magnet detects the presence of some iron in the bark. Its antiseptic power is equal to that of the cincona, and superior to camomile flowers. The infusion of the bark in vinegar is strongest in this respect.

It is given in Lisbon in dysentery, and with taffia in sciatica and gout. Mayer informs us that it strengthens the stomach, stops obstinate vomitings, and in one singular case relieved cholera. It is useful in dysentery, even in the early stage, where other astringents are injurious. It cured a double tertan, which had resisted the bark, and with filings of steel was successful in an obstinate leucorrhœa.

Page 638, col. 2, line 46; for "*soluble,*" read *insoluble.*

FAGUS.—Page 639, col. 1, line 40; "*triangular seeds or nuts.*"—The capsule often contains three or four nuts, and they resemble in taste almonds. They are a pleasing food to squirrels and many birds: the latter soon fatten on them; but the fat is yellow. In large quantities the nuts are deleterious, and affect the head, inducing, like the lollium temulentum, intoxication. This effect, it is said, they have on swine. The inner bark, which is so thin as to be scarcely visible, is used in Brunswick as a domestic remedy for hectics.

FAMES.—Page 639, col. 2, line 41; "*necessary supplies.*"—Belinghieri denies that hunger disposes to putrefaction (Considerazione alle Maladie dette Putride). Haller describes the appearances on dissection of a person starved (Opuscula Pathologica, obs. 29), but was preceded by Bonnet (Lib. ii. sect. ii. obs. 18); and Morgagni (De Sedibus, xxviii. 5, &c.) those of a starved puppy. (See BOULIMUS.) Some animals bear hunger with little injury, particularly those which live torpid during the winter, and amphibious animals; but others, and even human beings, may be sometimes deprived of food for a long period with little permanent injury. For an account of the fasting woman, see Philosophical Transactions, vol. lxvii. part 1; and for other instances, vol. lxxiii. and for 1777. The earlier volumes of this collection, viz. for 1668, 1669, &c.; the Memoirs of the French Academy of Thoulouse; the Journal de Savans, &c., contain many singular facts of this kind, some of which are too extraordinary to demand our confidence. Pliny remarks (Historia Naturalis, xi. 54) that fasting is fatal in seven days.

FEBRIS.—Page 654, col. 2, line 26; "*with little change.*"—See BILIOSA INFLAMMATORIA NERVOSA, PUTRIDA FEBRIS, and TYPHUS. Under the article NERVOSA FEBRIS are inserted some remarks on Dr. Clutterbuck's new system, and, in this Appendix, referring to that article, Dr. Beddoes' observations on it.

FEMORIS OS.—Page 655, col. 2, line 64; "*at a distance backward.*"—The upper end of the bone is set off obliquely from its axis, and is formed into a large, smooth, round head, which is the greater portion of a sphere, unequally divided. Towards its lower, internal part there is a round, rough, spongy pit, where the round ligament is attached, and extended from thence to the lower internal part of the receiving cavity, where it expands in breadth. The small part, which projects at almost right angles from the head of the bone called the *cervix*, is marked with many holes, in which the fibres of the strong ligament, continued from the capsular, enter, and are consequently firmly joined to it, and round the root of the neck the capsular ligament is joined to a rough ridge. Below the back part of the root is a large unequal protuberance, called the great trochanter, the fore-part of which is rough for the insertion of the glutæus minimus; the superior smooth, where the glutæus medius is attached; the inferior smooth and flat, from the action of the tendon of the glutæus maximus. The upper edge of this process is sharp and pointed behind; but forward more obtuse, for the insertion of different muscles. More internally a conoid process, called the less trochanter, rises for the more advantageous insertion of the psoas and iliacus internus: the pectinæus is implanted in a rough hollow below its internal root. The tendons which pass over the great trochanter render bruises on it highly dangerous.

The body of the os femoris is convex on the fore-part, and hollowed behind, apparently from the action of the muscles. The fore-part is a little flatted above by the beginning of the cruræus, and below by the same muscle and the rectus. Its external surface is also flatted by the vastus externus, where it is separated from the former by an obtuse ridge. At the upper part of the linea aspera the medullary vessels enter by a small hole that runs obliquely upwards, and a little above is a rough fossa, where the tendon of the gluteus maximus is fixed. The lower end of the linea aspera is divided into two, for the attachment, in part, of the two vasti muscles; and the long tendon of the triceps is fixed to the internal by a part of the aponeurotic fascia of the thigh. Between these rough lines the bone is flattened by the action of the large blood-vessels, and near the end of each ridge sesamoid bones are sometimes found. From the fore-part of the internal tubercle a strong ligament is extended to the inside of the tibia.

The internal condyle of the lower part of the os femoris is longer than the external, to lessen the effect of the obliquity of the thigh bone on the direction of the leg. Each condyle is divided into two surfaces, divided on the external one by a notch, and on the internal by a small protuberance. The fore-part of this division, on which the patella moves, is formed like a pulley, the external side of which is the highest. Behind there are two oblong large heads, whose greatest extent is backward, for the motion of the tibia; and, from the rough cavity between them, nearer the base of the internal, the crucial ligament arises: the tendon of the triceps is inserted in a protuberance a little above. In every part of each condyle there are protuberances or depressions for the insertion of muscles or ligaments.

The motion of the head of the femur, though free in rolling, is restrained outwardly by the high brims of the cavity, and by the round ligament inwardly, where the brims are shallower. The body of the femur has a very slight rotatory motion; for the oblique projection of the neck communicates only a motion forward and backward, though to a certain extent its motion may be considered as rotatory. When the thighs are fixed their muscles move the trunk, though very disadvantageously.

From the structure of this bone accidents are common and highly troublesome, often dangerous or fatal. We have already mentioned the bad effects of contusions on the tendons, and may refer for a fuller account to the Memoires pour le Prix, xi. The difficulty of distinguishing a fracture, particularly of the cervix, or of distinguishing fracture from luxation, will be sufficiently obvious. When the joint has been luxated it has sometimes formed a new articulation in the groin, and some degree of strength and motion have been recovered. In a case recorded in the Medical Commentaries, the head of the bone was forced through the os innominatum from a fall.

From its situation and office it is subject to various shocks, and, consequently, to inflammation and to abscesses. The latter are sometimes seated in the cavity of the thigh bone, often in its head, and are of a scrofulous origin, like the white swelling of the knee, or the source of the distortion of the spine. The best termination of this complaint is anchylosis; but it generally destroys by the attending hectic. The limb often shortens by the contraction of the ligaments; but this is frequently the case from confinement, and, according to Richter, has followed repeated fits of the gout: in one instance it was cured by burning moxa on the part. The head of the bone has, it is said, been separated spontaneously by a caries, designedly by an operation, and luxated by an abscess; the neck has been destroyed by a fracture, and the whole bone rendered spongy by œdema (Ruysch). This bone, like the humerus, has been torn off by violence by the action of a mill wheel, without any attending hæmorrhage. See AMPUTATIO, LUXATIO, and FRACTURA.

FIBRIN (of the blood). See BLOOD.

FIBULA.—Page 662, col. 2, line 15; "*outside of the astragalus.*"—The head of the fibula has a superficial circular cavity, formed on its inside, covered, in a recent subject, with cartilage; but so closely connected with the tibia, as to allow only of inconsiderable motion. There are several protuberances on this bone for the insertion of muscles, but either are of little importance.

The body of the bone is crooked inward and backward, from the action of the muscles. Its sharpest angle is forwards, and it is depressed on the sides by the muscles. Its external surface is depressed obliquely from above downward and backward; the internal unequally divided into two narrow longitudinal planes by an oblique ridge, extended from the upper part of the anterior angle, to join with the lower end of the internal. To this ridge the ligament, stretched between the two bones of the leg, is connected. To the internal angle of this bone a tendinous membrane is fixed, from which the fibres of the flexor digitorum longus arise. The posterior surface of the fibula is plainest and

smoothest, but flattened above by the solæus, and hollowed below by the flexor pollicis longus. In the middle of this surface the canal for the medullary vessels may be seen slanting downwards.

The malleolus externus is situated farther back than the internus, and in an oblique direction, which obliges us naturally to turn the fore-part of our foot outwards, though we lose by it some of our firmness, and particularly the breadth of the basis on which the body rests. At the lower internal parts of this process there is a spongy cavity for mucilaginous glands: from its point ligaments are extended to the astragalus, the os calcis, and os naviculare; and from its inside strong short ones go the astragalus. On the back part is a sinuosity, made by the tendons of the peronæus; and when the ligament which covers these tendons is broken, or weakened, the tendons frequently start forward to the outside of the fibula. The union between the tibia and fibula is by cartilages, without any particular or strongly-marked articulation. and the motion is inconsiderable. In old people the two bones of the leg have grown together. Monro.

Both the ends of the fibula are cartilaginous in young persons, and assume the form of appendices before they are united to the body.

Ficus sativa.—Page 66 ,col. 2, line 65; "*Materia Medica.*"—The milky juice of the fig-tree is highly acrid. It was formerly a common domestic application to lepra, and many chronic impetigenes: it utility is at present confined to the extirpation of warts. These must be frequently moistened with it, particularly about their bases.

Filamentum.—Page 663, col. line 16; "*called thread.*"—Dr. Darwin supposes that a filament is the element of which animal bodies are composed, and that the arrangement of these filaments, constituting the organisation, is directed by the habits of the animal rather than any primordial construction. In this fanciful fabric they are only another appellation of *organic molecules.*

Filipendula.—Page 663, col. 1, line 34; "*slightly pungent.*"—The root consists of long fibres, at intervals tuberous, of an agreeable smell in autumn; but less fragrant in summer, when it is also drier and bitterish. In the autumn the taste is sweetish. They contain a starch, and by decoction deposit a strong jelly. From hence they appear evidently nutritious, and have been employed as food in seasons of scarcity. The roots, when dry, are astringent, said, with little reason, to be also diuretic and lithontriptic.

Filix florida.—Page 663, col. 1, line 60; "*Pteris aquilina.*"—The root is long, of the thickness of the finger, solitary, black externally, and spotted within, of a viscid bitterish taste, and more nauseous than the root of the male fern. Three pounds yield six ounces of expressed juice of the consistence of honey. From a pound of the dry root in decoction nine ounces of a subastringent bitter extract is obtained: from the same quantity, by means of spirit, only 14 drams 2 scruples are procured.

Authors think the female equal to the male fern in its anthelmintic power. Haller and Alston are of opinion that it is superior. Two drams in honey, or three in white wine, are given every day for three or four, omitting only that in which a laxative is exhibited. The eau de fougeres, a secret remedy of Andry for worms, probably contained a preparation of this plant, among many others, of which Dionis, his son-in-law, tells us it was composed. It is equally effectual in the cure of lumbrici as of tænia.

Filix mas.—Page 663, col. 2, line 2; "*often sold for it.*"—The root is oblong, of the thickness of the finger, surrounded by black, oval, oblong, incurvated bulbs, approaching each other, and scales of a dark ochry hue. The fibrous portions are separated. The recent root is of a pale green, changed by drying to a reddish white. The smell is somewhat nauseous. Six ounces of the dry root yield six drams two scruples of a sweetish, gently astringent, and at last a bitter aqueous extract. The alcoholic extract from the same quantity is more bitter, and in quantity an ounce, seven drams, and one scruple. Gmelin Considerationes Generales Filicum, 34.

Madame Nuffler's formula we have given in the article Tænia, q. v.; but may add, that the same remedy is equally useful in lumbrici, and when the larvæ of the musca meteorica cause considerable inconveniences in the bowels (Sparman in the Swedish Transactions, 1778, 65). In the latter case, however, the chief benefit is apparently derived from the drastic bolus, as the worms continued active for many hours after they were discharged. Many authors have substituted milder laxatives for the violent drastics of the Swiss widow, but apparently without equal success. The anthelmintic power of the male fern was known to Galen and Theophrastus.

This root has also been celebrated as a tonic, emmenagogue, and a vulnerary; but it has as little claim to these powers as to those attributed to it by the ancients, of killing the fœtus in utero. Boiled in beer, the inhabitants of the Feroe islands use it in cases of calculus: it is eaten as food in times of scarcity, and sometimes employed by the tanners. The herb is scarcely inferior. From three pounds of it, when recent, sixteen ounces of a viscid juice, of a yellow-brown colour, and an astringent taste, may be expressed. It contains also a large proportion of alkaline salt. A conserve of the young shoots was formerly employed in this country in rickets (Bowles ap Raium); and it has been used to stuff the pillows on which rachitic patients lay. Van Swieten.

Fistula in ano.—Page 665, col. 2, line 5; "*nature of the case.*"—Fistulæ of the anus generally admit of a cure, unless very long continued, with numerous openings and callosities, which would require a large wound, and too great a destruction of substance, or those whose internal aperture is beyond the reach of the finger. The latter require only an attention to cleanliness; the others may be cured by caustics, by ligatures, by incision, and extirpation, as well as by suppositories introduced into the anus, which, by closing the internal orifice, destroy its callosities, and unite its sides. These suppositories are, however, only adapted for recent and superficial fistulas; for if deep they will

not prevent the fæces from penetrating, which will hinder the wound from healing.

The mode of cure by *caustics* was known to Hippocrates, and the method of employing them thus described. "Take," says he, "a linen tent moistened with the juice of tithymalus, sprinkled with verdigris of the length of the fistulous cavity. Let this tent be conveyed into it by the help of a sound, to which it must be fastened by a thread, that is to be brought out by the anus, after having fixed it in the external orifice of the fistula. The sides of the anus must then be rubbed with the terra cimolia, and a suppository of horn introduced. This must be continued five days, and removed only on a necessary occasion. On the sixth the suppository and tent must be removed entirely, the former supplied by another of crude alum, &c." Though this detail is full and particular, the practice seems to have been neglected till the time of Dionis. He attributes the plan to a surgeon, called Lemoine, who introduced into the opening, he observes, a tent covered with a corrosive ointment, which was afterwards enlarged. In this way, by gradually enlarging the aperture, he was, after some time, successful, and though the practice was neglected, it was not wholly disused. Ward's paste is a remedy of this kind.

The ligature is a mode of cure equally ancient. A thread is to be carried by a sound to the extremity of the fistulous sore, and a wound made there to bring it back again by the anus. It is gradually made tighter, and by means of the old thread a new one may at any time be introduced when the former is worn. The process is slow and tedious, but not painful or inconvenient. It was for many years the common method, for a time neglected, and again revived. Foubert introduced the leaden wire, which was soon changed to a silver one.

The callosities which line the fistulous canal Paulus of Ægina recommends removing by the knife or scissors; but they disappear spontaneously by the removal of the fistula. Paré preferred incision in the more recent superficial fistulæ; but the ligature in the deeper and more complicated ones.

When there is no external orifice the best means of ascertaining the termination of the fistula is to press round the anus, and at the part where the patient feels the pain the external aperture should be made. The decision will be more certain if a deep hardness is felt in it. Petit introduced into the anus a tent, so as to close the upper orifice. When, therefore, the pus was collected, the fluctuation showed the spot where the wound should be made.

Extirpation is the severer operation, which Mr. Pott attributes to Guy Chauliac; but it is a very ancient one, and is evidently described by Celsus. It consists in not only laying open the sinus, but in cutting out a small slip, lest the sides of the wound should unite. This operation is only adviseable in the older and more complicated fistulæ, attended with deep and extensive schirrosities; for it is often followed by hæmorrhages, with fever, copious suppuration, diarrhœa, and a considerable contraction of the lower part of the gut. The patient must be prepared by purgatives and a suitable diet, that he may not require frequent evacuations afterwards. With the same views he must have a clyster previously injected, and the T bandage put on. When placed in the usual position, the surgeon introduces, at the external orifice of the fistula, the end of a flexible silver sound, about seven or eight inches long, following the point with the fore-finger of his other hand to the upper orifice, or, in case there should be none, to the termination of the fistula. The upper extremity of the sound is now drawn out of the anus, while the lower is pushed on, that the part to be divided may be in its middle. This the surgeon cuts through with the bistoury, separating the slip, or as much as may appear diseased. Some operators recommend separating the schirrous portions with the knife, or with the scissors; but this is unnecessary severity, and by dividing an artery may induce fatal hæmorrhage. In the common mode hæmorrhage is sometimes dangerous, and the artery often lies so deep as not to be discovered. The operator must then apply his finger successively to different parts of the wound, to perceive where the pressure most effectually stops the bleeding. A button soaked in a styptic fluid must then be applied, supported by compresses of lint. Sometimes the vessel leaks into the rectum, which is ascertained by paleness, fainting, and cold sweats. In that case the dressing must be removed, the coagulated blood taken out, and a vitriol button introduced on the wounded artery. Levret employed an ingenious method of stopping the blood. He introduced the flaccid bladder of a sheep just killed, into the anus, and having previously fastened it to a large syringe, filled it with air, which he confined, and thus obtained an equable, steady pressure on every part of the gut. When the internal orifice of the fistula is at a distance from the anus, extirpation would require too great loss of substance, and practitioners have recommended simple incision only, taking care to scarify, or to destroy with caustics, the callosities which appear on the external surface of the fistula. The latter part of this advice is, however, wholly unnecessary, as we have already observed. When fistulæ are of long standing, and have established a considerable discharge, it is recommended to form some drain, by an issue or seton, previous to the operation, lest checking so great an evacuation might be injurious. The advice is highly proper, and may perhaps be more generally followed than even the recommenders have intended.

FLAMMULA. See RANUNCULUS LONGIFOLIUS PALUSTRIS MINOR.

FLAMMULA JOVIS.—Page 668, col. 1, line 4; "*and with less success.*"—The leaves, when dried, are sweetish, combined with acidity, a slight astringency, and very little acrimony; in pounding, however, their powder is often inconvenient and injurious, producing considerable heat in the nose, fauces, and breast. The flowers are constantly acrid, either in powder or infusion. Two drams of the leaves are infused for a quarter of an hour in a close vessel, and boiled for a moment in a sufficient quantity of water for a pint to be strained off. One dram of the flowers is sometimes substituted, and each is occasionally made stronger. Of these infusions four ounces are taken two or three times a-day. From half a grain to a grain of the extract, or three grains of the leaves, are also taken for a dose, which may be gradually increased. Other malignant and cancerous ulcers, besides syphilitic ones, have been, it is said, relieved by this medicine, as well as chronic

cutaneous complaints. It sometimes proves diuretic, occasionally sudorific or laxative.

FLATUS.—Page 668, col. 1, line 12; "*tympanites.*"—There are some singular cases, on good authorities, of flatulence discharged by rather unusual outlets, particularly the penis and vagina. Cases of the former kind are described by Berger and Bartholine, in the Copenhagen Transactions; by Camper (Observationes Pathologicæ, ii. 16), who traces the source to ulcers connected with the intestine; and by Marcellus Donatus (iv. 504), from an ulcer of the anus penetrating into the urethra. Zacutus Lusitanus, and some others, mention flatulent discharges from the penis instead of semen. The latter case is more easily understood to arise from ulcerations in the vagina or uterus, and no authorities are necessary in support of its existence.

FLORES SULPHURIS. *Sulphur precipitatum.* See SULPHUR.

FLORESCENTIA, (from *floresco*). The expansion of the corolla of a plant. See PLANTA and FLOS.

FLUCTUATIO, the free motion of a fluid perceived in any cavity by the touch, or by slight pressure of the fingers on each side. In ascites it is ascertained by striking gently one side of the abdomen, while the fingers are applied to the opposite parietes.

FLUIDITAS. FLUIDITY. The atomical philosophers considered this state of bodies to depend on their small size, the smooth surface, and the spherical form; and Mr. Boyle made sand imitate the motions of boiling water by heat and agitation. Particles of sand are, however, neither smooth, small, nor spherical. In fact, the diminution of size may lessen the gravity, so that the powder will rise in the atmosphere; but it will not approach fluidity. The spherical form of the particles is better demonstrated by the observation, that fluids press not in proportion to their mass, but to their perpendicular altitude.

We now know that the particles of fluids are in a state of repulsion to each other, owing to their union with caloric. On this the various forms of gas, vesicular vapour, fluidity and solidity, in different degrees depend. When we arrive at solidity, the opposite state, that of attraction, takes place, and cohesion is in proportion to its degree. In the case of fluidity also there is reason to suppose that the electrical fluid has some share, since electricity disappears on the change from a gazeous to a fluid state, and reappears on the opposite change. A similar effect takes place in the change from a fluid to a solid, but modified in a way somewhat different.

FLUOR ALBUS.—Page 671, col. 2, line 8; "*as those of menorrhagia.*"—Authors seem not to have distinguished between the truly mucous discharge, to which leucorrhœa should be confined, and purulent one; nor have they clearly pointed out the state of the constitution, which sometimes makes a drain of this kind necessary. Among the changes in the system, traced by dissection in consequence of this complaint, we find numerous instances of suppuration in the uterus and vagina, and even the Fallopian tubes. Morgagni describes the vessels of the uterus as turgid with blood (De Sedibus, lxvii. 14, &c.); sometimes whitish tubercles in the uterus (l. c. 27). In a few cases, Bonetus found the glands of the urethra particularly affected.

Perhaps the idea of acrimony led to the suspicion of metastasis; but we see so many traces of the opinion that the disease is sometimes a general one, that we cannot wholly overlook it. There is not the slightest suspicion that a fluid, such as is evacuated, exists in the blood-vessels; but we can easily perceive that a plethora, combined with a relaxed state of the excretories, may require and admit of some mucous discharge. We can, therefore, allow that a mucous evacuation from the head, breast, or eyes, may have some effect in relieving fluor albus (Acta Medica, Berolin, Decad i. v. i. 20); and, on the contrary, that the latter may supervene on a suppression of any discharges which may occasion plethora. We have instances of this kind in suppressed discharge of sweat from the feet, of milk, of the expectoration in a chronic catarrh, and particularly of the catamenia. The disease is endemic in Holland, from the relaxation induced by their stoves, and, it is said, also in Sweden; but that it is contagious, as asserted in the Berlin Medical Transactions, is highly improbable. It often occasions sterility, dropsy, tabes, &c.

Topical irritations frequently induce it, and excess of venery, as well as unnatural indulgences, are not uncommon causes in high life. Polypi in the uterus, and pessaries, especially if too long worn, have the same effect. Gravidity is also a frequent source of the complaint.

We have omitted mentioning the stimulants which, when directed to these organs, often succeed. The balsams, particularly the balsamum copaibæ, is frequently useful; olibanum occasionally, and the turpentine in moderate doses. A late author has recommended the cantharides, which he has employed with some success.

The credit which the narcotics have obtained arises, we suspect, from not distinguishing between a discharge of a malignant, perhaps a cancerous, ulcer, and of the mucus of relaxed glands. The hemlock has been recommended by Baylies, by Quarin, and, as may be expected, by Storck; the solanum dulcamara, and the pulsatilla, by other authors. Numerous antisyphilitic remedies have gained reputation by not distinguishing between a leuchorrhœal and a gonorrhœal discharge.

FŒNICULUM AQUATICUM. See PHELLANDRUM AQUATICUM.

FŒTUS.—Page 676, col. 1, line 62; "*generally comes away by parts.*"—The cases of the fœtus remaining for a long period are numerous, and almost exceed belief, though we reject the retailers of wonders. Boyle, in the Philosophical Transactions, N° 139, mentions its being retained for twenty-six years; others for a different, and in general a shorter, period; but when in the ovarium, or in the abdomen, it has not hindered a future pregnancy. Bones have been discharged from almost every different part of the pelvis, from the navel, the linea alba, or lower portion of the abdomen, often in small pieces, and after long intervals (Morgagni de Se-

dibus, &c. xlviii. 42). To collect all the cases of this kind, or to add the authorities, would fill many of these pages.

Though we have denied the influence of imagination, the fœtus is often injured by blows on the abdomen of the mother. The bones are sometimes broken; and in one instance the vertebræ were fractured.

The diseases of the fœtus, if we except the variola, a rare occurrence, are chiefly defects of organisation, and to this cause hydrocephalus may be generally attributed. We find an instance recorded of a child being born with a cutaneous eruption, resembling itch; but, if the fact be admitted, it is peculiarly rare. A child is often killed in the uterus by a fall, or by a fright, seldom if ever by excessive discharges; for these induce generally premature labour, while the child is alive, if so far advanced as that life is discoverable. The stories of ossified children, *lithopædia*, are not sanctioned by any respectable author; those of pregnant fœtuses are still more absurd, though Dr. Plott's credulity seems to have been imposed on respecting a calf born in this state.

FORCEPS.—Page 678, col. 1, line 27; "Vide EMBRYULCIA."—Add, and PARTURITIO.

FORFICULA. EAR-WIG. *F. auricularia* Lin. An insect of the coleopterous order in Linnæus, the *orthopteræ* of La Treille, whose generic characters are tarsi at three joints, of which the last but one is bilobated; filiform antennæ of twelve joints, distinct and cylindrical; mandibles divided at their points; palpæ filiform; the lower lip in two divisions. The abdomen is very long, obtuse at its termination, with two scaly hooks at the extremity, forming pincers, differing a little according to the sex. In the female the hooks are larger and more arched than in the male. It is by no means the formidable weapon which it appears, and the insect is injurious only to the gardener. It lives in the earth, among plants, and particularly within the loosened bark of a tree, and gnaws fruit, the buds of flowers, &c. It is a vulgar error that it ever enters the ear. Frisch and Degeer have been minute in their observations on the manners of this insect, and have particularly remarked the maternal care of the female.

FORMICATIO. See MYRMECISMUS.

FORMICA MINOR.—Page 678, col. 1, line 44; "*The* ANT *or* PISMIRE."—This genus of insects belongs to the hymenopteræ, and its characters are, no borer; a needle or poisonous glands in the females and males; the males apterous; the lower lip shaped like a spoon at its end; antennæ of twelve or thirteen joints, according to the sex; the first very long, the second long, almost conical; the last of the size of the former, or a little larger; the feelers filiform or setaceous; the maxillaries of five or six joints; the lips of four. The pellicle of the abdomen in the form of scales or nodules. The pismires live in society, like the bees, and have also the three classes, of males, females, and labourers. These are distinguished particularly in their forms; but the minute description would lead us too far. The labourers are much smaller than the females; but appear only smaller than the males because they have no wings. Ants raise conical habitations, burrow in the ground, conceal themselves in the holes of an old wall, the centre of a hollow tree, or under a stone; in short, wherever they can be secure from rain. The labourers are always employed in carrying straws, &c. the materials of their habitation, grain, or small insects. If too large for the powers of one insect, a reinforcement is soon procured. The copulation takes place in the open air, and the male soon afterwards dies; the female returns to the nest, when the labourers deprive her of her wings, that she may attend exclusively to her young. The larvæ are white, thick, and short, consisting of twelve rings. They have no paws; their mouth is furnished with two teeth, and a fleshy nipple, by which they receive their food; for the labourers pour into it the juices they have sucked from the fruits, and a honied fluid which they find in the vine fretters. This is the source of their seeming friendship. These larvæ are styled the *eggs of the ant*, and, as well as the nymphs, are incapable of motion; so that the labourers, when the nest is attacked, carry them into the deepest recesses of their habitation.

The first winged ants usually appear about the end of July, sometimes earlier. The males first undergo their final metamorphosis, and leave the nest never to return. Many of these insects form such considerable swarms, that they have been suspected of sending out colonies like bees. The females soon attain their last stage, and the workmen are perfect in about a fortnight after. Their prudence and foresight are somewhat equivocal; for they are said to be torpid during the winter: if so, they are pictures of the miser, rather than the careful provider of what they may want. Their torpid state, however, has not been satisfactorily demonstrated.

The sweet, slightly acidulated juices of some trees, and the internal parts of particular insects, as the carabus, &c. appear to be the favourite food of ants. From some experiments it appears that the sense of smelling resides in the antennæ. Some species have a sting strong enough to pierce our skin, and in the wound they pour an acid fluid, which occasions a sharp pain, relieved by a mixture of oil and honey. Those which have no sting throw a red transparent fluid on the skin, which raises painful pustules like those from the stings of nettles.

Ants are often injurious in many countries, particularly in France, by destroying fruit before it is ripe, and communicating to it a disagreeable smell. They injure the roots also of many useful plants when they obstruct the galleries which lead to their habitation, and carry a large quantity of corn to their nests, if not to eat, as a store in reserve. The mischiefs done by these animals in the American islands are by far more considerable; but these details must not detain us.

Ants contain an acid, which we shall soon describe, the f. rufa, in so large a quantity as to occasion considerable inconvenience when the nest is disturbed. A living frog placed on it dies in a few minutes, without being bitten by the insects. When distilled with a gentle heat, the acid procured is one half the weight of the animal. Hot water extracts it, and a piece of sugar

placed in an ant's nest soon imbibes this acid from the ants which cover, to prey on, it.

Ants are destroyed by placing bottles of honey and water near their nests, which attracts them, and they are drowned. From drawers and chests they are driven by oil of juniper, and the extract of coffee. Urine, or boiling water, poured many days successively on ants nests, destroy the whole; and trees are defended by encircling them with a glutinous fluid, or with the soot of a chimney.

FORMIC ACID. The acid of ants is procured in the manner just described. It was first discovered by an Englishman, Mr. Fisher, and described in the Philosophical Transactions for 1670; but the subject was not pursued till the time of Margraaf, in 1749, who first procured the acid in substance. When purified, its specific gravity is about 1.0075; but by repeated rectification it may be brought to 1.045. In this state its taste is acid and acrimonious; but the latter quality is probably owing to some remaining oil: when diluted it is more agreeable. The acid is decomposed by the sulphuric, the nitrous, and the oxymuriatic acids; mixes readily with alcohol, more difficultly with the fixed oils, and with the essential only by the assistance of heat. Soot, when added to it, assumes a fawn colour, and lets down a brown sediment as it cools, which, by distillation, affords a liquor of a yellowish hue, and a disagreeable smell. The latest chemists who have examined this acid are Vauquelin and Fourcroy (Annales de Musæum National Cahier, v.). They found that these insects contained a large proportion of carbone, united to a small quantity of hydrogen, joined, we suppose, of course, to a due proportion of oxygen, and that this compound is mixed with phosphat of lime, which accounts for Thouvenel finding some analogy between the formic and the phosphoric acid. The chief component parts are, however, the acetous, with a proportion of the malic acid.

FORNIX.—Page 679, col. 1, line 1; "*arches of vaults*."—The septum lucidum is united at its lower part to the anterior portion of the medulla, sometimes styled the *fornix with three pillars;* but it is only the corpus callosum, the lower part of which is like a hollow cieling with three angles, two anterior and one posterior: the sides are consequently lateral, and one side only is posterior. The lateral edges are terminated by a large semicircular border, like two arches: these unite at the anterior angle, forming the anterior pillar of the fornix, and in their course to the posterior angles are called *posterior pillars*. The anterior middle is double, and consequently the largest, and below its basis is a short, white, medullary cord, passing between the two hemispheres, called the *anterior commissure* of the cerebrum, to which the septum lucidum adheres. The posterior pillars are bent downwards, and continued through the lower portions of the ventricles to their extremity, called, from the resemblance, the *ram's horn*. They gradually diminish in thickness, and at their outsides have a small, flat, thin, collateral border, the *corpora fimbriata*.

The posterior pillars of the crura of the fornix unite with the two medullary protuberances; *pedes hippocampi*. The inferior surface of the vault between these arches is full of prominent medullary lines, which has procured it the name of *lyra*.

FOSSA OVALIS, a depression in the septum, between the two auricles of the heart, the remains of the foramen ovale.

FRAGA.—Page 684, col. 1, line 12; "*ripens in June*."—The fruit is pleasant and cooling, though not laxative, unless eaten in large quantities, or combined, it is said, with the use of acidulous waters. They have been accused of inducing cutaneous eruptions of different kinds; but, in many constitutions, whatever disagrees with the stomach will occasion the same appearances. In hectics (Schulz and Hoffmann); in mania (Van Swieten); in gout (Linnæus); and in calculus (Lobb), they have been celebrated; though, according to Boerhaave, the lithontriptic virtue is more powerful in the seeds. The leaves and root are said to be astringent: the former are used for tea; the latter, in decoction, imparts a red colour to water.

FRAXINUS.—Page 684, col. 1, line 38; "*common in woods and hedges*."—The bark is externally of an ash colour, internally of a yellowish white, somewhat brittle. The best kind is taken from the trunk, or the older thicker branches, in which there are deep furrows. In its recent or dry state it is bitter and austere; but without smell. Its infusion resembles that of the lignum nephriticum: against the light it is of a pale yellow; when below the eye, or viewed against an opaque object, blue. Mixed with a solution of martial vitriol a black colour is produced. The decoction is bitter and acrid: an ounce of the bark affords three drams of watery extract, and half an ounce and thirty grains of spirituous: the pure resin is green. The extract is powerfully antiseptic. When prejudices against the cincona prevailed, this remedy was highly commended; but the formulæ are so prolix, that the ash bark could have had little share in the cure. It indeed very often fails, as Torti has observed in his Therapeutice Specialis, 19.

It has been used also as a lithontriptic, as an astringent in diarrhœas, in gout, scurvy, infarctions of the viscera, and worms; externally as a vulnerary. The leaves resemble sena in their laxative power; but require about one-third more to produce the same effect. They were anciently celebrated for the cure of the bites of venomous serpents, and Pliny observes that these animals avoid the shade of the tree. More recent experiments have confirmed this opinion, particularly respecting the poison of the *coluber berus* and *chersæa* Lin. From four to eight ounces of the juice are drank frequently; and the leaves fresh, or in cataplasms, applied to the part.

The seed is oblong, compressed, membranous, shaped like a tongue. It is acrid and bitter; but has been celebrated as an aphrodisiac, and as a remedy for removing barrenness.

FRONDESCENTIA, the period when each plant puts forth its first leaves. This, of course, differs not only according to the nature of the plant, but the season and climate: the former may depend on the temperature of the plant, but more on its irritability, and the state of the

rudiments of the leaves, at the end of the preceding season. Small and young trees show their leaves sooner than old ones.

FRONTIS, OS.—Page 685, col. 1, line 24; "*to reach the brain.*" The os frontis supports and defends the anterior lobes of the brain, forms a considerable part of the orbits of the eyes, and contributes some portion to the organ of smelling. In a perfect child it is divided through the middle; the superciliary holes are not formed; and a small round piece of each orbitar process behind the superciliary ridge is not ossified: no sinus is discoverable in its substance.

FRUTESCENTIA, (from *fructus*); the period of fruiting, still more variable than frondescence.

FULCRUM, A PROP, (a *fulcire, to support*). The botanical appellation of those small parts of plants which contribute to their support. Fulcra are either *stipulæ*, scales or small leaves; *bracteæ*, floral leaves; *spinæ*, thorns; *aculei*, prickles; *cirrhi*, claspers or tendrils; *glandulæ*, glands; and *pili*, hairs. A viscid clammy fluid, exuding on the surface of some weak stalks, as in the clivers, often answers the same purpose.

FULMEN, THUNDER. This awful phenomenon is now known to arise from the sudden restoration of the equilibrium of the electrical fluid, when the state of the clouds, or of the earth, in this respect, is different, whether the excess is in the earth or the superior regions. There are various means of restoring silently this equilibrium; but, in great accumulations, the violent discharges of superabundant electrical fire take place. It is a vulgar error to suppose that high places are peculiarly subject to the violence of these discharges:

——*feriuntque summos*
Fulmina montes

is a poetical rather than a philosophical representation. The electrical cloud requires a conductor, and the high hills are usually so dry as to repel it. In the greater number of instances the thunder cloud has passed over high mountains, and its victim has been only an object near water, in a humbler situation. We have watched the progress of five clouds, that have struck objects many hundred feet lower than the hills that they passed without discharging their fire; for, in general, the repeated explosions are more often communications between contiguous clouds than between these and the earth.

The injuries which we suffer from thunder are consequently more frequent; because the human body is an imperfect conductor, and not greatly elevated. In some states we have seen that the body is negatively electrified (see ELECTRICITAS); and it is then not a conductor, and will not consequently be greatly injured. There is reason to believe that a person intoxicated is in this state, and it is rare to find a drunken man struck with lightning. If thoroughly wetted, also, a person is secure, and only suffers when the discharge is greater than his conducting powers will safely convey to the earth.

When a person is killed by lightning there is seldom any very obvious injury. A black spot may be occasionally observed where the discharge entered, or passed out; and slight extravasations are sometimes found internally. As the electric fluid follows the course of the nerves, it seems to destroy their excitability, and the irritability of those muscular organs to which the nerves are directed. This is rendered more probable, from the insensibility and numbness which attend violent shocks from the electrical battery. Electricity also decomposes the fluids, and there are some appearances which show that this change is occasionally produced in the human body. Extravasations proceed either from the violence of the shock (for electrical sparks produce slight petechial eruptions), or from the relaxation produced.

When a person is killed by electricity, recovery is hopeless; for the vital spark is wholly destroyed. Apparent death is produced by another cause, viz. the shock communicated around. A discharge of electricity diminishes the quantity of air; but more frequently expands it. In each case a violent shock is felt, either from the atmosphere rushing in to restore the equilibrium, or from its expansion. By this power persons are often rendered insensible; but soon again recover. It is possible also that a less discharge may have the same effect, and, in some instances, it has been rendered probable by external extravasations. Within these few weeks, however, the author felt very severely a shock from a thunder stroke, which burst about a quarter of a mile from him. He was on a high hill, and the storm came from a higher one, at some distance; but the object struck and injured was in the lowest part of the valley between.

The means of recovery have not been varied. The usual stimuli have been employed; but, when life was not wholly destroyed, reanimation takes place without much difficulty. The extravasations have been usually washed with a saturnine lotion, though a spirituous discutient one might have been better adapted to the injury. The severe pains which often follow have been relieved by opium.

See Commentaria Petropolitana, i. 385; Charleton Inquisitiones Anatomico-physicæ; Ackermann de Morbo et Sectione Fulmine Nuper adusti; Philosophical Transactions, N°. 13, 61, &c. Stoll Ratio Medendi, vi. 308.

FUMARIA BULBOSA.—Page 686, col. 1, line 32; "*f. officinalis.*"—The root preferred is roundish, of the size of a chestnut, hollow within, as if eaten by worms: the epidermis brown, the substance white. It is neglected as superfluous, perhaps; but it is not inert; for the bitterness joined with acrimony connects it with the aristolochiæ, and the size of the root, as it renders the substitution of one for the other easy, so it is frequent. The spirituous extract is bitter and acrid; the watery bitter, with less acrimony, and less in weight. It has been used as an emmenagogue, to clean foul ulcers, and is sprinkled on carious bones to promote exfoliation.

FUNGUS.—Page 688, col. 2, line 51; "*into mucous matter.*"—It is now ascertained that fungi are really vegetables, differing from other plants in not being herbaceous, and having neither leaves nor flowers; in being

more simple in their form and organisation. They agree with them in their manner of growing. The animal nature of mushrooms was defended not long ago by naturalists of credit, and both Necker and Medicus supposed their generation equivocal; the one pronouncing them a reunion of the cellular texture of decomposed vegetables, the other a vegetable crystalisation. Belliard, however, showed that mushrooms did not differ from vegetables. They have, he remarks, fibres, vessels, roots, efflorescences, and seeds, without the concurrence of which no reproduction takes place. "They are evolved, grow, and perish like other vegetables; but not without leaving beings similar to themselves, which experience the same revolutions." What is called the *white of the mushroom* is, according to this author, the seed agglutinated to different bodies; and to obtain it from the greater number, it is sufficient only to expose them, while fresh, on glass, which will soon be covered by their seeds. These vary, as in other vegetables, in their number, situation, dimensions, form, and colour. Some are so large as to be seen without a lens; others require the largest magnifiers. They are dissipated by the winds, fixed to bodies by their glutinous substance, and washed to the earth by rains.

What Belliard has, however, called the seeds, other authors have styled the grains, and considered them as buds, rather than seeds. Gærtner first suggested the idea, and it has been since supported by Parmentier. If this, however, be true, the pretended male and female organs described in mushrooms must be illusions; and indeed the different accounts given of them are sufficient to excite suspicion. Some mushrooms arrive at perfection in five or six hours, others require a year for this purpose. Their nourishment is certainly absorbed by roots, and carried by internal canals to every part of the plant. The more solid mushrooms agree in their appearance and structure with trees, and the nutritious juices are conveyed and applied in ways nearly similar. In the more temporary kinds the nutritious juices are apparently poured into cells, while the proper juices circulate in capillary vessels.

Some mushrooms are employed in the arts, others are eatable, others poisonous, others useless; but all contain legions of insects in a larvated state, which prey on them. Mushrooms either grow on the ground or on other plants: they sometimes rise naked, at others covered with a coif (volva), which is soon torn. The substance of some resembles cork or wood, that of others is soft and fleshy, or mucilaginous. Some are simple, others branched: the greater number are covered with a cap, stipilated or sessile, orbicular or peltated, or semiorbicular and attached to the side. The taste of many is acrid and corrosive, of some sweet; but the greater number are insipid. Some discharge a white fluid when gathered; others, in the same circumstances, change their colour; many exhale a sweet smell; but several are inodorous, or produce a nauseous effluvium, particularly when they begin to be decomposed. Their putrefaction attracts those insects which prey on dead animal substances.

Ventenat includes twenty-nine genera in four divisions, resting on Belliard's system of seeds. 1. Those whose seeds are in the internal part, as *tuber*, *reticularia*, *mucor*, *trichia*, *spherocarpus*, *lycoperdon*; *nidularia*, *hypoxylon*, *variolaria*, and *clathrus*: 2dly. those, whose seeds are on every part of the surface; *clavaria* and *tremella*: 3dly. those whose seeds are on the upper part, *peziza* and *morillus*: 4thly. those whose seeds are on the inferior part, *auricularia*, *helvella*, *echinus*, *fistulina*, *boletus*, and *agaricus*.

Fungus melitensis.—Page 689, col. 1, line 45; "*diarrhœas and dysenteries.*"—It is improperly called a fungus, though it differs essentially in structure from other plants. On a stalk, without leaves, about half a foot in length, and the thickness of the finger, a spike or amentum, equalling in length the stalk, rests, but of double thickness. The juice is red, of a bitter, styptic taste. Boccone recommended it in dysenteries, hæmorrhages, scelotyrbe, and malignant ulcers. It is said to be an excellent dentifrice; and supposed to be preferable to other astringents, as it does not coagulate the blood. Deidier used it with success in old venereal ulcers of the urethra.

Fungus salicis.—Page 689, col. 1, line 48; "*but is now disused.*"—The smell of the recent fungus is particularly grateful, resembling, according to some authors, violets, to others orris root or aniseseed. When dry, it is rather displeasing and ammoniacal. Distilled water preserves but little of the smell, though by decoction in water it is retained. No essential oil can be procured from it. The watery extract from two ounces was two drams and a half, bitter, saltish, and unpleasant. The resinous extract from the same quantity amounted only to fifty grains, salt, bitter, with a more manifest smell. On burning, besides an alkali, it leaves some Glauber's salt, a little flint, and a few atoms of iron.

The dose which Sartorius found effectual in hectics was two drams night and morning, in goats milk. A less dose has been employed, and it is said to have succeeded also in hypochondriasis and spasmodic asthma. In drying it must be covered with mucilage, and when moderately dried moistened with alcohol, in pounding.

Fungus cerebri, a morbid growth of the brain, when a part of the cranium, which usually confined it, is removed by a fracture or the application of the trepan. It seems to arise from a paralytic state of the vessels of the brain, occasioned by the violence, and a consequent effusion or extravasation, which might, if the skull were sound, have induced symptoms of compression. The dura and pia mater successively ulcerate, and the tumour increases with great rapidity. In general it requires only a careful attention; for the effusion gradually lessens, and hardened parts drop in pieces. No pressure must be allowed; but should the tumour be very large, the external parts may be pared down with a knife.

If, however, the increase of the tumour is attended with symptoms of compression of the brain, which shows that it extends inwardly also, the opening of the cranium must be enlarged; for this disease was less common when larger pieces of the cranium were formerly taken away in the operation. In this case, however, we must act with caution, as the hæmorrhage is occasionally dangerous. Should this be considerable,

Mr. Abernethy advises taking away the coagulum and admit the loss of a little blood, to deplete the vessels, and assist their contraction.

As an external application, the tinctura ferri muriati we have found sometimes serviceable; and good effects are said to have resulted from sprinkling the fungus with equal parts of myrrh and lapis calaminaris.

FUNIS.—Page 689, col. 2, line 45; "*employing the forceps.*"—We perceive a great diversity of opinion among the forensic physicians respecting the necessity of tying the funis. Kaltschmid, Roederer, Plaz, and others, contend that it is not absolutely necessary, and to these may be opposed Fischer and Hebenstreit. Mr. White and the practitioners of this country are not anxious to tie it immediately. The last author, Hebenstreit, has published an excellent dissertation at Leipsic on the pathology of the funis. The cord has been found double, sometimes contorted, or in knots, and is occasionally broken off with little danger.

FURCÆ, one of the offensive weapons of plants, similar in origin, &c. to the prickles, but double at the extremity.

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GALANGA.—Page 691, col. 1, line 44; "*in the East Indies.*"—The plant is by no means accurately ascertained; but this is of little importance, since we have many medicines of the same class. Some persons have ignorantly substituted the roots of the cyperis longus for galangals; but the error is detected by the bitterness and astringency joined with the aroma. About a dram of essential oil may be extracted from each pound of the root. Its smell is sweet, and the acrimony less. Water extracts more than spirit, viz. six ounces from a pound, which is very acrimonious, though less so than the spirituous extract. The Indians use this root as a condiment.

GALBANUM.—Page 691, col. 2, line 37; "*of the plant.*"—It distils spontaneously, or by incisions from the tree when about three or four years old; but it is a Turkish custom to cut the trunk transversely, about two or three fingers breadth above the root. An inferior kind is sometimes imported in cakes, and it is tolerably good, if whitish, and somewhat opaque particles are observable in it, which tinge alcohol with a golden colour. What is of a dark brown colour, of the consistence of wax, is of no value. There is a liquid galbanum brought from Persia, of the consistence of turpentine; but it has not the smell of the true resin, and is of little use. Galbanum contains about $\frac{1}{21}$ of essential oil, and in the warmth which this imparts its chief superiority to the other gums seems to consist.

GALDA GUMMI RESINA.—Page 692, col. 1, line 63; "*it is not at present to be procured.*"—Buchner describes it as greyish, milky, friable, lamellated, inodorous, of a very bitter and acrid taste; Spielman as externally black and internally white, hard, of the taste and smell of gum elemi, softening between the teeth, melting in flame, and diffusing no unpleasant odour when warm. It affords no essential oil, and is chiefly resinous.

GALEGA.—Page 692, col. 2, line 21; "*noted in medicine.*"—Yet this trifling medicine has been supposed to be useful in the bites of serpents, and, from a forced analogy, in malignant fevers and plague. The credulity of Mr. Boyle has led him to record the recovery of two persons from the plague, after taking the conserve of the fresh leaves of this plant.

GALLIUM.—Page 693, col. 2, line 28; "*seldom used in medicine.*"—The root, like that of madder, gives a red tinge to the bones. The herb and flowers have been used in epilepsy, and the latter have the authority of Lieutaud in their support. Jussieu used them with success in hysteria (Amœnitates Academicæ, iv. 40), and they are sometimes taken in infusion by arthritics.

GALLIUM ALBUM, *galium molugo* Lin. Sp. Pl. 155, resembles the galium aparine, and has been employed in epilepsy.

GAMBOGIA.—Page 696, col. 1, line 47; "*leaves a gray ash.*"—The resin is intimately united with the gum, so that water and spirit dissolve nearly an equal quantity; the latter about one-sixteenth more. The tincture is of a deep golden colour, the solution of a dilute yellow, turbid, and on standing some resin falls to the bottom. It was first brought to Europe by Clusius from China in 1603. Great apprehensions were formerly entertained of its violence, and various means were employed to correct it. One method was to inclose the powder in a bag, and afterwards put it into a warm loaf: this was to be kept hot for a night, and the experiment repeated four or five times. The crumb of the bread became by this process a drastic purge, and the gum was proportionally weakened. Long continued boiling was for a time supposed to be useful; and different authors have advised combining it with vinegar, lemon juice, cream of tartar, mineral acids, alkalis, aromatics, and etherial oils, for the same purpose of correcting its virulence. The vomiting which it frequently occasions has, it is supposed, been prevented by uniting it with calomel. Solutions with alkali are said to act weakly on the bowels, and powerfully on the kidneys: the observation in the article, that they "are supposed to act only by stool and urine," is incorrect. It frequently vomits at first; but after a day or two this effect appears to pass off.

In dropsies it was formerly given in large doses; but at present a portion only is added to quicken the milder purgatives: a scruple was formerly no uncommon dose, and it is not then surprising that it was found powerfully drastic. In the asthmas of children, by its emetic and cathartic power, it seems to have been of considerable service. In icterus it is said greatly to assist the action of rhubarb. Its use in intermittents we learnt from the Turks (Amœnitates Academicæ, ix. 168).

In tænia its utility has been sufficiently ascertained by the effect of Madame Nuffler's remedy, and many other boasted specifics. Herrenschwand's specific for this worm, some years ago, excited a considerable *sensation* in Germany, and numerous conjectures were ha-

zarded on the subject. There was much preparatory mystery; but the powder itself was the principal object. Herrenschwand informed Schroder, a veteran professor of Gottingen, that it contained from ten to fifteen grains of gamboge, with from fifteen to twenty of kali. Others have given the same formula; but in less doses more frequently repeated. Herrenschwand told Vogel that the ashes of the fraxinus were added. Perhaps he might mean these instead of the kali; but, when this medicine was recommended to the empress of Russia (Elizabeth), she ordered it to be analysed by Model; who found, it is said, in it both mercury and arsenic (Pallas). It certainly acted unequally; on many with great violence; on others slowly, and not till the next day (Bonnet). A fact observed by Herrenschwand is worth recording. "If there is any doubt, he observes, in his letters to Rosenstein, whether the disease be from tænia, an ounce of the syrup of peach flowers may be given, and should there be a worm, some grains, or molecules, of a white matter will be discharged." The specific of Clossius has also the gutta gamba for its basis.

Ganglion.—Page 696, col. 2, line 42; "*in many other parts of the body.*"—The various uses assigned to ganglia are very unsatisfactory; but we have shown that in these bodies the nerves sent to any one vital organ are mixed with those which pass from different parts of the spinal marrow; so that if any one is destroyed at its source, the power of the organ is not lost, but weakened in proportion to the number of nerves mixed. In ganglia also there is frequently some nervous and cortical matter, so that the nerve probably gains additional energy. This has led to the distinction between the *cerebral* and *ganglionic* systems, or those subservient to volition, and those independent of it. The brain is the great distinction of the higher orders of animals, and as this lessens, the ganglionic system rises in importance, till, in the lower classes, it is almost the whole animating power. See Nervus.

Ganglion.—Page 696, col. 2, line 53; "*fixed upon a tendon.*"—Their seat seems in the bursæ mucosæ, and their contents are usually a glairy, gelatinous, elastic fluid, sometimes with little hard bodies, occasionally distinguished by peduncles, by which they seem to be fixed to the sides of the cavity. They are produced by strains, by contusions of the joint, and sometimes they appear to follow rheumatisms. Frequent friction, with occasional pressure, will sometimes remove them, and they may be safely burst by violent compression, after which their contents are absorbed. Blisters have also succeeded. If the seton fails, some gently stimulating fluid may be injected, as port wine and water, to excite the adhesive inflammation. They are most frequently found on the back of the wrist, or near the ancle.

Chalybeates are sometimes said to destroy ganglia, and the preparation recommended by Zwelfer is the essential martis. Gum ammoniac dissolved in vinegar, the essential oils, particularly the oleum laurinum, the balsam of sulphur, and the sedum majus, have been recommended by different authors, and hemlock has been ridiculously given internally. Plater records a case of a ganglion in the ham, and Bartholine, in the Copenhagen Transactions, one on the carpus, which yielded during pregnancy, and returned afterwards.

Gastricus succus.—Page 697, col. 2, line 46; "*remains of former meals.*"—If it be alleged that the gastric juice of different classes of animals differs, it may be added, that their food does the same. The gastric juice of the human species, when the stomach has been long empty, scarcely differs from mucus. We see no apparatus for the preparation of a complicated fluid, and we shall find that, independent of Dr. Rush's hypothesis, there are other functions which the vasa brevia may supply (Home in the Philosophical Transactions for 1808, part i). See Splen, Appendix.

The constant ingredients of gastric juice are the muriatic acid, soda, ammonia, and phosphoric acid, in their different combinations. Marquart found that twenty ounces of the gastric juice of a sheep yielded but seventy-seven grains of solid matter, which contained twenty-nine grains of common salt, seventeen of phosphoric acid, fourteen of muriat of ammonia, ten of albumen, five of phosphat of lime, and two of resinous and extractive matter. The power of coagulating fluids resides in the substance of the stomach, since it remains after it has been most carefully washed. The antiseptic power is certainly observable in the fluid itself, but is in a great degree connected with the stomach as a living organ, since it is greatly impaired by any cause of debility.

Gelatina.—Page 698, col. 2, line 22; "*by evaporation.*"—We shall resume this subject of animal gelatine at greater length, under the guidance of Mr. Hatchett's excellent paper in the ninetieth volume of the Philosophical Transactions.

When pure it is inodorous, insipid, and transparent, with a slight shade of yellow. Dry gelatin absorbs water, swells to many times its original bulk, softens, and becomes extremely elastic. In cold water it does not dissolve; but returns to its former state, when taken from it; while with warm water the solution is perfect, without any chemical change; for by evaporation the gelatin resumes its original consistence, differing, in this respect, from a solution of albumen, which, when coagulated by heat, never again becomes soluble.

Gelatins are soluble in all the acids, particularly in nitric acid, even when cold and dilute; and in this way they are easily separable from condensed albumen. When much concentrated, the acid is decomposed, and, as observed in the article, oxalic and malic acid procured. The muriatic acid agrees with the nitric in its action on this substance. The acid solutions of gelatine yield no precipitate by the addition of alkalis or earths. The caustic fixed alkalis dissolve gelatine, forming a brown, viscid substance, very different from soap. We may thus distinguish gelatine from albumen, fibrin, and many of the soft parts of animals, which form a true soap with pure alkalis.

Gelatine is insoluble in pure alcohol, and, when the latter is poured into a watery solution of it, part is precipitated; but, unless a large quantity of spirit is added, the mixture soon again becomes clear. Gelatine, when dry, is unchanged by keeping; but when moist, it soon becomes sour by the evolution of the acetic acid, then mouldy and fetid, at last exhaling ammonia. When

dry gelatin is strongly heated, it curls, swells, and yields an oily ammoniacal liquor. In close vessels it leaves a bulky, but light, soft coal, somewhat less than 0.1 of the original substance. When this is burnt, the quantity of earthy and saline matter remaining is scarcely more than 0.003. Condensed albumen by long digestion in dilute nitric acid, when evaporated, assumes the properties of gelatin. Of the effects of its addition to solutions of tan we have already spoken. When a solution contains only 0.005 part of isinglass, the precipitation was immediate and considerable. Solutions of albumen give a precipitate with tan, but not immediate.

The tenacity and viscidity of gelatine does not depend on its proportion of water; but on the age and constitution of the animal. Different parts of the same animal furnish it of different consistency: that from the skin is the strongest.

Animal mucilage, though resembling gelatine, differs from it. In some parts of the animal body, we find a clammy, insipid, whitish, and almost colourless liquor, uncoagulable by heat; but leaving, after a gentle evaporation to dryness, a small proportion of slimy, tenacious matter, resembling gelatine, and equally soluble. The saliva is an example of this kind; but the mucus is more copious in the oyster. It differs from gelatine, in being soluble in cold water, though when dissolved in hot it does not stiffen on cooling; but the viscidity wholly depends on the proportion of water. Mr. Hatchett considers it as gelatine, though the lowest in the scale of cohesion; but Dr. Bostock has endeavoured to establish some distinguishing marks between the latter and mucus. He tried a solution of mucus from an oyster, by the addition of a solution of muriat of mercury, which produced no effect, so that the mucus did not contain albumen; by tan, which occasioned only a slight inconsiderable precipitate, though a solution of gelatine, in 100 times its weight of water, was copiously precipitated; with aqua lithargyri acetati, which gave an immediate opacity, and after some time a dense white precipitate: this will have no effect on animal gelatine, and we may therefore safely consider mucus as a distinct animal principle.

GEMINI. See MONSTRUM.

GEMMA, A BUD; in botany the embryo of a plant, found on the stem and branches of the parent tree, and covered with scales to defend it from cold or injuries. Bulbs are buds seated near the root, and both are called *hybernacula* by Linnæus, *winter habitations*. Many animals of the lowest orders are produced also by buds, as the polypus; but this mode of reproduction gradually disappears. It is at last confined to a lost limb, and in the more perfect animal is no longer observed.

Buds are covered with imbricated, hollow scales of no inconsiderable hardness, and defended by hairs. All the parts of the plant thus concealed are perfect; but tender, delicate, convoluted, covered with a viscid juice, which is sometimes resinous and odoriferous. The *gemma florifera* contains the flower, often found at the extremity of small branches, which are more short and rough, with fewer leaves, than the other branches: it is usually thicker, shorter, less uniform, and often terminated obtusely, called by Pliny *oculus gemmæ*. The *gemma folifera* contains the leaves in their tender state, equally convoluted, covered with small scales, from which the stipulæ, seated at the foot of young branches, are commonly produced; except in the hazel-nut and horse chestnut, these are more pointed than the former. In another kind of bud, *gemma florifera* and *folifera*, the leaves and flowers are contained indifferently. Sometimes the leaves emerge on a small branch, which afterwards produces flowers; sometimes they produce leaves only, and are then called *barren*; sometimes flowers also, then styled *fertile*.

In all buds the roots are wanting, and in various buds shoots are contained with leaves only; but, in proper situations, both roots and flowers are supplied. When placed in the earth they often perish from excess of moisture, and are consequently inserted within the bark of another branch or stock, so that the medulla of each may be contiguous, and the new branch is supported by a mass of thick loam. This process is styled *inoculation* or *ingrafting*.

On annual plants true buds are never seen; but the branches are protruded from the wings of the leaves without any scaly covering, as they require no protection. They die with a parent plant, and often before it. Linnæus, in a trunk scarcely a span in breadth, calculated that 10,000 buds might be produced. Such is the magnificent profusion of nature.

GENIPI VERUM.—Page 701, col. 1, line 30; "*in the system of Linnæus.*"—It most nearly resembles the *achillæa atrata* of Linnæus Sp. Pl. 1267; and the *a. nana* 1267 is sometimes called genipi. Its smell is aromatic, and it is given in weakness of the stomach, sometimes even in pleurisy. Tissot.

GENTIANA.—Page 702, col. 1, line 14; "*gentiana lutea.*"—The pharmaceutic appellation is *red gentian*, and, when this plant cannot be procured, the purple gentian is substituted. Should the marks of distinction between the true gentian and the roots of the thora be considered as insufficient, we may add, that the wrinkles (for the gentian root is also wrinkled) are smaller and closer, and the taste acrid, instead of bitter.

Gentian enters the composition of the Portland powder, and, like all bitters, is considered as antiarthritic. It is recommended in intermittents *with* the bark, when there is any weakness of the stomach, or obstructions in the viscera. We have seen that bitters best merit the title of deobstruents. From this analogy, perhaps, Plenck recommends it in scrofula; and all bitters are in some degree anthelmintic.

GENU.—Page 703, col. 1, line 15; "*flexion pulled down.*"—See TIBIA FEMUR and PATELLA. There are occasionally some soft, elastic tumours of the knee which are painful on motion. These are sometimes relieved by common volatile linament; sometimes by blisters, but more frequently by a plaster of the gum ammoniac, softened by vinegar of squills. See HYDRARTHUS.

GEOFFRÆA INERMIS.—Page 704, col. 1, line 31; "*powerful anthelmintic.*"—There are two varieties of this bark; one is paler than the other, and more active, inducing violent griping and copious stools. The second is of a darker colour, resembling cassia lignea. The descriptions vary greatly. Chamberlain describes

,t of an ash colour, occasionally spotted with reddish brown marks, the epidermis easily slipping off, while the bark beneath, if dry, resembles rusty iron. In external appearance, from this account, it resembles cascarilla. The smell is so nauseous that it has been called *bilge water tree*. The Indians distinguish the male from the female tree, and think the former the weakest; but no marks of distinction are known. Dr. Wright seems to consider it, with reason, as a narcotic, nor does its occasional cathartic power oppose this opinion. The distilled water is acrid, and of a nauseous smell. The extract from six drams amounted to one dram, bitter, and somewhat acrid. The tincture is of the colour of rhenish, and its extract from the same quantity was only twenty-eight grains. The acrimony remains long on the fauces, and the gum is intimately united with the resin. With martial vitriol the colour is a yellow purple, never black.

GEOFFROYA.—Page 704, col. 2, line 10; "*Surinamensis*."—We owe the knowledge of this bark to an American physician, *Macari*, who observed its effects on a negro slave, and prevailed on the governor to purchase the secret. It was first put into the hands of an apothecary at Utrecht, Juliaans, with specimens of the plant, who freely communicated what he knew to several physicians of Holland. The chief part of our account we shall select from Bondt's Dissertatio de Cortice Geoffreæ Surinamensis cum Tabulis.

Some caution is necessary to distinguish this bark from another, called *tinkihonde*, which is narcotic and inebriating, and which, by the way, has been sold for the mezereon bark. The genuine bark is separated in longitudinal, plane pieces, about a foot long, and some inches broad, weighty, and differing in thickness according to the age and part of the tree from whence it is taken. It is covered by ash-coloured lichens; but the epidermis is red, or a brownish purple, intermixed, according to its age, with an ash-coloured hue. Under this, its structure is filamentous, lamellated, of an iron colour, mixed with striæ or spots of a deeper red. Cut transversely it shines, and is variegated: near the wood it is tinged of a dark purple, variegated with white spots. When powdered it is of a pale cinnamon colour. When recent only, its smell is nauseous, taste slightly bitter, and somewhat austere; but the bitterness is stronger in the dark purple part.

By distillation the water resembles that of the g. inermis: the more saturated decoction, after filtering, is of a brownish red; but to extract all the active particles, the boiling must be continued for two hours. The watery extract has a sharp, bitter taste, and, during inspissation, smells like bitter almonds; eight ounces of bark produce an ounce and two drams of extract of the consistence of honey, with more than three drams of pellicles. The tincture is of a deep red, and from the same quantity one dram twenty-four grains of a friable bitterish extract is only obtained. Each ounce of the bark contains ten grains of oxalated lime, sometimes called the *earth of rhubarb*.

This bark is chiefly useful in the destruction of lumbrici, though it is also injurious to tænia and ascarides. It is not only cathartic, but diuretic; and the last quality it possesses in so great a degree as often to excite strangury. The worms are sometimes discharged alive, apparently escaping from the poison, of whose nature they seem apprized. Though in general safe, it sometimes excites considerable disturbances, as nausea, vomiting, anxiety, faintness, &c.; but these chiefly happen when the dose is too large, or when the medicine fails to loosen the belly. It is more easily borne by children; but the effects on the bladder are most sensibly felt by elderly persons. The effects on the bowels often produce tenesmus, with bloody striæ.

From observing its effects in worms it has been given in those cases where the stomach, from weakness, is loaded with mucus, in quartans, leucophlegmasia, anasarca, " nephritis from pituita," and in tussis convulsiva. In anasarca it has sometimes failed; but has been supposed an useful addition to other medicines in this disease. About three drams, boiled in a sufficient quantity of water to strain off eight ounces, is a sufficient dose for an adult, to be taken in the morning: it must be, of course, lessened, according to the age. This must be continued for four days, and, if the worms do not come off, an active cathartic must be taken. Some practitioners make the decoction stronger, and others add a proportion of spirit to the water at the end of the coction. The watery extract may be given in a dose of twenty-four grains, and the spirituous watery extract has been used, it is said, with success in scrofula and affections of the glands. A tincture, made with an ounce of the bark, is directed in a dose of sixty drops; and the resin is given to children from three grains to eight, to an adult in one of a scruple. The powder is seldom used: it has been exhibited with extract of wormwood in pills, or in an electuary with currant jelly. In ascarides, an ounce of the bark has been boiled in a sufficient quantity of water to strain off six ounces, and thrown up as a clyster.

GERANIUM SANGUINARIUM.—Page 705, col 1, line 1; "*remains in the extract*."—The leaves have been applied to erysipelatous swellings, in tinea, and in cancer (Sennertus). In hæmorrhages the powder sprinkled on the part is said to have been useful, and snuffed up the nostril to have relieved epistaxis. At Montpelier it was a favourite remedy in icterus, and, like other astringents, has been given in nephritis and calculus, with perhaps equal success.

GERMEN, the SEED-BUD, according to Linnæus the basis of the pistillum, containing the rudiments of the seeds, and gradually increasing to the seed vessel; by analogy, the vegetable ovarium. In Pliny, it is synonymous with GEMMA, q. v.

GERMINATION, the period which the seed takes to rise, after being committed to the earth. This differs greatly in different seeds, and sometimes seems to depend on the air; for purslane rises before lettuce in vacuo, and after it in the open air. Seeds preserve their germinating virtue for a considerable time, and, if this is not lost, the form and appearances are not seemingly affected by the delay. Some poppies, now before our eyes, are as full and beautiful as their parents were twenty years since, from which time they have lain in the earth. Adanson contends that the seeds of the mimosa pudica preserve their germinating power for thirty years.

GEUM RIVALE.—Page 705, col. 2, line 41; "*specific for intermittents.*"—The root is brown or red, cylindrical, about the thickness of a goose quill, sometimes branched above, and at its extremity sending out filiform fibres. An ounce of the dry root yields three drams of watery and two of spirituous extract. Each is saline and austere. It is singular, that, though known since the time of Kalm's publication of his Travels in America, it has not found its way into any pharmacopœia, except the Swedish, especially as Bergius, in the Stockholm Transactions, has given a series of experiments on its use. He found the geum rivale, though not "a specific in intermittents," highly useful in this complaint, especially after due evacuations. It was also of considerable service in diarrhœas of long continuance, in hæmorrhages of the uterus, excessive discharges of the hæmorrhoids, and other diseases arising from a weakness of the stomach. Other authors have found it useful in slight diarrhœas; but not in dysentery.

GIBBER.—Page 706, col. 2, line 50; "*faulty arrangement of the vertebræ.*"—Acrimony, as usual, has been accused as the cause of distorted spine; and Pouteau, in his posthumous works, has attributed it to variolous, rubeolous, and rheumatic acrimony, omitting, if it deserve the name, the principal, the scrofulous. In fact, we find no traces of its arising from metastasis, nor from suppressed discharges, except as they produce debility, which is one of its principal causes. A rickety habit often occasions diseases of the vertebræ as of the other bones; and excessive fatigue, particularly in those labours which require a bent posture, as well as straight ligatures on children, is a common cause. Triller has attributed it to nephritis See DISTORTIO.

See Halleri Opuscula Pathologica, Obs. 12, 13; Ejusdem Gibbi Descriptio; Morgagni de Sedibus, &c. xvii. 31, &c.; and lxii. 11.; Petit Maladies des Os, tom. ii.; Camper Demonstrationes Anatomico-Pathologicæ, ii. 3.

GINGIVÆ.—Page 707, col. 2, line 41; "*diluted with water.*"—Cancer of the gums seems, in some countries, to be no uncommon complaint, and an instance is recorded of its arising from the pressure of a tobacco pipe. They often shrink from the teeth, independent of the pressure of tartar, appearing to decay without any cause, and are sometimes eroded, it is said, from acrimony in the bowels. A fungus is no unfrequent occurrence (Memoires de l'Academie de Chirurgerie, v. 14). A gangrene in the gums occurs often, it is remarked, in Paris, particularly in the Foundling Hospital. Mem. de l'Acad. de Chirur. v. 381, 396. See PARULIS and EPULIS.

GLUTÆUS MINIMUS.—Page 710, col. 1, line 47; "*abductor of the thigh.*"—Between each glutæus and the trochanter, bursæ mucosæ are usually interposed.

GLUTEN.—Page 713, col. 1, line 50; "*firmness to its texture.*"—It is an elastic, ductile, seemingly fibrous or membranous substance, insipid, slightly soluble in alcohol, and alkalis, insoluble in water, and subject to putrefaction. If gently dried, it is hard, semitransparent, and breaks, with a smooth fracture. It consists of hydrogen, carbone, and azote.

GLYCYRRHYZA ECHINATA, Lin. Systema Vegetabilium, 557, differs in no respect from the former, and is used in Russia for it. Indeed, it appears that it was not only the liquorice of the ancients (Dioscorides Materia Medica, iii. 7), for the description of the fruit does not agree with that of Dioscorides; but it is probably the plant which furnishes the liquorice we receive chiefly from Russia. The juice of either is not susceptible of fermentation, and perhaps the sweet portion may be found to resemble manna. The inspissated juice is disagreeably bitter.

GRACILIS.—Page 715, col. 1, line 47; "*thin and flat muscles.*"—The muscle chiefly termed *gracilis* is the *rectus internus femoris*, a long, strait, slender muscle immediately under the integuments, at the inner part of the thigh, rising by a broad, thin tendon from the anterior part of the ischium and pubis, terminating above the knee in a slender, roundish tendon, which soon becomes flatter, and is inserted into the middle of the tibia, behind and under the sartorius. Under the tendons of this and the rectus there is a large bursa mucosa: it contributes to bend the thigh inwards.

GRAMEN CANINUM.—Page 716, col. 2, line 30; "*variously bent and interwoven.*"—There is little accuracy in the collectors of herbs to select the true variety, which is, in fact, the *α. muticum*; but they often take the roots of the lollium perenne; in this, however, the calyx is monophyllous, not diphyllous, and the spiculæ are on the sides, not on the surface. The panicum dactylon is occasionally taken; but there is little injury from either error.

A pound of the root yields about five ounces of expressed juice, and the saccharine matter which it contains renders it susceptible of fermentation, though the taste of the vinous liquor is not pleasant. The fœcula which can be produced from them is soluble in boiling water, and jellies on cooling. Though the juice will not concrete into sugar, yet, with the nitric acid, the saccharine may be procured from it.

A ptisan, prepared from grass roots, is a common drink among the French in fevers, and in the Boerhaavian school they were highly extolled as medicines for resolving visceral obstructions. In later periods, they have been considered as particularly useful in jaundice and intermittents. Tode Bibliotheca.

GRAMINA, GRASSES, one of the seven natural families into which vegetables are divided. They are defined, "plants with simple leaves, a jointed stem, a husky calyx (*gluma*), and a single seed." In the sexual system, they are chiefly contained in the second order of the third class. The same name is also given by Linnæus to the fourth order of his fragments.

GRATIOLA.—Page 717, col. 2, line 36; "*than the plant itself.*"—From sixteen ounces of the dry herb four ounces and two drams of the watery extract were procured: spirit extracted only forty-five grains, so that water is its proper menstruum. Besides milk, aromatics, liquorice, sugar, and raisins have been employed as correctors of the virulence of this medicine. The watery extract acts also as a diuretic, and, it is said, as a resolvent. It is, therefore, used in dropsies, particularly in those

where there is reason to suppose that visceral obstructions have been the cause. Externally the leaves are used as vulneraries, and, in *recent* wounds, are said to act as a warm fomentation. They are applied as resolvents in tumours of the mammæ, from a collection of milk, as well as in gouty and rheumatic swellings.

The root chiefly alluded to at the end of the article is cylindrical, of the thickness of a quill, geniculated, white, horizontal, with descending fibres. It is intensely bitter, with a strong sensation of astringency. Twelve drams produce two and a half drams of watery extract, of which from fifteen to twenty-four grains purge more mildly than the extract of the leaves. Spirit extracts less than water. Many of the observations respecting the virtues of the leaves were apparently taken from experiments made with the root.

GRUINALES, (from *grus, a crane*), the nineteenth order of Linnæus' fragments, consisting of the different geraniums, and a few other plants analogous to them.

GRUTUM, a hard white tubercle of the skin, resembling in size and appearance a millet seed.

GUAIACUM.—Page 719, col. 1, line 35; "*but wholly to spirits.*"—It is more convenient to import it with the bark untouched. It soon burns on the approach of flame, and throws out a large quantity of resin. When, after cutting or rasping, it is exposed to the open air, the brown portion assumes a bluish green colour. The resin is so intimately united with the gum, that the decoction or tincture contains a large share of each; but the resin is generally most copious in the wood. The actual quantity and the proportions have differed in the hands of different chemists. Neumann seems to have obtained the largest quantity, Lewis the least. The acrimony in either extract is much greater than in the decoction.

The bark is ponderous, somewhat more than a line in thickness, apparently formed of different laminæ, which can be easily separated, rough externally, and divided by numerous fissures. It is variegated with dark and yellow-grey spots, internally grey or yellowish; in fragments of a pale brown. Murray thinks it more bitter and acrimonious than the wood: Lewis the contrary. It contains less resin than the wood, but more gum. The bark was for a long time thought more efficacious than the wood; for which reason Linnæus omits the latter entirely.

The use and the value of the guaiacum in lues is now sufficiently established, and we need not enlarge on the numerous and contrary opinions that have prevailed on the subject. In gout and rheumatism the gum is preferred, and it is generally considered that the spirituous menstruum adds greatly to the efficacy of the remedy. Berger, however, in the Copenhagen Transactions, combines it with gum-arabic, and he found it highly salutary in these complaints, and in angina pectoris, which he considers as of a gouty origin. Theden prefers uniting it with soap, others with antimonials, asafœtida, &c., according to the constitution of the patient, or the particular form of the complaint.

The other diseases for which guaiacum has been recommended are those supposed to be owing to the imaginary PITUITA, q. v.; as asthma, coryza, leucophlegmatia, mucous diarrhœa, &c. Losecke recommends it in phthisis, apparently in those relaxed states when the expectoration is checked from debility. In palsy, cancer, caries, and exostosis of the bones, it has had its advocates, led either by analogy from its use in lues, or by their connection with this disease as their source.

GUMMI ARABICUM.—Page 720, col. 2, line 63; "*than the former.*"—See MUCILAGE, Appendix.

GUTTA.—Page 722, col. 1, line 40; "*quantity administered.*"—We find, from some late medical journals, that in the specimen of the new pharmacopœia now circulating among the members of the college, that drops are to be measured by graduated phials, a plan peculiarly proper; nor can there be any doubt of the nicety of the divisions in a country where the graduation of astronomical instruments is conducted with such minute accuracy. We have already observed (see ARTHRITIS) that *gutta* is the probable etymon of gout.

GUTTÆ NIGRÆ.—Page 722, col. 1, line 63; "*in another article.*"—From a more recent and careful examination, we have little doubt but that they are merely a diffusion of a nicely prepared aqueous extract of opium.

GUTTA ROSACEA.—Page 722, col. 2, line 34; "*called the golden ointment.*"—In the golden ointment the argentum is lowered with a large proportion, seven-eighths, of axunge, or some saturnine ointment.

GYPSUM is a calcareous sulphat, often styled selenite, plaster of Paris, alabaster, or, in a form approaching to crystalisation, stalactite, &c. In other forms it is more perfectly crystalised. One hundred parts contain thirty of sulphuric acid, thirty-two of pure earth, and thirty-eight of water. Selenite seems to be produced by the decomposition of pyrites, and its crystals are compressed tetrahedral rhomboidal prisms; hexaedral prisms truncated at their summit; and decahedral rhomboids. It is sometimes coloured with iron, and from its heterogeneous contents the varieties in its specific gravity may arise, which varies from 2.32 to 1.87. It is soluble in about 500 times its weight of water, in 60° of Fahrenheit. We have corrected already, in this Appendix, the opinion hastily offered in the work, that selenite, the distinguishing ingredient of hard waters, is not injurious to the constitution. We have since found it to be so. We know of no other connection of gypsum with medicine except its employment in making anatomical casts.

H

HÆMATOCELE.—Page 724, col. 2, line 19; "*but the operation is generally necessary.*"—The operation alluded to is laying the sac open as for hydrocele.

HÆMOPTYSIS VICARIA.—Page 725, col. 2, line 51; "*the event will probably be fatal.*"—The source of the blood can be sometimes distinctly perceived by a slight pain or tickling at one part of the thorax; and we can

often judge that the wounded vessel is near the top of the trachea, by the facility with which it comes up. But each prognostic is fallacious, though the latter is most so. A tickling of the epiglottis is generally felt, whatever part of the internal surface of the lungs is affected. Blood is sometimes brought up in streaks, with some very viscid phlegm. This appearance is not always dangerous; for it arises from the violence with which the mucus is separated from the follicle; but, on the other hand, if it come up without violence, and evidently from the lungs, however small the quantity, it is an alarming symptom: the alarm is greater if there be a continual drain. In some instances it has continued for many years without danger; nor have we been always able to distinguish such cases at first, except from the time of life: after thirty-five it is seldom dangerous. Hæmoptysis is hereditary, so far as it depends on a similarity of form, which is often propagated from the parents; and it is the disease of particular trades, where the labour confines the workmen to a stooping posture, which impedes the circulation through the lungs. Stoll particularly enumerates among these, weavers, shoemakers, and taylors (Ratio Medendi, iii. 11). It is sometimes periodical; but this chiefly happens when it is the vicarious discharge of the catamenia. The substances discharged with the blood are sometimes bloody masses; membranes apparently of a new formation, in consequence of inflammation, not unlike the decidua, small portions of vessels, calculi, hydatids, &c.

We have mentioned, in the article PHTHISIS, q. v., and it ought to have claimed our attention in this place, that it is often caused by infarctions of the liver, and probably by diseases of the other abdominal viscera, if, from their vicinity, the inflammation can be communicated, or from their bulk, the circulation through the lungs is impeded. We have a striking instance of this effect in Stoll (Ratio Medendi, iii. 21), where hæmoptysis was relieved by the operation of paracentesis. Violent exertions operate in the same way; for the circulation is not free during strong inspiration. An aneurism of the pulmonary artery may undoubtedly produce it; but there is an instance of its arising from one of the subclavian; and indeed an impediment to the circulation above must always determine a larger quantity of blood into the bronchial artery. We have a case in the Memoires de Paris of an aneurism opening in the trachea; and, in Stark's works, of another opening into a vomica. Suppressed evacuations frequently induce it, particularly those from the uterus, and it is said the hæmorrhoidal vessels. These apparently act in part by inducing plethora, which is undoubtedly often a cause (Stoll); and we have seen a slight discharge of blood, almost constant, from full living, with want of exercise. Hæmoptysis often attends, as remarked in the article, inflammation of the lungs, and an habitual discharge of blood from the lungs is mentioned by Stoll as an evidence of the existence of a latent chronic inflammation. A dissolved state of the blood is a well known cause of this as well as other hæmorrhages.

The use of emetics is sanctioned, we perceive, by the authority of Stoll, when followed by laxatives: in his opinion bleeding is seldom advantageous, often injurious. Among the tonics, the arnica, the blue and white vitriol in small doses; among the astringents the vitriolated iron and the mineral acids have been omitted; among the sedatives, cold, the saturnine salts, the hyoscyamus, and the dulcamara. The blue and white vitriol have appeared to be useful in doses somewhat below even the nauseating, though perhaps they should be so great as to produce some effect of this kind. The saturnine salts, particularly the plumbum acetatum, may certainly be exhibited in doses far beyond those which modern timidity has sanctioned; and five grains twice a day at least may be given with little danger, if the bowels are kept free by castor oil. We have often found it useful. Astringents are, in general, reprobated by the best practitioners, or at least are so cautiously guarded as almost to preclude their use. Cold is a remedy of the highest importance; and cold free air, cold drinks, probably cold clysters, will be often serviceable. Mercury is mentioned by many authors; but calomel is chiefly given in those cases where bilious accumulations, or infarctions of the liver, appear to produce the disease; and Bang, in the Copenhagen Transactions, mentions its yielding to a spontaneous salivation. We recollect one case of obstinate hæmoptysis which resisted every medicine, when it was suggested that it might be owing to a venereal complaint. Mercury was immediately given for the latter; but, however it may be explained, the bleeding from the lungs never returned.

HÆMORRHAGIA INTERNA. Vessels are often ruptured where the blood cannot escape, and it is poured into different cavities, particularly into those of the cranium, thorax, stomach, intestines, uterus, and vesica. This accident frequently happens from falls, or other violence; but more often from irregular determinations of the fluids in a system of vessels naturally weak (Morgagni de Sedibus, &c. liii. 7, 8; liv. 18, 19; Calvet de Hæmorrhagiis Internis). The symptoms of blood discharged into the cavities are in general sufficiently obvious from the injury experienced in their functions. In the head the hæmorrhage produces apoplexy; in the lungs it excites dyspnœa and cough, by which at least a part is brought up; in the pericardium syncope; in the stomach sickness and vomiting; in the intestines fulness, with a sanguineous discharge; in the cavity of the abdomen symptoms of ascites, with languor, anxiety, and cold sweats; from the uterus and vesica it is soon, in part, discharged; but in the former it is sometimes accumulated from the imperforated state of the more external parts. When none of these particular symptoms occur, the occasional cause, with subsequent faintness, will at once point out with great probability the real disease.

The causes of internal hæmorrhage in the cavity of the abdomen are a rupture of the larger vessels, often aneurism, sometimes wounds. Jenty mentions a case where the vena cava was ruptured from a distortion of the spine; and Sandifort one where the stomach and vasa brevia were ruptured (Observationes Anatomico-pathologicæ, iv. 5). Morgagni records a hæmorrhage between the laminæ of the mediastinum (l. c. xxvi. 40), and Lieutaud an effusion of blood in the interstices of the abdominal muscles.

Hæmorrhage seems more frequently to have happened within the pericardium than we should have suspected, not only from a rupture of the coronary arteries, but from wounds or rupture of the vena cava

near its entrance into the heart. In cavity of the thorax it chiefly happens from aneurism, in one instance from a rupture in the vena azygos. In the intestines it has occasionally occurred from poisons, from the acrid discharges of dysentery and diarrhœa, or from plethora. With moderate care this disease is seldom dangerous. When the blood is discharged from the vessels of the kidneys or bladder, so as to distend the bladder, it often produces unconquerable strangury; for, when in a large proportion compared to the urine, we suspect that it coagulates in the vesica, and we have turned a catheter round its cavity, apparently immersed in cruor.

In all these cases it is first necessary to prevent the discharge by every remedy recommended in the article HÆMORRHAGIA, and the most appropriate methods must then be employed to discharge the blood. These will be the same as to discharge water or purulent matter. In the greater number, however, of these complaints, the fatal termination is at no great distance.

HÆMORRHAGIA NASI.—Page 730, col. 1, line 3; "*the young and the plethoric.*"—The frequent recurrence of this hæmorrhage, and the quantities of blood lost, *if medical records do not lie*, is immense, and it is said to be often fatal.

HÆMORRHOIDES.—Page 732, col. 1, line 46; "*by a recurrence of the hæmorrhage.*"—The discharge is sometimes periodical, sometimes so profuse that if it does not immediately endanger life, it lays the foundation for every asthenic disease, particularly dropsy. The hæmorrhage is occasionally hereditary, and has appeared, it is said, at an early age, particularly in gouty habits. Gout, indeed, is reckoned among the causes; and Petit, in his posthumous works, mentions its connection with obstructed liver.

There is little to be added to the remedies mentioned. We find cold clysters recommended in the Medical Journal, and cupping glasses have been applied to the mammæ when the discharge has been profuse. Pessaries of cucumber and melon have been recommended; and Morgagni mentions pessaries of gourds. De Sedibus, &c. xxxii. 12.

The blind piles, viz. those which do not discharge blood, require nearly the same conduct; but warm vapours may be received by sitting over a pan containing hot water, impregnated with any vegetable which may be preferred: the water, however, is equally beneficial with any impregnation. Some essential oils, as the oil of juniper, and common oil, in which beetles have been boiled, are occasionally applied; but the most singular remedy is the sea mice, the eggs of the ray. See MUS MARINUS.

On the salubrity of hæmorrhoids, see Hoffmann de Salubritate Fluxus Hæmorrhoidalis; Stahl de Consultâ Utilitate Hæmorrhoidum; Alberti de Hæmorrhoidibus Medicina Hypochondriacorum, et Ej. de Hæmorrhoidibus Longevitatis causis; Triller de Hæmorrhoidum fluxu, nunc Salutari nunc Noxio; Richter Censura nimiæ laudis Hæmorrhoidum; De Overcamp Fallax Hæmorrhoidum Utilitas.

On hæmorrhoids, in general, see Hamberger, Doctrina Generalis Hæmorrhoidum; Eyselius de Hæmorrhoidibus Secundum et præter Naturam; Alberti Dissertationes Practicæ de Hæmorrhoidibus; De Haen Theses Pathologicæ de Hæmorrhoidibus.

HEDERA ARBOREA.—Page 736, col. 2, line 43; "*extractum purgans.*"—The leaves are not only nauseous, but bitter and austere, and are applied to burns, erysipelas, and even to inflamed eyes. We ought to add, that the author who recommends them in atrophy (Nebel in the Acta Naturæ Curiosorum), orders the medicine to be taken only at full moon! The resin is brought from the east, in pretty large masses, compact, semipellucid, of a reddish brown, with ferrugineous spots or veins. It burns on approaching flame, is of a resinous, subastringent taste, and, when rubbed, of an agreeable smell. About three-fourths are dissolved in spirit, and the tincture is of a reddish brown. It is supposed to resolve viscid humours, and assist the discharge of the catamenia. The berries were formerly considered as emetic and cathartic, but are never now employed.

HEDERA TERRESTRIS.—Page 736, col. 2, line 63; "*bitterish, warm taste.*"—The watery extract is mildly bitter; the spirituous more evidently acrid. This, however, Cartheuser denies, and says that the former is very acrid after some time, and the latter bitter and balsamic. From its effects on external wounds, it was employed in hectics. Willis and Morton speak highly of its utility; the German and Swedish physicians commend it.

Ground-ivy is certainly diuretic, and on this account has been considered as a lithontriptic: as an errhine it has relieved violent headachs, and as a bitter has been supposed effectual in slighter intermittents, given at the *commencement* of the fit.

HELLEBORUS ALBUS.—Page 738, col. 1, line 60; "*and durable taste.*"—The root is, externally, of an ash colour, internally white; the medullary part grey, and less compact, the rest firmer and paler. From a base of about an inch in diameter, it is contracted almost to a point. Externally it is rough, with little protuberances, from whence numerous fibres were derived. Water does not completely extract its virtues; for the aqueous extract is mild, and not more than half the quantity of the plant employed. Spirit leaves a bitter, acrid, extract, and from an ounce six drams were procured, of which scarcely sixteen grains are pure resin; but the most pungent particles in both escape during the process.

The experience of the ancients with their hellebore is of little advantage to us, since, whatever it may have been, it certainly differs from ours. We have employed the white hellebore in mania and melancholia with some success, as its active powers in exciting vomiting and stools seem to show that it will be useful in such complaints. In dropsies it is given with much success in Siberia. A decoction is drank daily for twelve or fourteen days, so as to produce violent vomiting and purging. (Gmelin.) The Janisees, in open foul ulcers of the feet, take the root; and about thirty-five grains of it mixed with honey are given in Russia to destroy worms. (Pallas.) The country people sprinkle the dry root on the ulcers of oxen, produced by the œstrus; and in England it is given to dogs in hydrophobia: Hellebore is, however, poisonous to almost every animal.

HELLEBORUS NIGER.—Page 739, col. 1, line 5;

" *its powers are lost.*"—The chemical analysis conducted by Boulduc was probably that of the helleborus viridis or fœtidus; for the plants were collected in Switzerland, where the true black hellebore does not grow (Memoires de l'Academie de Paris, 1701, 192). The gummy portion of the true kind seems to constitute one half of its weight; but is very intimately connected with the resin, so that spirit dissolves nearly as much as water, and its oil adheres so closely to the resin that the latter is generally tenacious. The remainder consists chiefly of earth; for it contains a very small proportion only of salt. Its more active parts are, however, lost in boiling, as by this means its purgative quality disappears, but is found in the distilled water.

There is a great difference of opinion in authors respecting its dose and effects, so that they often used roots too long kept, or those of other plants: the utmost caution is, therefore, necessary in the choice, or the medicine should be perhaps wholly neglected. For the reasons already stated, we cannot avail ourselves of the experience of the ancients; and, from the variations just noticed, are by no means confident of the observations of the moderns: from our own experience we can say nothing. In melancholy, mania, amœnorrhœa, a suppression of the hæmorrhoidal discharge, in dropsy (v. ASCITES), quartan fevers, lepra, and other cutaneous diseases, as well as in worms, it has been celebrated by authors of credit, perhaps justly.

HERMAPHRODITUS.—Page 744, col. 1, line 24; " *supposed species of the human kind.*"—See Hunter in the Philosophical Transactions, vol. 69; Edinburgh Medical and Physical Journal, N° 3.

HERPES.—Page 748, col. 2, line 41; " *and then disappear.*"—Herpetic eruptions are said to be hereditary, and sometimes contagious; but of contagion there is considerable doubt. They are sometimes critical and salutary; but the chronic herpes is seldom so, though as an established discharge its repulsion is dangerous, inducing cough, dyspnœa, and hectic (Aaschow in the Copenhagen Transactions, vol. i.; Haller Commentaria nova Gottingens, viii. 4). Herpes is often a mark of decayed constitution, of visceral infarctions, of saburral accumulations in the stomach, and of scrofula (Stoll Prælect. i. 45). Helstein, in the Medical Commentaries, attributes it to an accidental impregnation with arsenic, of mercury used in the preparation for the small-pox. It is impossible to lay down any general plan of cure. The medicines employed have been as various as the circumstances of the patients. All the narcotics, the metallic tonics, the milder sudorifics, mercury, and the mineral acids, have been employed. The milder diaphoretics, with mercury gradually supporting the strength, when the disease occurs in debilitated constitutions, offer the most probable means of relief. The particular kind are enumerated with their causes and treatment in the article.

HIERACIUM MINUS.—Page 751, col. 1, line 2, for *hyoseris* read *hypochæris.*

HILUM. A mark or scar in a seed, the point at which the seed-vessel or receptacle is attached, and by which the nourishment contributing to the evolution of the seed is conveyed. Each part of the seed, therefore, meets at the hilum, or rather every organised part divaricates from it. In describing the form or external portions of the seed the hilum is the base, and when the seed is ripe the connection, like the umbilical cord, is thrown off; but, when committed to the earth, the hilum resumes its office, and through it the nourishment assisting the germination is conveyed.

HIPPOCASTANUM.—Page 751, col. 2, line 28; " *the administration of laxatives.*"—On the whole, as a febrifuge the bark is inferior to the Peruvian; and though as an antiseptic its power is considerable, it will not restore substances, most slightly putrid, to their former state. The powder is preferred, if the stomach can bear it; but the dose is large, and usually exceeds a dram, so that the extract is preferred. In bilious vomiting, with violent tormina; in bilious fever, with copious evacuations; in pleurisy and peripneumony, after proper evacuations; in gleet; in convulsions and tremors, it has been of service. Externally, with lime water, it has relieved foul ulcers, and, boiled in wine, has been useful in gangrene from œdema.

HIPPURUS. See EQUISETUM.

HORMINUM.—Page 762, col. 1, line 41; " *salvia horminum.*"—The species is *salvia sclarea* Lin. Sp. Pl. 38.

HUMERALIS ARTERIA.—Page 762, col. 2, line 22; " *to which it is distributed.*"—When the axillary artery has passed the tendon of the great pectoral muscle it is styled *humeral* or brachial, and retains the name till its division into *radial* and *ulnar.* In this course it gives off the *superior profunda,* which goes round the back of the arm to the exterior muscles; the *inferior profunda,* and the *ramus anastomaticus major.*

HUMERI OS.—Page 762, col. 2, line 33; " *neck of the humerus.*"—Its upper extremity is formed somewhat laterally and internally into a large, round, smooth head, which rotates in what is styled the glenoid cavity of the scapula. There is a circular fossa round its basis, deepest externally and before, forming the neck of the bone, and to this the capsular ligament is fixed, strengthened by a strong membrane, extending to the upper edge of the glenoid cavity, and the coracoid process of the scapula, as well as by the tendinous expansion of the different muscles. The cartilage which covers the head is much thicker in the middle than at the sides, so that it appears much more convex in the recent subject than in the skeleton. An irregular, oblong protuberance is placed at the back of the head of the bone, from which it is separated by a groove that makes part of the neck. Its upper surface is the place of insertion of the supra spinalis muscle; the middle of the infra spinalis, and the lowest, which is a little behind, of the teres minor. At a smaller tuberosity, situated between this and the head of the bone, the subscapularis is inserted: between them is a deep groove for the tendinous head of the biceps brachii, which is continued in the cylindrical body of the bone, extending downwards, in an oblique direction, about the fourth part of its length. It is lined with a substance resembling cartilage, but really tendinous, and at its edges different muscles are inserted. Somewhat lower,

towards the external and anterior side, it rises in a rough ridge for the insertion of the deltoid; and on each side of the ridge the bone is smooth and flat, for the lodgment of the brachiæus internus muscle; and behind the middle of its outermost side is a channel for the transmission of vessels into the substance of the bone. Near the inner side, and a little lower, is a similar channel for the same purpose. It becomes at its lower extremity broader and flatter, affording two surfaces, of which the anterior is broadest, and somewhat convex, the posterior narrower and smoother.

The two outermost processes, which terminate the os humeri, are called *condyles*, though not designed for the articulation of the bone. They are rough, irregular protuberances on each side of the bone for the insertion of ligaments and muscles. The external condyle is somewhat forwarder than the internal, which, on the other hand, is longer and more protuberant than the other. From each a ridge is continued upward; and in the interval between them are placed the two articulating processes contiguous to each other, and covered with cartilage. From the manner in which the ulna moves in this process, it is called the *trochlea*, or pulley. The side of the pulley towards the little head is the highest; the other contiguous to the condyle slants from within outwards, so that when the fore arm is fully extended, it does not form a strait line with the os humeri; and the hand, when the joint is bent, comes to the fore part of the breast. The cavities of the root of these processes, on the anterior surface, are divided into two, the external of which receives the end of the radius, and the internal lodges the coronoid process of the ulna in the flexion of the fore-arm.

The cavity on the posterior surface, as the basis of the pulley, is much larger, and lodges the olecranon, when the arm is extended. In the fœtus both ends are cartilaginous, and the large head with the two tubercles above, the two condyles, and the two articulating processes below, become epiphyses before they are united to the body of the bone.

The humerus, like other bones, is subject to fractures, dislocation, caries, &c. It has been sometimes broken by the force of its own muscles; and a fracture, when in an oblique direction, is with difficulty cured. Mr. White records a case in the Philosophical Transactions where a callus was prevented by some interposed body, which was removed by an operation. It is a judicious remark of Trecourt, in the Memoirs of Surgery, that the humerus when fractured, is elongated by its weight, and that therefore extension was unnecessary.

Luxations are often attended with laceration of the ligament, and reduction is consequently difficult, or impossible (Medical Observations and Inquiries, ii. 29). The strength and force of the muscles offer strong impediments; but we have a case in the Philosophical Transactions, where, during the languor excited by a large dose of tartarised antimony, it was readily effected; and an Italian author succeeded by the continued application of emollients for many days, and then bleeding ad deliquium. Might not tobacco clysters answer the same purpose, with less real loss of strength?

The head of the bone has been extirpated, and a considerable degree of motion retained. Cases of this kind occur in the Philosophical Transactions for 1774 and 1779; in Mr. Park's account of his New Method, &c.; and in Mr. White's Cases. Caries of the humerus has been often cured; in one instance, we recollect, from the use of the trepan.

HYBERNACULUM, a winter lodgment. It is applied to the covering and defence of a tender vegetable embryo, and is either a bud (*gemma*), or a bulb (*bulbus*), as it is above or covered with the ground.

HYDROPS.—Page 774, col. 2, line 42; "*coagulated lymph.*"—Anatomy has pointed out various sources of this complaint, and the pathologist will find many dissections of this kind in Morgagni's thirty-eighth epistle, and one in his seventieth; in De Haen's Ratio Medendi, Pars xi. 4; and passim. The fluid evacuated has been of almost every colour and consistence; sometimes very viscid and tenacious, with filamentous concretions, sometimes black and fetid, occasionally bloody, sanious, or milky (Willis Pharmaceuticè Rationalis), green, yellowish, or peculiarly acrid. In some instances it is said to have been oily (Guattani); sometimes purulent, very frequently that glairy fluid often discharged from sores, in which the circulation is languid. The fluid discharged in dropsies is often coagulable by heat, sometimes by galls and by the nitrous acid; not, it is said, by the vitriolic, the muriatic, nor the acetous (De Verney Memoires de Paris, 1701, 193). Rouelle found in it soda (Medical Commentaries). The quantity taken by the paracentesis, or by different operations on the same person, is almost incredible. Bianchi informs us that in dropsy the bile is usually pale and insipid; Ridley found it of the consistence of mucus; Morgagni in small quantity, turbid, and viscid. Gall stones were a frequent occurrence.

The chief causes (sometimes effects) of dropsy which anatomy has discovered are diseases of the different viscera. The liver, the gall-ducts, the mesenteric glands, the intestines, the lymphatics of the abdomen, the pancreas, the uterus, the omentum, the kidneys, the peritonæum, the spleen, and the ureters, have been diseased in almost every varied form. In one instance the dura mater adhered with little firmness to the brain (Malacarne Encephalotomia). In the thorax the mediastinum has been found full of fat, the pericardium schirrous, the heart itself diseased in its substance, oppressed with fat, filled with polypi, and distended or contracted by different causes; the valves osseous, cartilaginous, or fleshy; the aorta and coronaries bony or cartilaginous, the large veins ossified, particularly the vena portæ. Hydatids in different parts are no uncommon occurrence.

The cure is, in general, doubtful; for the greater number of dropsies are in the end fatal. The bad signs are dark spots, rather vibices than petechiæ, on the legs, or other swollen parts; aphthæ; a constant burning heat at the sternum (Storck An. i. 85, 88); an acrid serous effusion from the skin; offensive stools; and sudden metastases to the head or breast.

The remote causes of dropsy are various. Every cause of debility induces it, and it is often the closing symptom of the last scene. Among causes of debility are repressed gout, repressed evacuations; among which Stoll reckons a too sudden stoppage of the dysenteric and the hæmorrhoidal discharges; damp, marshy situations; unalimentary food (Willis); fevers, particularly asthenic ones, and intermittents checked before evacuations have been properly procured; cold; excessive hæ-

morrhages, or other discharges of blood; hydatids (De Haen Ratio Medendi, v. 44; Morgagni de Sedibus, xxxviii. 35, 40, 41, 43, 71); plethora; cold drinks, particularly when the body is heated; scarlatina; rheumatism (Morgagni, li. 17); and a dissolved state of the blood.

On the cure of dropsies we find little to add. The remedies are indeed numerous, and the list would be extensive; but, if we except the absurd, the trifling, and the superstitious modes of cure, we have not been able to discover any medicine which we have not noticed separately, or in its appropriate group, in the articles ANASARCA, ASCITES, HYDROTHORAX, and HYDROCEPHALUS.

HYDROPS SCROTI.—Page 776, col. 2, line 41; "HYDROCELE."—Though the hydrops scroti is the most common effect of accumulations of water in the cellular substance of the lower extremities, yet it sometimes exists independent of it. Swellings in the groin and the abdomen, pressing on the lymphatics, may occasion the disease, and these it is generally impossible to remove. In suppression of urine, from strictures or stones impacted in the urethra, the canal often bursts below, and the urine escapes into the cellular substance, exciting not only swelling, but erysipelatous inflammation, hastening to gangrene. In the former case, as already mentioned in the article referred to, punctures will relieve, and should inflammation come on, a solution of acetated lead, or, more certainly, one of vitriolated zinc, will be of advantage. In the latter, not only punctures should be made, but the warmest antiseptic discutient fomentations employed, as decoctions of camomile and bark, adding, at the time of the application, highly camphorated spirit; in many cases hot brandy alone. When complicated with lues, mercury externally and internally should be employed, though the disease generally resists every remedy.

HYMENEA.—Page 778, col. 2, line 43; "*the gum anime of the materia medica.*"—It is often confounded with gum copal, which it resembles; but the latter is in smaller, more compact, pieces, and are not covered with the farina. The anime is wholly soluble in alcohol, giving it a bitterish, pungent taste. It has been used in colic, catarrhs, and asthma; in vapour, to relieve rheumatism.

HYOSCIAMUS NIGER.—Page 780, col. 1, line 20; "*without advantage.*"—On referring to Ludwig's Adversaria (vol. i. 71, &c.), we found, as we suspected, a misrepresentation in this passage. The effects which he describes are a copious sweat, tranquil sleep, a serene mind, and strength of body. Some felt in the beginning a weight and pain in the head, with a dulness of sense, and little serpiginous eruptions, sometimes boils, and in one instance a parotid tumour appeared: the urine was more copious, the stools more frequent. The menstrual flux returned, and became irregular; in two women a discharge of saliva and of mucus from the nose came on. He does not deny that the principal disease did not in some measure yield, or that the more troublesome symptoms were not removed; but the relief was not to be put in the slightest competition with the inconvenience; and he adds, that *no one was cured but at the hazard of his life from the deleterious effects of the remedy*, (118).

The author thought that he alone had employed the seeds; but as he has detected the supposed novelties of other practitioners, so he has not spared himself. Platerus united them with other remedies in restraining hæmoptysis and the hæmorrhoidal flux. Boyle preferred them to every other remedy in curing hæmorrhages, and Mayerne ordered them in epilepsy.

The leaves, *externally*, are emollient, resolvent, and sedative. Boiled with vinegar, and with the addition of the oil of bitter almonds, Riverius recommends them as a cataplasm in schirrous liver. Tournefort recommends the leaves, boiled in milk, as an application to gout; or the leaves, softened in the fire, to dissipate nodes of the mammæ from coagulated milk. Other authors have extended their use to rheumatism, and they are sometimes smoked like tobacco in toothach.

HYPERCATHARSIS, HYPEREMESIS, and HYPERDIURESIS, (from ὑπερ, *in excess*). Excessive action of cathartics, emetics, and diuretics.

HYPOÆMA, (from ὑπο, *under*, and αιμα, *blood*); an effusion of blood under the cornea, which often happens in the operation for the cataract, but is of little importance, as it is soon absorbed.

HYPOCHONDRIACUS MORBUS.—Page 781, col. 2, line 49; "*palsy, and apoplexy.*"—The corporeal effects of the causes enumerated are, obstinate costiveness, diminished irritability, and a want of a regular determination to the surface. These changes are the sources of infarcted liver, of diseases of the pancreas, omentum, spleen, and stomach. Bonetus found the pylorus schirrous; Lieutaud the vena portæ greatly dilated: the other abdominal veins are often in the same state. Morgagni found the kidneys diseased (De Sedibus, xxxvi. 21). Whatever produces internal accumulations from a suppression of the cuticular discharge, produces hypochondriasis; and it is, therefore, often the consequence of repelled eruptions and hæmorrhoids, of cosmetics, &c.

In the cure the German physicians have been anxious to bring back the hæmorrhoids by aloetic purgatives, or to supply the discharge by the applications of leeches to the anus. We have not found either method peculiarly successful. Of Kæmpf's visceral clysters we have no experience; but the bitters, called by the Boerhaavians resolvents and deobstruents, that is, the simple bitters, with rhubarb or the neutral salts, are often useful; but no method will avail, except what equally determines to the skin, and relieves the overdistended vessels of the abdominal viscera. The calomel, in the latter view, is often highly useful; but Fourcroy's favourite medicine, oxygenous gas, has failed, we believe, as often as it has been tried.

See Hoffmann de Affectione Hypochondriaca Supplementum, ii. 2; Haller de Malo Hypochondriaco; Bisset's Medical Essays; Cheyne's English Malady; Burton's Anatomy of Melancholy; Pomme Essais sur les Affections Vaporeuses de deux Sexes; Willis Pathologia Affectuum Hysteric. and Hypochondriac. Opera, i.; Stoll Prælectiones, ii. 316; Ej. Ratio Medendi, iv. 371, 401; Stahl de Malo Hypochondriaco-hysterico.

HYSTERITIS. See INFLAMMATIO UTERI.

CURÆ POSTERIORES.

VOLUME II.

I.

ICHTHYOCOLLA.—Page 1, col. 2, line 16; "*smell or taste.*"—See GELATINE, *Appendix.*

ICTERUS.—Page 2, col. 2, line 12; "*more sedentary life.*"—Dissection has discovered the chief defects in the biliary ducts. The ductus hepaticus and choledochus are often free; but the cystic duct is obstructed (De Haen Ratio Medendi Contin., iii 6.) Stoll has also found the cystic duct obstructed, though sometimes all the passages are open. Small tubercles were also discovered in them (Ratio Medendi, iii. 361, &c. 388. iv. 84). The ductus choledochus is sometimes obstructed (Morgagni de Sedibus, &c. xxxvii 10, 35, 38; Stoll iii. 378, 389); and occasionally the hepatic duct. The gall bladder has been obstructed by calcareous concretions, perforated, eroded, schirrous, cartilaginous, and sometimes destroyed. The liver is found to be diseased in almost every way in which it can admit of a change.

Diseases of the neighbouring organs seem to have had an effect in producing this disease. Stoll found the pylorus with a part of the duodenum schirrous and cancerous; the spleen has been found schirrous, and *in one instance wanting* (Zacutus Lusitanus, Prax. admir. iii. obs. 123); the mesentery schirrous or osseous (Stoll); in a single case the diaphragm cartilaginous (Stoll, iii. 386). The blood has been said to be mucilaginous and watery, while the bile was viscid and dark; but this was probably the effect rather than the cause of the disease. The yellowness has been found universally diffused, tinging the bones, the cartilages, the heart, the pericardium, the peritonæum, the brain, and meninges, the semen, and water contained in the abdomen. Borellus tells us that it tinges money in the purse.

Jaundice is said to be often critical in fever; but, if we confine the term with accuracy, this view is erroneous. The yellowness on the skin in these circumstances is transitory only, as well as in new-born children, and arises from a too copious secretion of the bile. That it has been removed by scarlatina and miliaria, as Stoll has remarked, is equally inaccurate, unless it be attributed to the effects of the remedies. The jaundice that appears occasionally epidemic (Cleghorn on the Diseases of Minorca) is more probably owing to a superabundance than an obstruction of bile, as well as the yellowness from concussions of the brain. The arnica, iron, bark, and other tonics, have occasionally been given; but they have, by the best practitioners, been united with tartarised antimony and the neutral salts. Solvents of biliary calculi have been spoken of, and their solution attempted, but with little success. See CALCULUS and LITHONTRIPTICUS.

Page 6, col. 2, line 44; for *Macquer*, read *Marquet.*

IMPERATORIA.—Page 7, col. 2, line 3; "*is said to be an expectorant.*"—The epithet "*divinum*" seems to have been given from its utility in flatulent colics, and its supposed expectorant virtues have rendered it a favourite in asthma. It is also said to be diuretic, and highly useful in intermittents. The chief benefit, however, received from it is as a sialogogue in palsy of the tongue, mixed with aniseseeds. Its stimulus is more readily communicated to its spirit than to water.

INCENDIUM.—Page 9, col. 1, line 30; "*inflammatory tumour.*"—There have been instances of the body being consumed without any access of fire, and Dupont, in his Dissertation de Corporis Humani Incendiis Spontaneis, has collected several instances of this kind, which we might have rejected as incredible, if we had not some well-authenticated accounts of similar events. (See Mortimer in the Philosophical Transactions, 1745, and Wilmer in the same collection for 1774.) In all the instances the person was addicted to drinking spirits, and inflammable air, from their decomposition, is, we know, copiously produced; but the means of inflaming it are not known. An electrical shock might have the effect; but that so great a quantity of electricity could be collected as to produce the inflammation can scarcely be conceived, and its rapid communication to some body in a different state would be required. As inflammable air is light, it is possible that it may be attracted by a candle or the fire, and produce a train which may convey flame to the body. The fact is, however, well established.

INFLAMMATIO.—Page 15, col. 2, line 19; "*dissolved in the serum*".—More mature consideration, and a farther examination, have suggested a different opinion. See PUS.

INFLAMMATIO VENTRICULI.—Page 23, col. 1, line 58; "*external cold.*"—Not only acrid substances, but even deleterious poisons produce this disease, and there are many instances of its arising from nitre in large doses. The stomach is often the seat of misplaced gout, as well as the lungs and intestines, and it frequently suffers from a languid, chronic inflammation, in consequence of repelled eruptions and the use of saturnine cosmetics.

INFUNDIBULIFORMIS. Monopetalous flowers, resembling in shape a funnel, *infundibulum.*

INOMINATA ARTERIA.—Page 33, col. 1, line 45; "*branches to the ilius internus.*"—It is also the first branch given off from the arch of the aorta, which soon divides into the right carotid and subclavian arteries.

INTERCOSTALES NERVI.—Page 37, col. 1, line 31; "See CEREBRUM."—Add, and NERVUS.

INTESTINA.—Page 43, col. 1, line 60; "*stomach and intestines.*"—The intestines are subject to a variety of diseases, of which we have in some degree already spoken, particularly ENTERITIS, ILLIACA PASSIO, INTUS SUSCEPTIO, and HERNIA. They are sometimes found considerably contracted in their diameter, and often as much enlarged; nor is it uncommon to discover numerous contracted portions contiguous to dilated ones. Erosion and excoriation of the intestines are not uncommon after long continued diarrhœas, and sometimes portions of the internal villous coat are apparently thrown off. Sandifort, in his Observationes Anatomico pathologicæ, lib. i. mentions some preternatural appendices which he observed issuing from them. Excrescences, bony or sebaceous, are sometimes discharged from the anus, which had apparently grown from their internal coat; and the latter have been the subjects of frequent observation in old dysenteries. Gangrene has sometimes occurred without preceding inflammation. Stoll (Ratio Medendi, viii. 129) mentions its occurrence, without preceding pain: Haller (Comment. nova Gottingens, viii. 1), and Morgagni (De Sedibus, xxxv. 19, 21) both describe gangrene without being preceded by manifest inflammation. In this complaint we have already observed that a portion of intestine is sometimes thrown off without fatal consequences; a circumstance readily understood, if their convolutions are considered. In one instance, however, the part thrown off was afterwards found to be the caput coli. The intestines have been sometimes perforated, and this has happened from worms, from foreign bodies, &c. In Hautesierk's collection an epidemic is described in which erosion was not uncommon; and we know from the experiment on sheep, that they may be occasionally wounded in emphysema without injury. The intestines are sometimes ruptured from a blow, and the accident is usually fatal. Wounds of the intestines by sharp instruments are, however, often healed. All the intestines are occasionally schirrous, or compressed by enlargement of the contiguous viscera.

IPECACUANHA.—Page 45, col. 1, line 4; "*called bexuguillo.*"—Europe first heard of the ipecacuanha from Piso; but it was scarcely employed until a French physician, Le Gras, who went three times to America, brought some of it to market in 1672. Fourteen years afterwards a French merchant, Grenier, imported it more largely, and associated, in the sale, Helvetius, under whose patronage it was employed with so much success that Louis XIV. purchased the secret. Dekkers speaks of it in high terms, and regrets that it was not to be procured in Holland; and Leibnitz celebrates it in his letter to the Academia Naturæ Curiosorum. It was at first used almost exclusively in diarrhœa and dysentery, particularly in the latter. In dysentery, however, it is often at first given so as to produce full vomiting, and the smaller doses are designed to keep up nausea. The directions of sir John Pringle, Monro, Cleghorn, Baker, Brocklesby, &c. are in every one's hands.

Ipecacuanha is also employed in spasmodic asthma, particularly those varieties of the disease to which hypochondriacs and hysteric women are subject; but it must be administered in such a dose as to excite vomiting. In the more chronic form of the disease five grains are given every morning for six weeks; a dose that generally produces a slight nausea, and often some discharge. Baglivi also recommends it not only in dysenteric fluxes, but in all other hæmorrhages; and Barbeyrac adds, that it is not only peculiarly beneficial in hæmorrhages from the uterus, and hæmorrhoidal vessels, but even from the lungs. It has lately become a fashionable remedy in dyspepsia, since the publication of Daubenton's little tract in an English dress; but the dose is very small, and does not exceed a grain or a grain and a half. We can scarcely see in what respect so small a quantity can be beneficial; but while it continues fashionable, its commendations will be warm.

IRIS FLORENTINA.—Page 46, col. 2, line 32; "*its bitter remaining in the extract.*"—The watery extract is about three-eighths of the root, and the spirituous one-eighth; but the gum and the resin are so intimately united that the same menstruum takes up both. The spirituous extract is very highly acrid. Neumann could collect no essential oil from it, and others, who succeeded better, have obtained very little. It acts in the mouth as a sialogogue, and, reduced to powder, as an errhine.

ISCHIADICUS MORBUS.—Page 49, col. 1, line 32; "*when speaking of rheumatism.*"—Perhaps blisters may be considered as remedies more appropriate to sciatica than to other kinds of rheumatism; and Plenciz has remarked that they should be long continued, as they produce little benefit till a viscid serum is discharged. Burning with the actual cautery, or with moxa, is a similar remedy, and from the depth of the sore produced, perhaps more effectual. Hemlock, aconite, and the whole tribe of narcotics, have been given, *it is said*, with success, and we have lately received some observations from Dr Bardsley, which lead us to suspect that the arsenic would be an useful remedy. We have followed this hint; but cannot boast of our success.

ISCHURIA URETHRALIS.—Page 51, col. 1, line 36; "*press on the aperture.*"—To this head must be referred ischuria from an enlargement of the prostate. This

gland is frequently swollen, and often of a schirrous hardness, sometimes containing calculi, and occasionally enlarged by excrescences (Morgagni de Sedibus, xli. 6, 13, 17; lxvi. 5; Ware Memoirs of the Medical Society of London, ii. 30; Petit Oeuvres Post Humes, iii. 20, &c.). Ischuria is sometimes the consequence of misplaced gout, when it is referable to inflammation.

The bladder is not only punctured through the perinæum, as recommended by Mr. Pott, but often through the rectum; and this is the method preferred by many practitioners of credit. Others have recommended the puncture above the pubes: an operation whose advantages and inconveniencies are explained in the article LITHOTOMY. Mr. Cheston, with great propriety, confines this operation to the ischuria, produced by the reverted uterus. In females it is sometimes punctured through the vagina. Each is a difficult and a dangerous operation; in the greater number of cases merely palliative; and the variety of opinions seems to show that no very decided advantages attend either. To compare them with the inconveniencies would be a difficult task, within a moderate compass; and the practitioner must, at last, be decided by circumstances which can make no part of our consideration. In males we have preferred the rectum: in females it is rare, but the most ready access to the bladder is through the vagina.

JACOBÆA VULGARIS; *senecio jacobæa* Lin. Sp. Pl. 1219. The leaves are extremely nauseous, bitter, rough, and subacrid. The decoction has been used in camp dysenteries.

J.

JALAPA.—Page 53, col. 2, line 26; "*genus ipomœa.*"—The root in its natural state is of a roundish form, or rather a long oval, fleshy, white and milky, particularly when fresh. From its inferior part many radicles arise of unequal thickness, which plunge perpendicularly, or obliquely, into the earth; and on its surface are some depressions, apparently the situation of buds or radicles. Thierry tells us that he has seen roots of jalap which weighed from twelve to twenty-five pounds. By cutting transversely they assume the appearance described in the article. Raynal declares that Europe consumes annually 7500 quintals, for which she pays 972000 francs. When burnt it gives out a strong and not a disagreeable smell.

When Mexico was discovered, the Spaniards found the jalap freely employed by the inhabitants; and towards the end of the seventeenth century, C. Bauhine informs us that the trade in this article was extensive in Europe. It was imported into Marseilles. He adds, that it is preferable to the white mechoacanna, because it more effectually discharges the watery fluids and strengthens the stomach: the dose, which he recommends, is a dram; but it was afterwards reduced to twelve grains and a scruple. C. Bauhine thinks that it is not adapted for acute fevers, nor for warm, dry temperaments; but is chiefly useful in dropsies, and in phlegmatic habits. In tænia Wepfer informs us that it has been effectual. The resin, triturated with sugar, is a convenient medicine for children, as it is tasteless, and by no means violent in its operation: with an equal quantity of cream of tartar it is a safe purgative in almost every complaint; and, notwithstanding the apprehensions of Bauhine, may be safely given in acute fevers. Memoires de l'Institut. tom. vi. 386.

JECUR.—Page 57, col. 1, line 14; "*become more fashionable.*"—The liver is subject to chronic inflammation, which often terminates quickly in abscess, without any symptoms, which give the alarm. This complaint arises from shocks, either general or on the brain; drinking cold liquors while warm, frequent attacks of intermittents or bilious remittents; and, indeed, every cause which alters the determination of the blood, and throws it back from the surface, in constitutions where there is not sufficient inflammatory tendency to produce fever. These abscesses, from their vicinity, irritate the lungs, inducing cough and other symptoms of phthisis; often phthisis itself. The purulent matter is sometimes discharged by the intestines, finding a passage through the ducts, sometimes into the cavity of the peritonæum. In general, however, the patient sinks from atrophy or hectic. The liver is said to have been absent, sometimes double, occasionally to have been forced on the left side, and the round ligament of the liver to have been found in a herniary sac.

The enlargement of the liver has been occasioned by cold drinks when warm, repelled eruptions, and the abuse of spirituous liquors. Besides mercury and laxatives, the Bath waters are often of service. Hemlock has been given, joined with rhubarb and neutral salts; sometimes the laurocerasus, arnica, and even chalybeate preparations. A constant drain, by a perpetual blister, is often of service. Wounds of the liver frequently heal without inconvenience, if the gall bladder or ducts are untouched.

JUBABÆ CORTEX. The plant is unknown; but the bark is brought to us in pieces some inches long, convoluted, brittle, of a pale brown, sometimes branched, as if taken from a larger branch, and followed into a smaller. The epidermis is grey, has longitudinal striæ. The bark below is of a deeper brown than the parenchyma, which is nearly white. It is brought from India. Spielman compares its taste and smell with those of the vanilloe; but some specimens are bitter. It is celebrated as a nervous medicine.

JUNIPERUS.—Page 58, col. 2, line 34; "*considerable bitterness.*"—The pulp of the berry is red, and somewhat viscid; the seeds three; about $\frac{1}{77}$ of essential oil may be obtained from them, and about half the quantity of extract, either aqueous or spirituous. They impart a violet smell to the urine, and are generally employed in dropsies, in the form of a conserve, but in this country the oil is preferred. In calculous diathesis they are used as preservatives, and as solvents of calculi, when these are supposed to be formed.

A decoction of the wood has been commended in catarrhus senilis, in itch, ozœna, sciatica, obstruction of the liver, gout, gonorrhœa, incipient cataract, &c. The fumes of the wood have been considered as preservatives from small pox, malignant fevers, and plague; the ashes celebrated in dropsy. The sandarach burnt, and its smoke received in clothes, has been

supposed useful in rickets, if the whole body be rubbed with them.

K.

KIKEKUNEMALO.—Page 60, col. 2, line 61; "*nervous diseases*."—The descriptions of different authors vary greatly. Buchner, the most intelligent of these, in his dissertation on this substance, which is an almost pure resin, describes it as of a greenish colour, rather opaque than transparent, very brittle, and not unlike the gum guaiacum. The smell is slightly balsamic; but, when thrown on burning coals, powerful, and not disagreeable. Between the teeth a sandy substance is felt, which indeed may be discovered by the eye on the surface. Distilled with water it imparts a strong balsamic and agreeable smell; and a balsamic, slightly acrid, ethereal oil swims on the surface, of which two drams may be obtained from a pound of the resin; for it affords but one-twenty-fourth of a gummy extract. The water, after boiling this resin, becomes brown, bitter, and of a taste somewhat acrid. Spirit also becomes brown, with a balsamic smell and taste, and slightly acrid. The inspissated resin is white, and of the same taste. It has been considered as discutient and antispasmodic; is given in powder, or in the essential oil. In one instance it relieved tetanus; but we suspect that the greatest utility of the kikekunemalo, which is brought from America, consists in its forming a beautiful crystaline varnish.

L.

LABIATUS.—Page 62, col. 2, line 23; "*See* FLOS LABIATUS."—Linnæus includes the labiated and personate flowers under the epithet *ringens*; but, by this means, some confusion is introduced. It would be better to style an irregular monopetalous flower with two lips, *labiated*; those gaping and open, *ringent*; those closed, *personate*. When the upper lip is wanting, and its place supplied by the antheræ and pistil, botanists have styled it an *unilabiate* flower. Sometimes the upper lip is turned upward, as in the ground ivy, though most commonly the upper lip is convex above, or turns the hollow part down to the under lip, representing a helmet. The flowers have been consequently called *galeated, cucullated*, and *galericated*.

LAC.—Page 67, col. 2, line 47; "*exhibited in milk*."—Since this article was printed we have received the sixth volume of the Memoirs of the Institute, which contains experiments on cows' milk by Fourcroy and Vauquelin (p. 332). Of this Memoir we shall add a short abstract, without attempting to connect it with the former facts.

The results are undoubtedly very different, as they observe, from former experiments. They found that cheese, produced by the spontaneous coagulation of milk, is formed by the caseous matter joined to the acetic acid; and that the precipitation of milk by acids is owing to the union of this matter with these acids, which, unless in excess, are entangled in the cheese, and are not found in the whey. The phosphat of lime is deposited with the cheese when there is not an excess of acid, which renders it soluble in the serum. This excess may be that of the milk when very sour, or the acid added. It dissolves also a little of the cheesy matter, which renders the whey turbid, or at least which may be precipitated by ammonia. The phosphat of lime is accompanied by the phosphats of magnesia and iron.

The lactic acid of Scheele is the acetic acid, holding in solution animal matter, some sulphats and muriats, with a little ammonia; but, in its freshest state, milk contains acetic acid, and, neither in this, nor any other experiments, does it offer the slightest trace of any foreign acid. The native acid of milk is found in the alcohol employed to coagulate it. This, as well as the lactic acid of Scheele, resembles very strongly the acetous products of fermentation, particularly those from the fermentation of the cerealia.

The animal matter contained in the acid of milk prepared by Scheele's process has a considerable analogy with fermented gluten: it is dissolved in the serum, not precipitated by acids. It is this portion which is converted into acetic acid, which precipitates by tanin, galls, the oxygenated muriatic acid, and metallic solutions, which is the source of the bituminous matter formed by iron, so conspicuous in the authors experiments. The caseous matter, separated from milk by alcohol, retains all the phosphats of the milk and the butter: this curd is consequently more opaque, and does not become semitransparent by drying. The phosphat of iron, which in the curd accompanies the phosphat of lime, gives it the property of becoming blue by calcination, like the bones of animals. There are no alkaline phosphats in milk, or they are in so small a quantity that they cannot be demonstrated.

The sugar of milk is neither the cause nor the subject of fermentation. It exists without a change after this has taken place, and is so little disposed to ferment, that leaven did not occasion the slightest intestine motion in it. In this respect it differs greatly from common sugar.

From these facts milk must be considered as a mixed fluid, formed of a large proportion of water, and two kinds of matter differing in their state; for some are truly dissolved, as the sugar of milk, which makes .02 of the whole; animal mucilage, muriat and sulphat of potash, and the acetic acid, of which the quantity cannot be easily ascertained. The cheesy matter, which forms about 0.[illegible] of the milk, is seemingly dissolved like the other matters. The ingredients simply suspended, and ready to separate on the least alteration of the equilibrium, are the butter, which forms about 0.08, and the phosphats of lime, magnesia, and iron, which are precipitated by the cheese, when there is not an excess of acid. Their quantity, which does not exceed 0.006 or 0.007, can scarcely be appreciated, except with respect to the phosphat of lime.

The applications of these results to animal chemistry and medicine we shall select in the authors own words, as we are not disposed to consent implicitly to every one of these positions.

1. "The presence of phosphats of lime and magnesia, in milk, explains the rapid increase of the bones of young animals during the time they live on this food.

Nature seems to have appropriated this nourishment to the most rapid acceleration of ossification. The caseous and the animal matter are so many ingredients of milk, appropriated to the formation of membranes, muscles &c.

2. "The existence of phosphat of iron in milk shows how this nutritious fluid is converted into red blood, which owes, as we have proved elsewhere, its colour to superoxygenated phosphat of iron, and to an excess of oxide. So that the milky fluid is constituted by nature to fulfil all the functions which the rapid nutrition of young animals requires.

3. "The acid serum of milk, holding the phosphats of lime, magnesia, and iron, in solution, offers a convenient vehicle for these salts in such cases as physicians will think it necessary to employ them, and to convey them in a divided state, united also with animal matter, into the blood.

4. "On the contrary, when they wish to employ whey as nourishment, as demulcent, and relaxant, they will order it in its sweet state.

5. "Cheese made with sweet milk contains the phosphats of milk; and those prepared with sour milk do not contain them. This fact may explain the difference between cheeses of different countries."

LACTATIO.—Page 69, col. 1, line 65; "*should be avoided.*"—In general, the diet of the nurse should not be greatly altered from that to which she has been accustomed. Vegetables in excess will produce flatulence, and a diet more nutritious than usual; an error often committed, as it is a vulgar prejudice that a nurse should live well, renders the milk viscid and indigestible. The usual exercise, as well as the usual diet, should be also employed.

When the milk is in excess it is often thin and watery. The parents are surprised that the child does not thrive when the nurse has such a flow of milk. In these cases we can give little help by medicine; for a full diet will often increase the quantity, without improving the quality, and repellents are dangerous in one view, without being efficacious in the object desired. If the milk is young, time may improve it; but, if old, it must be changed. When the discharge of milk is inconsiderable, if no cold or irregularity has occasioned it, we are still unable to supply the defect. If from cold or fever, on the return of health the milk will return also, often in circumstances apparently unfavourable. When it disagrees with the child, occasioning uneasiness in the stomach, the warm carminatives, particularly the caruiseeds, the galbanum, &c., given to the nurse, will remove the inconvenience. The child often vomits the milk, and this is supposed to be in no degree injurious. Children indeed vomit freely and frequently; and, should the infant thrive, it may be neglected; but it sometimes happens that the child pines: still the vomiting is hailed as a healthy prognostic, till it sinks irrecoverably. It is necessary, therefore, to look to *its* health, and should that be good, lesser circumstances may be neglected; but should that fail, whatever be the other appearances, some active plan should be adopted to change the diet. An admixture of animal food will often be of service, and the pap may be made with the jelly of young animals, with the juices of beef or mutton, with a small proportion of the least unpleasing spice. Nutmeg or cinnamon is the most effectual. When a child vomits the milk without being coagulated, it is a symptom peculiarly unpleasant; for the stomach, or the milk, are essentially in fault. The latter should be immediately changed, and a mixture of animal diet in the forms just mentioned substituted.

When the milk is repelled, particularly in the earlier periods, it seems to be thrown out with every secreted fluid. It has been fashionable to deny that these are really milky depositions; but, as they so strongly resemble milk, and occur in no other circumstances, it is not easy to prove the negative. It has been said that they are really purulent, and in some cases they appear to resemble pus; but it is not impossible that suppuration may accompany them, nor indeed is it improbable, that a man, full of one opinion, may see only what supports it: numerous instances of this kind occur in medicine.

LACTIC ACID.—Page 71, col. 2, line 5; "*differs very little from the acetous.*"—The difference is explained in the preceding article of this Appendix.

LACTUCA VIROSA.—Page 72, col. 1, line 1; "*half an ounce a day.*"—This plant seems to be the θριδαξ αγρια of Dioscorides, and forms, with the sclarea, a striking exception to the general character of the semifloculosæ. In making the extract, the expressed juice must be carefully depurated, since the earthy and saline particles obtund its more efficacious principles. If rejected in dropsy it will probably form an useful anodyne; and it is said to have been beneficial in those intermittent fevers where there is much restlessness and agitation. Histoire de la Societe Royale de Medecine, ii. 297.

LAPATHUM ACUTUM.—Page 73, col. 1, line 28; "*with no remarkable smell.*"—The root is cylindrical, about an inch in thickness, externally brown, internally yellow. When chewed, it tinges the saliva of a yellow colour, like rhubarb. It has been long employed in chronic, cutaneous affections, and even in elephantiasis.

LAPATHUM AQUATICUM.—Page 73, col. 2, line 2; "*obstructed viscera.*"—It is said to be useful in rickets, and to be at least equal to the madder. If not superior, we may without regret resign it. The *rumex Britannica* of Linnæus, Sp. Pl. 476, excels the hydrolapathum in the cure of phagedenic ulcers. It is an American plant, and Colden was informed of its virtues by the natives.

LARYNX.—Page 74, col. 1, line 65; "ASPERA ARTERIA."—The cartilaginous cavity behind the tongue, in the anterior part of the fauces. It is composed of the CARTILAGO CRICOIDEA, THYROIDEA, and the CARTILAGINES ARETÆNOIDEÆ, q. v. The superior opening is styled the GLOTTIS, and it is covered with a kind of valve, styled EPIGLOTTIS, q. v. The sterno-thyroidæus arises from the upper part of the inside of the sternum, and ascending on the sides of the trachea is inserted at the lower part of the scutiform cartilage: the hyothyroidæus arises from the lower part of the os hyoides, and is inserted at the same

part of the scutiform cartilage. These are common muscles; but there are five pair of proper ones connecting the cartilages, and deriving their names from their origin and insertion. These have been already mentioned. The laryngeal arteries are branches of the external carotids. The laryngeal veins pour their blood into the external jugulars. The nerves are from the eighth pair.

LASERPITIUM VULGARE.—Page 74, col. 2, line 14; "*somewhat acrid.*"—The root is thick and round, aromatic, warm, acrid, and bitterish. It is said not only to be an uterine, but a warm tonic. Its sensible qualities are not inconsiderable.

LATERALIS SINUS. One of these is formed on each side by the division and continuation of the longitudinal sinus. They commence about the middle of the tentorium, one passing along each horizontal crucial spine, within the tentorium, and round to the foramen lacerum, in the basis of the skull, where the internal jugular begins.

LEDUM PADUSTRE.—Page 77, col. 2, line 3; "*bitter to the taste.*"—By distillation the water resembles in smell that of roses: the watery extract is at first bitter, and then styptic to the taste; and the essence, as well as the resinous extract, is very bitter and styptic. The empyreumatic oil is of a most nauseous smell, and of the consistence of pitch. It destroys bugs, but attracts bees into new hives; and was formerly used in Sweden instead of hops, till its inebriating quality was found to be injurious. In hooping-cough, in a variolous epidemic, combined with this cough, in a peculiar epidemic angina, resembling the mumps, and in tinea, it has been employed in success. Linnæus and Scopoli.

LEGUMEN.—Page 77, col. 2, line 11; "*usually gathered by the hand.*"—A species of seed-vessel which has two valves or openings, inclosing seeds fixed to one side only. In this it differs from a siliqua, where the seeds are fixed, alternately, to opposite sides.

LENTICULARIS FEBRIS, a fever distinguished by small spots, synonymous with PETECHIALIS FEBRIS.

LENTISCUS.—Page 78, col. 1, line 38; "*as a masticatory.*"—The resin (for it is scarcely a gum) consists of little masses of different sizes, semipellucid, yellow, of a light, not unpleasant, smell, and a taste almost imperceptible. It is chewed to sweeten the breath and strengthen the gums, and is the usual basis of the best tooth-powders; while, for similar reasons, the wood is preferred for toothpicks. As a masticatory, joined with ginger and more acrid substances, it has been recommended by Boerhaave in palsy, particularly where it affects the tongue; and internally, from its supposed tonic and astringent powers, in hæmoptysis, fluor albus, dyspepsia, diarrhœa, and ulcers of the intestines (Degner). Its fumes conveyed to the rectum are considered as useful in prolapsus; and, generally diffused, have been employed in rachitis.

LEPRA.—Page 78, col. 2, line 53; "*occur in this country.*"—It was formerly very general not only in England but on the continent, and seems to have arisen from the unalimentary food taken during the winter. We have still many institutions founded for lepers, since the disease was supposed to be contiguous. In Iceland (Koenig), on the banks of the Jack (Pallas), in Cayenne (Bajon), and in Guadaloupe (Peysonnel), it still seems to be frequent. In this country it is now rare.

The ledum palustre (Linnæus), the juice of the fumitory hemlock (Quarin), Kæmpf's visceral clysters, and preparations of tin have been recommended in this complaint.

LIBER. The inner bark of a tree or plant, continued, according to Linnæus, in the corolla.

LIGULATÆ; floscules, which have a strait end turned downward, with three indentures, but not separated into segments.

LILIACEÆ; a natural order of plants in Murray's system, from their flowers resembling the lily.

LILIUM ALBUM.—Page 85, col. 2, line 19; "*flowers in June.*"—The root is a bulb, large, oval, acuminated, scaly, with loose, fleshy, white squamæ. When dry they are reddish, somewhat diaphanous, and hard. On chewing they are bitterish and mucilaginous: the mucilage amounts to about the fourth part of the weight. While it putrifies in water the stench is intolerable. The recent root, roasted in the ashes, and mixed with the oil of nuts, is a remedy often applied to burns.

The smell of the flowers, though pleasing, is to many very deleterious. It is lost by drying, but is taken up by water, alcohol, and expressed oils. They have been considered as antiepileptic; but if they have any virtue it is in their freshest state.

LILIUM CONVALLIUM.—Page 85, col. 2, line 37; "*spasmodic asthmas, or catarrhs.*"—The *berries* are very rarely employed. The pulp is sweetish, and somewhat bitter; the seeds more so. From a scruple to a dram of the powder of the berries is *said* to be useful in such epilepsies as recur according to the changes of the moon. After due evacuations, half a dram of the same powder, repeated after due intervals, is said to be useful in intermittents.

LIMONUM.—Page 86, col. 1, line 29; "*by means of the vitriolic.*"—See CITRIC ACID.

LINGUA.—Page 86, col. 2, line 42; "*the tip, proglossis.*"—The tongue, like other organs, is subject to inflammation and suppuration; but, what does not often happen in muscular parts, sometimes to cancer. We now know that in every disease, notwithstanding its great apparent irritability, it may be treated like any other part similarly affected. A burning heat at the back part of the tongue is often a symptom of hypochondriasis, or, more generally, of acrid saburræ in the stomach. A burning heat at the extremity is often extremely troublesome, and with great difficulty relieved. Indeed it has seemed to disappear naturally, rather than from the effect of remedies. A calculus is often found

in it, or rather in the salivary ducts in the neighbourhood below. After a part of this organ has been taken off it is said to have been again restored; but this has not occurred in many operations of this kind under our own eyes; and the account of M. Louis (Memoires de Chirurgerie, v.) of the loss of the tongue not affecting the articulation, deglutition, or mastication, is scarcely credible. There are some instances of a double, or more properly a divided, tongue, and of a violent pain in it, called by Eyselius *glossagra*, perhaps a rheumatic affection.

A palsy of the tongue is an accompaniment of general palsy; but sometimes a single complaint. It is occasioned by the most common causes of paralysis, and cured by the same remedies. A swelling of the tongue is often a symptom of fever, and, even though threatening cancer, has been cured, it is said, by the bella donna: at other times, it has yielded to leeches, to scarifications, and to blisters on the back and neck. It attends salivation when in a great degree, and sometimes is a symptom in fevers.

LINUM.—Page 87, col. 2, line 5; "*on sulphureous bodies.*"—The seeds contain one-sixth of mucilage, and one-fifth of fat oil. Half an ounce of the seeds is sufficient for six ounces of water. As food they were observed, even in the time of Galen, to distend and weaken the stomach. This was confirmed at Middleburg, where the inhabitants, during a season of scarcity, employed them as food, and felt, in consequence, tumours of the hypochondria and other parts. Domestic fowls, if fed on them, are scarcely eatable, from the rancidity imparted to the flesh.

As an emollient gargle in sore throats, as a demulcent not only in coughs but in pleurisy and peripneumony, the infusion of lintseed is highly useful. In aphthæ internally, united with mel rosarum, it is often advantageous, and frequently used as an emollient clyster.

LINUM CATHARTICUM.—Page 87, col. 2, line 47; "*is sufficient.*"—Linnæus is the chief modern author who has recommended it; but this flax seems to have been, in the seventeenth century, a favourite laxative in this kingdom. It is sometimes joined with cream of tartar, sometimes with aniseseeds. Two drams are also infused in four ounces of water, and taken for a dose. In a larger proportion it vomits. The infusion is excessively bitter, and the tincture still more active. Linnæi Amœnitates Academicæ, vii. 300, &c.; Morison Historia Plantarum, ii. 575.

LIPOTHYMIA.—Page 89, col. 1, line 31; "*or effluvia.*"—It sometimes arises from diseases of the head (Morgagni de Sedibus, xxv. 2, 4, 6, 10, 14, 15, 17), sometimes from idiosyncracy or particular antipathies, from abscesses suddenly bursting in the abdomen, suppressed evacuations, or a habit exhausted by violent discharges, either of blood or excrementitious fluids. Bites of insects are said to have occasioned the disease.

The whole tribe of antispasmodics has been occasionally employed, and in the intervals myrrh, bark, and valerian, with little discrimination of circumstances. The oxygenous gas has its usual advocate, Fourcroy.

LIQUIDAMBAR.—Page 88, col. 2, line 40; "*chiefly used as a perfume.*"—It has a moderately warm, pungent, balsamic taste, with a smell resembling that of storax calamita, heightened by a small proportion of ambergris.

LIQUOR AMNII.—Page 88, col. 2, line 55; "*or the child is weak.*"—This fluid is generally transparent, often milky, sometimes of a yellow or light brown colour, not coagulating like serum with heat, and consisting of water, some mucus, a little earthy matter, and sea salt. The proportions vary greatly.

LITHOSPERMUM.—Page 90, col. 1, line 50; "*hard seeds.*"—These seeds consist of a greyish white, shining and insipid crust, and at their larger extremity have a brown umbilicus. The kernel, when fresh, is sweet and oily. Grew seems to have been deceived in his experiment, when he thought the shell was dissolved in acids; and their absorbent power is now no longer trusted. The lithontriptic power of the seeds is equally doubtful; but calculous patients may obtain relief from them; for the whole plant is narcotic, and the fresh seeds form a pleasant emulsion; but they soon become highly rancid on keeping.

LITMUS; the inspissated juice of the *croton tinctorium* Lin. Sp. Pl. 1425, chiefly useful as a chemical test of acids and alkalis. It is sometimes prepared from the archill.

LOMENTACEÆ, (from *lomentum, a colour* used by painters). An order in the fragments of Linnæus from their use, rather than their botanical relations.

LONGITUDINALIS SINUS. A large receptacle of blood in the brain, of a triangular shape, by one part being suspended from the cranium, while the basis is flattened by the lateral distension. It proceeds from the crista galli to the tentorium, where it divides into the lateral sinuses, and conducts the blood from the brain to the jugulars.

LOOK.—Page 95, col. 2, line 16; "*supposed to be a resolvent.*"—It resembles at first sight amber; for it is so hard as not to be scratched by the nail, pellucid, inclining to a yellow more or less deep, the fracture shining. It seems to have very little, if any, taste, and a slightly resinous smell, cracks between the teeth, and does not soften on chewing. In a candle it burns with a bright flame, froths, and melts, with no unpleasing odour, and without leaving any ashes. Half a pound of the gum scarcely yields twenty drops of oil. An ounce contains five drams of a resinous extract; but of gummy only fifteen grains. Each is said to have some acrimony. It is brought from Japan.

LUMBRICOIDES. A species of acaris described by Mr. Church and Dr. Hooper in the Memoirs of the Medical Society, vol. ii. and v. See VERMES.

LUPINI SEMEN. *Lupinus albus* Lin. Sp. Pl. 1015, a large orbicular compressed seed, with a white arillus and a yellow medulla. Its taste is bitter and disagree-

able, which is lost by boiling. It has been used as food by all the nations of antiquity; but, though not poisonous, for none of the papilionaceæ are so, it is a flatulent food, producing, if long continued, constipation. Externally, like all the farinacea, it is resolvent.

LUPULUS.—Page 103, col. 2, line 7; "*lues venerea.*" The cones are oblong strobuli composed of large imbricated bracteæ, each of which contain two roundish seeds at their base. The bracteæ and the seeds are covered with a yellow farina; their smell is strongly aromatic; their taste very bitter, not disagreeable, with a sense of warmth; and the seeds are said to be the strongest. They yield only a small portion of their virtues to cold water, a larger to hot; but proof or rectified spirit extracts them readily. The watery infusion is yellowish, and grows black with sulphurated iron. Lobb supposes that the decoction of hops is lithontriptic, as it softened the calculus in his experiments. A more saturated decoction is said to destroy worms; and the cones boiled are applied warm to the neck in cases of angina, and cold to luxated limbs. The young sprouts are bitterish, with a light aroma, and are supposed to sweeten the blood, to be mildly diuretic and laxative. They are eaten as pickles, or boiled as other vegetables.

LYCOPODIUM.—Page 109, col. 2, line 13; "*vegetable kingdom.*"—The analysis of Bergius is not very different, and each shows a strong analogy between this powder and bees-wax. Water extracts a very small portion of it; alcohol about one-eighth, which is either a resinous extract or an oil; but of a very nauseous taste. It has been given externally in the ischuriæ and chronic pains of children, and has been supposed useful in calculus. The moss itself is emetic, and very rarely used, except in plica.

LYSIMACHIA.—Page 113, col. 2, line 57; "*to be astringent.*"—De Haen revived the use of this remedy in 1776, and since that time it has been frequently used on the continent in diarrhœa and dysentery. From its sensible qualities, its astringency is slight; but it is very mucilaginous, and its watery extract is in a considerable proportion. The spirituous is austere and disagreeable (De Haen Ratio Medendi, iii. 196; iv. 250; Storck An. Medicus, i. 108). After the necessary evacuations, a dram or four scruples of the powder are given night and morning.

M.

MALIC ACID.—Page 118, col. 2, line 54; "*carbonic acid by distillation.*"—It is procured by combining the acid in the juice of apples with kali, and adding acetated lead. The malat of lead is thus precipitated, and by adding the sulphuric acid the malic swims on the top. It is not crystalisable, and is decomposed by evaporating it to dryness. This acid is contained in the juices of many other vegetables, generally united with lime, and the neutral is rendered soluble by the excess of the acid (Annales de Chimie, xxxiv. xxxv.). The juices which contain it are so sensibly acidulous as to redden litmus paper, yield a copious precipitate by pure alkalis, by oxalat of ammonia, sulphuric acid, and indeed lime-water, which acts by saturating the excess of acid. Acetated lead is, however, the best criterion, since its precipitate is freely dissolved by the acetous acid. The precipitate with the citric, tartareous, and oxalic acids, which are also redissolved by the acetous, are heavy and curdled in appearance, while that with the malic acid is light and flocculent. When each acid is pure, the malic is distinguished by its being uncrystalisable. This acid also, in vegetable juices, is known by its furnishing, on the addition of alcohol, a soft homogeneous magma, resembling thick soap; and these juices, when dry, leave a glossy matter, which yields mild calcareous earth by burning.

The malic is often found mixed with other acids, particularly the citric, in the native juices of vegetables. Scheele, to separate them, adds alcohol to precipitate the mucilage; the spirit is then carried off by distillation, and the remaining liquor nearly saturated with chalk, which dissolves in both acids; but the latter is deposited by gentle evaporation, while the former remains in a great degree in the fluid. By adding alcohol, which takes up the acid, the malat of lime which was left is separated in a flocculent mass, and is decomposed by acetated lead. Malic acid, as we have seen, is also produced by sugar in the process for obtaining oxalic acid, and it seems to be the first step in the change. It is said, however, by Aikin, to crystalise in an intense degree of cold, about 7°; but, on keeping, it soon ferments, and is changed into acetous and carbonic acids.

MALVA.—Page 119, col. 2, line 51; "*by those of the latter.*"—The herb of the malva contains a large proportion of mucilage, and the root a less. In the althæa the contrary takes place, and its root is more mucilaginous than that of the malva. The dark purple flowers of the malva arborea are said to be astringent.

MANDRAGORA.—Page 122, col. 1, line 32; "*kidney-shaped.*"—The root is spindle-shaped, thick, sinking sometimes to the depth of four feet, divided into two or three branches, externally brown, sometimes, a circumstance said to distinguish the female kind, blackish, internally white, of a subviscid taste, bitter, nauseous, and, as it has been sometimes said, fetid. This, from the effects, appears to be the *mandragora* of Dioscorides, which differs greatly from the plant under that name in Theophrastus. It was formerly given in pervigilium, in severe pains, and when a surgical operation was to be performed. Hippocrates mentions its use in melancholy, convulsions, and to relieve severe pains of the joints. Dioscorides speaks of its resolvent power in scrofulous and other tubercles, and for this purpose the inspissated juice of the plant was employed, or the root or bark steeped in wine. In Russia, Pallas informs us that it is given in various chronic complaints, and by the Swedish physicians in schirri of the parotid or maxillary glands, after fever; indeed, in glandular indurations of every kind, from whatever cause. Three grains of the powder or a few drops of the tincture have been said to relieve gouty pains. (Hoffberg in the Swedish Transactions.)

Line 34, in this article, for *internally* read *externally*.

MANIA.—Page 125, col. 2, line 13; "*muttering delirium.*"—As some authors have lately contended that there is, scarcely in any instance, an organic affection of the brain in mania, we have collected the observations of the best anatomists on the subject. Morgagni's dissections occur in the eighth and the sixty-first epistle. Almost all the articles in the former, from the second to the eighteenth, are on this subject. He frequently found the brain harder, though sometimes softer, than usual; the dura mater sometimes thicker; white, soft bodies at the sides of the longitudinal sinus in the dura mater, and polypous concretions in the sinus itself. There were diseases also in the pineal gland and some large glands in the plexus choroides. Fabricius, he remarks, found also the plexus choroides turgid and inflated.

Meckel found the brain denser and harder than usual, and Jones, in the Medical Commentaries, describes the membranes thickened, the dura mater adhering firmly to the skull, the brain softer than usual, the ventricles full, of a turbid fluid. In the Medical Observations and Inquiries, vi. Dr. Smith mentions a bony concretion in the brain in a case of mania, which arose from a blow on the head; Plenciz and many other authors describe the brain as peculiarly tenacious, and bony, or calculous concretions in different parts.

Among the causes, black bile is mentioned by the earliest authors, and we repeat it chiefly to add, that in the collection of the changes discovered by dissection we often find diseases of the liver. These, however, appear to be effects only; but the aneurisms and diseases of the heart, often occasionally discovered, are probably produced by the violence of the paroxysms, or are concomitant diseases.

It was scarcely necessary to enumerate among the causes, blows of the head, or previous phrenitis. We may add, however, that the deleterious narcotics have often occasioned mania; and though their effects are usually temporary, they are sometimes permanent.

MARANTA ARUNDINACEA, Lin. Sp. Pl. 2. The plant whose starch forms the arrow root. To procure this fecula, roots of a year old are well washed, then beat to a pulp: this is thrown into a pail of water, and the fibrous part carefully separated. The milky liquor, passed through a course cloth, is allowed to settle, and the starch which subsides is dried in the sun. It is reckoned a mild, nutritious aliment, and much used in fevers and hectics, indeed in every case of debility where the digestion is weak.

MARUM SYRIACUM.—Page 131, col. 2, line 24; "*powerful emmenagogue.*"—Linnæus considers it as a powerful analeptic, and not injurious, though fever be present, as it does not heat, and in this respect as superior to cinnamon. It is, however, to be lamented that the relief it affords is as transitory as it is rapid. In asthma, and in hectics, with colliquative sweats, it has been said to be useful. Rosenstein and Bergius seem to support, by their experience, the commendations of Linnæus.

MASSOY CORTEX. We were first informed of this bark from the letters of Rumphius from Amboyna (Miscellanea Naturæ Curiosorum, dec. ii. an. i. xxii. 55). It comes from New Guinea; is almost flat, of an obscure cinnamon colour, covered with a grey, striated bark, of a sweet smell and taste, mixed with the aroma of cinnamon. The Indians bruise, make it into a cataplasm, and anoint the body with it in cold, rainy weather, as it warms, relieves pains in the bowels, and is pleasingly odoriferous.

MATRICARIA.—Page 148, col. 2, line 53; "*and bitter.*"—Its chief virtues, as its generic and trivial names import, are supposed to be uterine, and, with little consistency, it has been employed both in obstructions and profluvia. It is said also to destroy worms, to be particularly beneficial in hysteria and intermittents; from the latter its English appellation is derived.

MATURATIO, the process of suppuration, or that change in the state of the vessels which admits of their secreting purulent matter.

MAXILLA INFERIOR.—Page 149, col. 1, line 33; "*os temporis.*"—The coronoid is the highest process, thin and pointed: the condyloid is narrower, thicker, and shorter, terminating in an oblong rounded head, formed for a moveable articulation in the cranium, and received into the fore part of a fossa in the temporal bone. In this joint is a moveable cartilage, more closely connected to the jaw than the cranium, but united to both by distinct ligaments rising from the edges around. These attachments are strengthened, and the whole secured by an external ligament common to both. On the inner surface of the ligament, which attaches the cartilage to the temporal bone, and backward in the cavity, is what is styled the gland of the joint, at least the ligament is peculiarly vascular in that part. At the bottom of the inner part of each coronoid process is a canal terminating at the outer surface of the bone near the chin, affording a passage to an artery, vein, and nerve, which send branches to the teeth.

The lower jaw is capable of performing many motions. The condyles, by sliding from the cavity towards the eminences on each side, bring the jaw horizontally forward; or the condyles only may be brought forward, while the rest of the jaw is thrown backward, as in opening the mouth. The condyles may also slide *alternately* backwards and forwards, moving the jaw laterally, as in eating. The cartilages secure the articulation, by adapting themselves to these several inequalities, and prevent injury by friction. Yet the lower jaw is sometimes luxated, chiefly in the convulsive action of gaping, and restored by the hand. It is more singular, that, by a caries, the lower jaw is said to have wholly separated from the cranium, and that the patient survived.

MAXILLA SUPERIOR.—Page 149, col. 1, line 43; "*the vomer.*"—The upper jaw is divided into two bones, which in adults is sometimes united, but often remain distinct during life. An eminence at the upper and fore part of the bone is called the *nasal process,*

and in the inferior portion of this process is a fossa, which, with the os unguis, forms a passage for the lacrymal duct. Into this process, too, is inserted the short round tendon of the orbicularis palpebrarum. Backwards and outwards from the root of this process the bone contributes to form the lower side of the orbit, and it is called the *orbitar process*. Behind this last there is a considerable tuberosity, on which is a channel, forming almost a complete foramen; in this a branch of the fifth pair of nerves and a small artery are transmitted through the external *orbitar foramen* to the face. At the junction of the upper jaw to the cheek-bone is the *malar process;* the lower and anterior parts forming a portion of a circle, give room for the insertion of the teeth: for this purpose it swells, particularly on the inside. Above it, and just behind the fore teeth, is an irregular hole, the *foramen incisivum*, which separates into two or more, giving a passage to small arteries, veins, and nerves. Behind the alveolar process are two horizontal lamellæ, which uniting contribute to form the roof of the mouth, and divide it from the nose; and, as it is seated higher than the edge of the alveolar process, the mouth is arched, and the voice consequently more sonorous. Where the maxillary bones are united they form a furrow from the projecting edges, which receives the inferior portion of the septum nasi. Under the orbitar part of each bone is a sinus, called *antrum Highmorianum*, which, like the other sinuses of the nose, communicate with that organ, by an opening small in the recent subject, though large in the skeleton. In the fœtus these sinuses do not exist, and there is an oblong depression only on each side of the nostrils; nor is the alveolar process then formed. On the side of the palate in young subjects a fissure seems to separate a portion of the bone which contains the incisores from that which contains the canini; but this is seldom seen after the sixth year.

MECHOACANA ALBA.—Page 150, col. 1, line 30; "*but with no peculiar precision.*"—Murray thinks it most resembles the *convolvulus sepium* Lin. Amœnitates Academicæ, vii. 302. The slices are somewhat more than an inch in diameter, white, or of a yellowish white, compact, and covered with a greyish bark. The first impression on the tongue is that of sweetness: it is afterwards subacrid, and a little nauseous: the roots of bryony sometimes mixed with it are distinguished by their bitterness. The dose is inconveniently large, at least two drams; but it was for a time retained, as, from its mildness, suitable to children, though they can often bear more acrid purgatives than adults. It was supposed to be peculiarly serviceable in evacuating arthritic and rheumatic matter.

MELICERIS.—Page 187, col. 1, line 2; "*exciting suppuration.*"—See TUMOR.

MENSURA. The Linnæan measures in botany are so often employed as to require a short notice. These are, 1. the hair's-breadth, the smallest perceptible portion; 2. *linea*, the line, one-twelfth of a Parisian inch; 3. a nail's breadth (*unguis*), equal to six lines, half an inch; 4. the length of the outermost joint of the thumb (*pollex*), equal to one inch; 5. the breadth of the palm exclusive of the thumb (*palmus*), equal to three inches; 6. the span (*spithama*), seven inches, equal to the distance between the top of the thumb and fore finger when extended; 7. *dodrans*, the great span extending from the thumb to the extremity of the little finger, equal to nine inches; 8. a *foot*, measuring from the elbow to the basis of the thumb, equal to twelve inches; 9. *cubitus*, from the elbow to the extremity of the middle finger, equal to seventeen inches; 10. *brachium*, from the armpit to the extremity of the middle finger, equal to two feet; 11. *orgya*, a fathom, the measure from the extremities of the two middle fingers when the arms are extended, equal to six feet.

MESENTERIUM.—Page 199, col. 1, line 10; "*as frequently as is suspected.*"—The dissection of morbid bodies, however, discovers such changes in this membrane and its glands as must produce the most fatal consequences. The glands have been found almost wholly obstructed, and atrophy has arisen from the deficiency of the supply. That it does not arise more frequently is owing to a lymphatic occasionally passing over a gland without pouring its fluid into it. We find the glands often suppurated, and hectic fever comes on from absorption, or death suddenly on the abscess breaking (Morgagni de Sedibus, xlvi. 20). In the purulent sac, and sometimes in glands not suppurated, calculi or ossifications are discovered, but never in such a degree or extent as to produce disease, and, were they known, are beyond the reach of medicine. Obstructed glands also are seldom relieved, though the most promising plan is the use of small doses of calomel at night, with neutral salts or sea water in the morning. See SCROFULA.

The other diseases of the mesentery are hydatids, steatoms, ulcerations, and wounds: these also are beyond our powers to cure. Wounds are usually fatal.

METALLA.—Page 200, col. 1, line 60; "*anatomical preparations.*"—Mr. Davy has lately disturbed the definition of metals, and the precision with which they were formerly limited, by his very singular and important discovery, that soda and potash are real oxides, and that, when deprived of oxygen, they assume the metallic appearance, though of very inconsiderable specific gravity. As, in the work itself (vide SAL), we have given the abstract of his discoveries before they were published in the Philosophical Transactions, we shall add, in the appendix to that article, a short account of what has been since discovered. See p. 150.

METAMORPHOSIA, (from *metamorphosis*). DISTORTED VISION. These distortions relate to the size of objects, their motion, their straight or bent position, or their inversion. In mania and delirium objects are supposed present that are not so, and after a strong impression the object still seems to continue, though the eyes are closed.

MEU.—Page 201, col. 1, line 1; "*Athamanta meum.*"—In the System of Nature this plant is referred to the genus *æthusa* with the same trivial name. It appears to be a plant of considerable powers from its sensible qualities, and has been celebrated as an

emmenagogue, a sudorific, and diuretic. It has been given in England in intermittents, in other countries in flatulent colic, in hysteria, and in humoral asthma. The seeds are similar in their virtues to the plant and root.

MILIARIA.—Page 202, col. 1, line 6; "*its appearance has been rare.*"—Since that time we have seen two cases which have appeared to us true idiopathic miliaria. The pustules were not purple, and the disease was mild. They have, however, led us to a more accurate examination of the subject in some of the original authors; and it cannot, we think, be denied that it is occasionally, though rarely, idiopathic. It is sometimes endemic, occasionally epidemic.

See Colin Epistola ad Baldingerum quâ Demonstratur Pustulas Miliares malefactitias et symptomaticas dici, Viennæ, 1765; Quarin Methodus Medendi Febrium, &c.; Memoires de l'Academie Royale de Medecine, 1779; Salzmann Historia Purpuræ Miliaris albæ Argentoratum et Viciniam infestantis; Baraldi Storia di una Constitutione Endemico-epidemica di Febri Migliari Modenæ, 1781.

MILLIUM, *grutum.* A very white, hard tumour under the skin, resembling a millet seed. It is immediately under the cuticle, and its contents, which resemble those of an atheroma, may be easily pressed out.

MOLA.—Page 206, col. 1, line 6; "*coagulum of blood.*"—The latter is frequently the case; and when the external part is apparently organised the internal is merely cruor. When it is really an organised production, traces of organisation are discoverable through the whole, and the part by which it is attached to the uterus appears to be vascular. This at once determines that it is not a polypus; and indeed, on the whole, it is probable that a mole is most commonly a monstrous production, whose structure admits not of regular and considerable evolution, and is, therefore, incompatible with an extended period of life. A mole is sometimes a collection of hydatids. Buchner Miscellanea, 316; Morgagni de Sedibus, &c. xlviii. 12—14.

MOLLITIES.—Page 206, col. 2, line 19; "*previously corrected.*"—This disease is nearly connected with rickets (see RACHITIS); but it sometimes occurs in more advanced life, when no other symptom of rachitis can be discovered. It consists not only in the deficiency or the defective application of the phosphat of lime, but in an increased absorption of the bony matter previously deposited, since a large quantity of this earthy salt is discharged with the urine. No cause is obvious but the general one of debility. Those who die of this disease are found to have the arteries of the bones greatly enlarged and diseased; for the blood is grumous and of a chocolate colour, injurious probably to the nervous power, and consequently destroying the life of the bone.

MOLYBDÆNA.—Page 207, col. 1, line 57; "*gravity exceeding 6.*"—This scarcely, however, forms a distinguishing mark, since molybdæna has sometimes a specific gravity of 7.5. Though infusible, it unites to many metals by fusion, to sulphur and phosphorus: it is acidifiable by the nitrous acid, and exists in four different degrees of oxygenation. Molybdæna is an acidifiable metal, and its acid styled the *molybdic.*

MUCILAGO.—Page 223, col. 1, line 24; "*in water.*"—Mucilage is insipid, very soluble in water, to which it imparts viscosity, and a clammy feel, insoluble in alcohol, not coagulated by a boiling heat, nor changed by drying. After some time it becomes mouldy, and slightly sour; but these changes are produced slowly. In the fire it swells, softens, becomes yellow, brown, and black, burns with much flame, exhaling a dense acid vapour, and leaving a spongy coal. Several of the lichens, the leaves of comfrey and mullein, the root of the harebell, and the whole of the plant marshmallow, yield it by decoction and inspissation.

When distilled in close vessels pure water first comes over, next a reddish brown acid liquor, with an empyreumatic smell, mixed with a little brownish oil, much carbonic acid gas, and carburetted hydrogen. The acid will not crystalise; but may be concentrated by freezing, and appears from its affinities to be acetous acid combined with an empyreumatic oil. On combining gum with nitric acid till the nitrous gas begins to be disengaged, an acid is deposited on cooling in the form of a white powder. This is styled the mucous acid, which in distillation yields a red, sharp-tasted oil, and much carbonic acid gas, while a portion sublimes in brown scales, with the smell of the benzoic acid. If the process be stopped when the mucous acid is deposited, the fluid above contains the malic acid, and continuing the process we obtain the oxalic. (See MALIC ACID.) The mucous acid is no longer to be changed. The sulphuric acid blackens gum, and produces the acetous acid, but more slowly. Mucilage alone is not susceptible of fermentation.

Animal mucilage very nearly resembles GELATINE, q. v.; but if to a solution of animal with vegetable mucilage the aqua lithargyri acetati be added, the former is separated in a copious, white precipitate (Bostock in the Edinburgh Medical and Surgical Journal). The infusion of galls, on the contrary, which precipitates gelatine has no effect on mucilage, while a solution of corrosive sublimate will only separate albumen without affecting either gelatine or mucus. The solution of litharge will, however, also precipitate different neutrals, so that the exact quantity of mucus cannot be ascertained by this experiment.

MUNGOS RADIX.—Page 224, col. 2, line 10; "*serpent naya.*"—The full-grown roots are about a span (*spithama*) in length, of the thickness of the finger, curved, knotty, bent, white, covered with a wrinkled bark, and a red fungus. The younger roots, of inferior powers, are long and straight. They have no smell, but are intensely bitter; so that the Malay appellation implies the gall of the earth. By analogy its utility has been transferred to poisons of all kinds, hydrophobia, putrid fevers, intermittents, and worms of the intestines.

MUS MARINUS, *pulvinar marinum,* a name applied to the eggs of rays, supposing them an animal. These were supected to possess medicinal virtues, and, among

the absurdities, some of which we must record, we have mentioned this remedy. According to Forskål, the modern Greeks and Turks still employ them in the cure of intermittents, by breathing the fumes when these eggs are thrown on hot coals. Though we speak of eggs, the ray is a viviparous animal, and, in reality, the sea mouse is only the oviform matrix, which contains the egg. It is in the form of a cushion, with four appendices, by which it is apparently attached to the fish till the young one is strong enough to "burst its cearment." On the southern coast it is called a fairy's purse.

MUSCULUS.—Page 230, col. 2, line 20; "*fulness, shape, and beauty.*"—Since this article was printed Mr. Barclay has published a very elaborate work on the muscular motions. It is divided into three parts. In the first is the arrangement of muscles into regions, with the synonyms of Innes and Dumas, following the appellation of Albinus, with references to each author. From this arrangement the student will at once perceive what muscles are likely to be supplied by the same branches of arteries and nerves, and, of course, be able to appreciate the effects of any wound or other injury.

The second part contains "the muscles belonging to the osseous structure, arranged according to the several bones to which they are attached, with general observations on the different parts constituting a muscle, and general observations on muscular action."

The third part contains "different arrangements of the muscles, according to the motions in which they co-operate, and occasional explanations also of the manner in which they co-operate." The author's object is to explain the nature and causes of a number of sympathies which arise from attachment, situation, and functions; many singular symptoms which occur in diseases; and to enable the practitioner to provide a safe and expeditious remedy where others, unacquainted with myology, might "torture their patient with all the contrivances of ignorant empiricism."

We cannot help, however, suspecting that Mr. Barclay has greatly over-rated the importance of myology, and it is singular, that the tedious case which he has transcribed at length in support of his opinion did not require a knowledge of the origin and insertion of any muscle. In cases, however, of luxation and fracture, not only the action of each muscle, but the conspiring actions of all are necessary to be known, that the most perfect relaxation may be obtained in order to reduce the joint or the broken limb. In this point of view our author's labours are of great importance, and we would highly recommend them to the attention of surgeons. They will not admit of an abstract; and indeed the attempt would be unfair: we shall, however, select a few observations to point the importance of our author's considerations.

"In those cases where the humerus is luxated, a steady attention to the situation in which it is placed, and deliberate reflection on what muscles are relaxed and stretched, what muscles are ready to assist or oppose, and likewise what muscles, as, for instance, the biceps, may be affected by the flexion or extension of some other joints, must always be objects of importance with the surgeon; and if he should wonder, in attempting the reduction, at the varied, sudden, and vigorous exertions which are made by these muscles, and at the great unavailing force that is not unfrequently made to overpower them, he surely cannot help being equally surprised at the slight causes which in some instances produce the luxation, and the small force which in other instances is required in the reduction. To explan the phenomena, we have only to reflect that the bone is preserved in its situation chiefly by the muscles; and that when any of the powerful muscles are taken by surprise, and without the others being prepared to moderate and direct it, the joint must always be in danger of luxation, however trifling be the force or the stimulus that introduced the derangement of action. The same is the case after luxation: the surgeon, taking the patient by surprise, may often with a slight and a sudden jerk throw those particular muscles into action which favour the reduction, before the muscles calculated to oppose them are prepared to make any forcible resistance. Thus may a slight force, properly contrived and accurately timed, do more at one period than a great force directed by skill can do at another. As a proof of this assertion, it is not the joints that have the most vigorous actions to perform, nor is it the joints that are least secured by the strength of their ligaments or by articulation, that are most liable to accidents of luxation: it is those joints which, like the joints at the hip and the shoulder, admit of the greatest variety of motion, which require the greatest variety of action in their muscular forces, and where harmony, amidst this variety of action, is most difficultly preserved, from the number of rotators, motors, moderators, and directors that must necessarily act at the same time with a precise and definite force, and yet may have other functions to execute on different bones and articulations. Let it not be said, that in these cases the capsular ligaments perform not their office; for what, in general, is the strength of these capsules where the muscles adhere to them? they are little more than cellular membrane; and if the bone usually burst through them where they are strongest, and where they are least supported by muscles, it will only prove that muscles are the principal security of the joint, as we may see in that connection formed between the trunk and scapulæ of quadrupeds, without the intervention of clavicles."

MUSCUS ARBOREUS.—Page 230, col. 2, line 45; "*usnæa officinarum.*"—This is not the usnæa of the shops, which is the lichen saxatillis. See USNÆA, Appendix.

MUSCUS PYXIDATUS.—Page 230, col. 2, line 57; "*lichen cocciferus.*"—Though Linnæus has fixed on this species, yet a variety of the *l. pyxidatus, l. coralloides, caule simplici, pyxidato, nudo, marginibus integerrimis* of Scopoli, and the *l. pyxidatus* of Linnæus, Sp. Pl. 1619, var. *b.* of Weiss, have been employed. We mention this particularly to observe, that the lichen islandicus, and probably a large number of this family, are equally efficacious. The taste at first is merely herbacious, but soon bitterish, and the smell somewhat disagreeable. The decoction has the unpleasant smell of the moss, as well as the bitter taste, and it throws down a bitter mucilage. From four ounces, three drams of watery and one of spirituous extract

were procured: each was bitter. From the same quantity six drams of ashes were obtained. The decoction became brown with sulphat of iron. It was first recommended in hooping-cough by Willis, and others have freely copied from him. More lately, however, Van Woensel used it with success at Petersburgh, not only in pertussis but phthisis (Histoire de la Societé Royale de Medecine, ii. 295). Strack has also found it very advantageous in hectics. As these mosses are common, it will be unnecessary to send to the arctic circle for a similar remedy.

MUTILLA.—Page 231, col. 1, line 18; "*troublesome from its sting.*"—It is the *mutilla* of the System of Nature, a very numerous genus, which contains more than thirty species, and in the works of modern naturalists forms a family *mutillareæ*. The sting is confined to the female; the abdomen is connected to the thorax by a small portion of its thickness: the lower lip is very small, membranous, and of the shape of a spoon at its extremity; the antennæ filiform inserted near the mouth, admitting of vibrations, with strait joints; the first long and cylindrical, the third elongated. The maxillary palpæ are long; the mandibles arched and pointed. The males only have wings. There is a very superb species in South America, called the *scarlet mutilla*.

MYODESOPSIA, (from *μυια, a fly, ωψις, vision*). The appearance of flies and cobwebs before the eyes, the precursor often of amaurosis, sometimes of apoplexy or palsy.

MYRMECISMUS, (from *μυρμηξ, a pismire*). *Formicatio*; a sense of creeping over the whole body. It sometimes occurs in that kind of paralysis which affects the nerves chiefly destined for sensation. But it is more commonly the earliest symptom of the RAPHANIA, q. v.

MYRRHA.—Page 232, col. 2, line 32; "*it should be rejected.*"—The myrrh is obtained by wounding the tree above the first ramifications at the end of the rainy season, and the gum exudes about three months afterwards. It continues to flow from the first wound; but, after the next rainy season, is of a darker colour, and inferior value. Fresh myrrh exhales a strong, somewhat mouldy, smell, and thrown into water emits an oil, collected from the goat skins, in which it is conveyed. The inferior gum with which it is adulterated is undoubtedly from a species of mimosa; but the myrrh itself is certainly the production of a different plant.

Genuine myrrh consists of masses of different bulks, of the size sometimes of a walnut, though usually less, and the larger masses seem to be made up of less agglutinated tears, which are of a reddish brown, somewhat pellucid, solid, brittle, of an unequal surface, and a shining fracture. Its smell is grateful and fragrant; its taste intensely bitter, pungent, with some traces of aroma. When masticated, it sticks to the teeth, and then in a great measure dissolves in the saliva, which, in consequence, grows milky. It burns slowly, with a sooty flame, and a crackling noise, leaving a grey coal.

In moderate doses it increases the appetite and digestion; so that Cartheuser thinks we have no better remedy in diseases of the primæ viæ. This opinion he confirms by its good effects in a case of hypochondriasis. In inveterate coughs and asthmas it has been celebrated from the earliest periods; and in later times it has been given, as we have said, with success in hectics. In such cases the gummy extract is supposed to be less heating than the myrrh itself.

MYRTILLORUM BACCÆ. *Vaccinium myrtillus* Lin. Sp. Pl. 498. These berries are of a deep purple, round, of the size of a large pea. The juice is sweet, joined with acidity, and considerable austerity. When eaten raw in any quantity they produce flatulence and violent colics; but when dressed are often taken with impunity. They are supposed to be antiscorbutic, and are used to give inferior mixtures the resemblance of port wine. When dried they are astringent, and employed to check diarrhœas, or are added, like other astringents, to gargles.

N.

NAPELLUS.—Page 236, col. 1, line 3; "*the turnip napus.*"—The WOLF'S-BANE. See ACONITUM.

NAPHÆ FLORES, the flowers of the orange-tree. See AURANTIUM.

NAPHTHA.—Page 236, col. 1, line 27; "*paralytic affections.*"—It is either colourless, or of a very dilute yellow, with an oily lustre, and an unctuous feel. The smell is penetrating and not disagreeable; specific gravity 0.845, not congealing at 0 of Fahrenheit. By the slightest contact of a burning body it takes fire, and burns with a copious, bluish-yellow flame, a penetrating odour, and much smoke. On distillation the colourless kind passes over unchanged; the coloured leaves behind a small residuum. By exposure to the air it is in part volatilised, and the remainder is scarcely distinguishable from petroleum.

True naphtha communicates part of its aroma to water and alcohol; but appears insoluble in either, corrodes the corks of bottles in which it is kept, combines with ether, essential oils, and resins: pure alkalis form with it a soap resembling Starkey's. (See SAPO.) It is the only fluid which will preserve, without any change, the new metals discovered by Mr. Davy in his decomposition of the alkalis, which shows that it either contains no water, or that the union between the hydrogen and the water is stronger than the affinity of these metals to water, or rather to the oxygen which it contains.

NARES.—Page 237, col. 1, line 2; "*too viscid mucus.*"—The nostrils are subject to a variety of diseases and accidents. Many of these, however, would be of little importance but to swell the volume. The chief are, OZŒNA, or ABSCESSUS, NARIUM, and POLYPUS, q. v. Besides these, worms are sometimes discharged from the nostrils, which have been bred in some of the sinuses, chiefly the frontal, and received in the state of ova from the air, possibly with snuff. These produce great pain, and their existence cannot

be ascertained till they are discharged. If suspected, the most acrid errhines should be administered. The worms supposed to be pressed out from the nose externally are only the sebaceous matter formed into small cylinders by stagnating in the ducts.

NASTURTIUM AQUATICUM.—Page 237, col. 1, line 48; "*though weaker.*"—The earliest chemists attributed the volatile acrimony to ammonia existing formally in the plant, and the siliquosæ, or tetradynamiæ, are still styled alkalescent, and certainly possess qualities different from the generality of vegetable substances. The minute researches of Wiegleb have indeed discovered in these plants some traces of the volatile alkali; but too inconsiderable to explain their effects, and their pungency is undoubtedly owing to an aroma, most probably of an oily nature.

In the caries of phlegmatic habits, or, in the language of Forestus, from cold pituita, it has been of service, and in a tertian attended with coma, connected with scurvy, it is praised by Eugelenus, and admitted by Werlhoff to have been of some advantage. In coughs, and even in phthisis, it is said to relieve; but not on authority we have been accustomed to trust.

NERVOUS FEVER.—Page 251, col. 1, line 35; "*ill-directed.*"—Since this article was printed Dr. Beddoes has published remarks on Dr. Clutterbuck's system, in which he seems to insinuate some suspicions of its originality, and endeavours to show that, in reality, the stomach is more generally diseased than the brain. In the view we have given, we might shelter ourselves under his auspices; but we have rather rested on the infarction of the liver than any affection of the stomach; and, though it is certainly true that the stomach is greatly disordered, and that, in dissection, it is most frequently found diseased, yet this is rather the effect than among the first consequences of febrile impression. The disorder of the stomach originally arises apparently from the debility of the sensorial power communicated to this organ; nor is it surprising that, when digestion is impaired, and the contents of the stomach become in consequence acrid or putrid, considerable changes should be found in it. The fulness in the early stages of fever is, however, almost exclusively in the brain and liver.

NICOTIANA AMERICANA.—Page 255, col. 2, line 4; "*to have discussed tumours.*"—Even externally applied, tobacco sometimes exerts its deleterious power, and produces all its debilitating effects. The bad consequences of smoking are said by Tissot to be apoplexy, epilepsy, gout, jaundice, tabes, and different diseases of the breast. It sometimes relieves toothach, and smoking is said to ward off the infection of putrid fevers and the plague: in the damp climate of Holland it is certainly salutary.

NIGELLA.—Page 255, col. 2, line 23; "*and a carminative.*"—The seeds were chiefly used, and are slightly aromatic and very pungent, employed by the Hanoverians as a condiment, and called *allspice*. They contain about one-twelfth of essential oil, and are not injurious, unless taken in a very large quantity.

NINZIN.—Page 255, col. 2, line 54; "*similar to the* GENSING."—The plant resembles the sisarum, and its root is less sweet, somewhat bitter, and more agreeable than the parsnip. It is spindle-shaped, throwing out lateral fibres, and, about the middle, divided into two, from whence its name *nin-d-sin, like a man*, is derived. The roots are collected at the beginning of winter, are partly boiled in rice-water, and dried. They have the art of rendering the lower part transparent, and the price is very high. The root is considered as highly cordial and corroborant.

NORLANDICÆ BACCÆ.—Page 260, col. 1, line 2; Lin. Sp. Pl. 395.

NUX AQUATICA. See CALTROPS.

NUX MOSCHATA.—Page 284, col. 2, line 65; "*and unctuous.*"—The smell of a nutmeg, newly grated, is highly grateful. The matter which swims on the distilled water is not camphor, as has been supposed from its appearance; but merely a congealed oil. When separated it resembles butter, and has been called so. From its warm nature, it is only used in chronic cases. Various accounts of the inconveniencies of nutmegs in large quantities may be found in Rumphius and Lobelius, as well as in Cullen. Even the vapour of the trees affects those who sleep under them.

NUX VOMICA.—Page 285, col. 2, line, 40; "*success in dysentery.*"—We perceive that it has been chiefly used in dysentery by the Swedish physicians, and authors of considerable credit speak highly of it. The best accounts are in the Swedish Transactions for 1773: they add either rhubarb or cream of tartar to it. In intermittents, especially if joined with gentian, it is said to be very successful, and to act in these, as well as in pestilential fevers, by exciting sweat (Gesner and Buchner). With white vitriol it has been given in herpes and other cutaneous eruptions, sometimes in gout and rheumatism; but its utility in these diseases is not supported by good authority. It is certainly one of the most useful and effectual narcotic bitters.

O.

ŒSOPHAGUS.—Page 299, col. 1, line 56; "*nourishing clysters.*"—Under the article DEGLUTITIO we have spoken of the causes of difficult deglutition from foreign bodies, impacted in the œsophagus, and it is scarcely necessary to observe, in this place, that the œsophagus is subject to various organic diseases. Tophaceous concretions have been found in it, sometimes ossifications, abscesses, fungi, and polypi. Inflammation and sphacelus are rare occurrences. These, if curable, are to be treated by the appropriate remedies, and it is only necessary to mention their occasional occurrence, to guard the practitioner against disappointment from common plans. We observe in a German collection a curious mode of relief for the removal of any foreign body sticking in the œsophagus, viz. a solution of emetic tartar injected into the veins, which the author, Koeler, thinks will excite vomiting, as indeed it has been known to do.

OLAMPI.—Page 299, col. 2, line 20; *"not used in this country."*—It is sold, says Spielman (Pharmacopeia Generalis, 156), in small pieces, externally grey, within shining, somewhat transparent, and brown. It is inodorous, insipid, friable, does not soften by chewing, does not dissolve in water, or melt by heat, burns in flame, exhaling a pleasant, resinous odour.

OLEA.—Page 299, col. 2, line 30; *"drypa."*—The olives, used as condiments, and preserved for exportation are the largest and most fleshy fruit, which contain a less quantity of oil than the smaller ones, and are less sapid. They are unpleasantly bitter, and, to lessen this taste, as well as to give them a saline aromatic flavour, they are repeatedly washed and macerated both in hot and cold water, with different aromatics, particularly fennel, dill, and coriander seeds, sometimes steeped in a lie of pure alkali. When properly prepared they are to many persons highly palatable, and are supposed to assist digestion.

OLIBANUM.—Page 303, col. 2, line 9; *"juniperus lycia."*—Linnæus seems to have established this plant, as the source of olibanum, on insufficient evidence, and Murray appears anxious to evade the dispute. The juniperus lycia grows in the south of France, and certainly does not produce this gum. Niebuhr and Bruce were unable to discover the tree from which the olibanum was produced, and Forskål was probably equally unsuccessful, since he does not mention it. In the time of Pliny the plant was as little known, and he tells us that the embassadors from Arabia had rendered it, from their accounts, still more uncertain.

Mr. Colebrook, in the volume of the Asiatic Researches lately imported, has elucidated the question, and it seems very certain that the olibanum is produced from a tree, named by Roxburgh *boswellia serrata.* This tree is large, and produces a fragrant resin, which has been for many years imported, at first without a name, and was very early recognised by the dealers as the olibanum. The *generic character* of the plant is "calyx beneath, five toothed, corol five petaled, nectary, a crenulated, fleshy cup surrounding the lower part of the germ, with stamens inserted on its outside; capsule three sided, three celled, three valved; seeds solitary, membrane winged.

"*Specific character,* leaves pinnate; leaflets serrate, downy; racemes simple, axillary. Petals ovate; filaments inserted on the exterior margin of the nectary." Asiatic Researches, ix. 377.

ONONIS.—Page 305, col. 1, line 8; *"See* ANONIS."—It was used, even in the time of Galen, as an aperient and diuretic; in later periods in ischury. Bergius observes (Materia Medica, 000), that, in his hands, it has often afforded relief in ischury and the paroxysms of calculus; in sarcocele, probably hydrocele. It is given in powder, in doses of a dram. The bark is preferred when used in decoction, and a handful is boiled, for a short time, with a moderate heat, in half a pint of water. De Haen Ratio Medendi, vi. 289.

OPHTHALMIA.—Page 309, col. 1, line 3; *"and scrofula."*—Add *lues,* a disease accidentally omitted.

ORCHIS.—Page 316, col. 2, line 12; *"orchis morio."*—Many authors prefer the *orchis mascula* Lin. Sp. Pl. 1333 for the preparation of salep; but all the orchises, with round roots, as the *o. militaris* and *coriophora* (Gmelin), and even those with palmated roots, as the *o. latifolia* (Percival), afford excellent salep. Pallas informs us, that the roots of the orchis bifolia (the satyrion of the shops) may be substituted for the preparation of salep. Geoffroy, indeed, for the accommodation of the druggists of Paris, directs every species of orchis to be taken indiscriminately.

OREOSELINUM.—Page 317, col. 1, line 28; *"pungent and diuretic."*—It was formerly so much esteemed as to be styled *polychrestos,* and was long used with the most vague views as an aperient and attenuant in jaundice and obstructions of the spleen. The vinous extract is, at first, acidulous, afterwards bitter and astringent. The watery extract is less bitter; but considered as useful in weakness of the stomach. The tincture is said to restrain the vomiting in intermittents, and that which occurs after excesses. The seeds are pungent to the smell, and resemble in taste the peel of an orange. Their empyreumatic oil is said to relieve the pain of a carious tooth.

The herb itself is warm; but the distilled water is without smell. The infusion has the agreeable smell and taste of lemon peel. It is said to be diuretic and sudorific, as well as a corroborant.

OVARIA.—Page 321, col. 1, line 23; *"is to be supplied."*—The diseases of the ovary are singular. We mean not to allude to dropsy, to hydatids, the most common causes of its dropsies, to its cartilaginous or schirrous state, its suppuration, or ossification, but to the marks of organisation which are sometimes found in these parts wholly independent of impregnation (Baillie Phil. Transactions, vol. lxxix; London Medical Journal, x. iii.; Haller de Uteri raris Morbis; Ruysch Thesaurus, i.; Adversaria Medico-chirurgica, dec. iii). Various instances of teeth and hair have been described in young women, whose characters have been unimpeached; and these strongly support the idea of a germ pre-existing in the female, though they equally militate against another part of the same theory, the animation of the germ by the semen of the male. Whether in a salacious habit a venereal orgasm may be sufficient to produce imperfect animation and an irregular form, without any connection with the male, may be doubted; but the affirmative can scarcely be admitted, consistently with the rules of strict induction; and we should rather be inclined to admit such instances, when they occur in married women, among the monsters where a part only of the weaker child has been preserved. See MONSTRUM.

Page 321, col. 1, line 65; "OXALIC ACID."—This acid is prepared by boiling the nitric acid in sugar, mucilage, alcohol, silk, animal jelly, &c.; and many of the vegetable acids are convertible into the oxalic in the same way, except the acetous, which is, in all, the ultimate state. About fifty-eight parts of this acid may be obtained from one hundred of sugar. The oxalic acid crystalises in four-sided prisms, the faces of which are alternately broad and narrow, terminating in dihedral summits, not deliquescing; but in the air falling into a

dry powder. The acidity to the taste is highly pungent; but, when diluted, grateful. The crystals dissolve in their own weight of boiling water, and twice their weight of cold. The specific gravity of a cold saturated solution is 1.06. Its properties are destroyed by heat, in proportion to the degree of temperature. On heating in a retort, with a gentle fire, the water of crystalisation, three tenths, or, according to Dr. Thomson's late experiments (Phil. Trans., 1808, part 1.), one fourth first comes over, and the acid melts. In a greater heat the acid grows brown, part is sublimed in a white crust, the remainder resolved into carbonic acid, and carburetted hydrogen, which come over in large quantities, and have a pungent, empyreumatic smell. What remains in the retort burns in the open air, without leaving any ash.

Alcohol, in a boiling heat, dissolves somewhat more than half its weight of oxalic acid, part of which only is deposited in scaly crystals on cooling. On distillation a portion of the acid comes over with the alcohol, accompanied with a small quantity of imperfect ether. The acid contains seventy-seven parts of oxygen, thirteen of carbone, and ten of hydrogen. The proportion of oxygen is, therefore, very considerable. The malic acid generally accompanies the oxalic, and remains in the mother liquor after crystalisation. It appears an imperfect oxalic acid, convertible into the latter by a continuation or repetition of the process. The acid of woodsorrel, in common language its *essential salt*, is an oxalat of potash, with an excess of acid.

Oxalat of lime contains 62.5 of acid, 37.5 of the basis; and the oxalic acid itself, according to Dr. Thomson, consists of oxygen 64, carbone 32, hydrogen 4. These principles are differently combined, forming, in the primary analysis, water, carbonic acid, and oxide, carburetted hydrogen and charcoal. We shall add the properties of the different oxalats in Dr. Thomson's own words, from the volume just referred to.

"The oxalates of barytes and strontian are white, tasteless powders, which may be obtained by mixing oxalate of ammonia with the muriates of these alkaline earths. It is said that these earths are capable of forming soluble superoxalates with this acid; but I have not tried the experiment. These oxalates, as well as oxalate of lime, are partially soluble in the strong acids.

"Oxalate of magnesia is a soft white powder, bearing a considerable resemblance to oxalate of lime. It is tasteless, and not sensibly soluble in water; yet when oxalate of ammonia is mixed with sulphate of magnesia, no precipitate falls; but if the solution be heated and concentrated sufficiently, or if it be evaporated to dryness, and redissolved in water, in both cases the oxalate of magnesia separates in the state of an insoluble powder.

"Oxalate of potash readily crystalises in flat rhomboids, commonly terminated by dihedral summits. The lateral edges of the prism are usually bevelled. The taste of this salt is cooling and bitter. At the temperature of 60° it dissolves in thrice its weight of water. When dried on the sand bath, and afterwards exposed in a damp place, it absorbs a little moisture from the atmosphere.

"This salt combines with an excess of acid, and forms a superoxalate, long known by the name of *salt of sorrel*. It is very sparingly soluble in water, though more so than tartar. It occurs in commerce in beautiful four-sided prisms attached to each other. The acid contained in this salt is very nearly double of what is contained in oxalate of potash. Suppose a hundred parts of potash; if the weight of acid necessary to convert this quantity into oxalate be x, then $2x$ will convert it into superoxalate.

"Oxalate of soda readily crystalises. Its taste is nearly the same as that of oxalate of potash. When heated, it falls to powder, and loses the whole of its water of crystalisation. Soda is said to be capable of combining with an excess of acid, and of forming a superoxalate. I have not tried the experiment.

"Oxalate of ammonia is the most important of all the oxalates, being very much employed by chemists to detect the presence of lime, and to separate it from solutions. It crystalises in long transparent prisms, rhomboidal, and terminated by dihedral summits. The lateral edges are often truncated, so as to make the prism six or eight-sided. Sometimes the original faces of the prism are nearly effaced.

"The taste of this salt is bitter and unpleasant, somewhat like that of sal ammoniac. At the temperature of 60°, 1000 grains of water dissolve only forty-five grains of this salt. Hence, 1000 grains of saturated solution of oxalate of ammonia contain only 43.2 grains of this salt. The specific gravity of this solution is 1.0186."

The very minute and correct analysis of this acid which follows belongs rather to the chemist than the physician.

P.

PALPEBRÆ.—Page 327, col. 2, line 9; "*surface of the globe*."—The eyelids are subject to all the diseases of external parts, even cancer: they are sometimes inverted, everted, or reflected, occasionally inflamed, or subject to meliceris, tubercles, warts, or steatoms. The thickening of the eyelids, with inflammation, is most commonly a symptom of scrofula. All these complaints are noticed under their appropriate titles. The palsy of the upper eyelid, which occasions its falling down, seems to merit particular notice. It is often periodical, sometimes spasmodic, or from a wound of the elevator muscle. Topical stimulants of every kind, with tonics internally, have usually succeeded, and, when periodical, as we have, in two cases, seen it, occurring towards night, the bark seems to have been advantageous. Richter advised musk with emetic tartar in a case which arose from spasm (Commentaria Gottingen, iii. 35), and Severinus the actual cautery. See also TRICHIASIS and HORDEOLUM.

PANCREAS.—Page 329, col. 2, line 6; "*appropriate distinguishing symptoms*."—Like the other internal viscera, it is occasionally subject to schirrosity and cancer; but these complaints are only known by the general indisposition, from the infarction of different internal organs. It is sometimes suppurated, or calculi are found in it. Storck (Annus Medicus, ii. 245) mentions it as the source of hæmorrhage, and it has, in many instances, been found of an enormous magnitude.

PANTOPHAGUS, (from πας παντος, and φαγω, *edo*).

INDISCRIMINATE EATERS. These are chiefly maniacs or itinerants who devour every thing the most disgusting and indigestible, to excite wonder and pick pockets. It is astonishing, however, what substances have been occasionally taken into the stomach with little injury. Toads, spiders, leeches, cantharides, living fish, &c. as well as knives, pieces of glass, and leaden bullets. The favourite food of the pantophagus appears to be a knife or a piece of glass. It is useless to adduce authorities on this subject, or to enlarge the article with numerous instances.

PARAPLEGIA.—Page 337, col. 1, line 40; "*lower extremities only.*"—It is perhaps more correct to extend the limits to all cases of palsy below the neck, as it so often happens from falls and injuries in the neck, from blows, gun-shot wounds, &c. Morgagni mentions it as following apoplexy (De Sedibus, ii. 2), in a case selected from Gorræus; and Saviard has observed it, independent of luxation or fracture (Observations Chirurgiques). In the Memoires de Chirurgerie, tom. iv. it is said, by Howset, to have been owing to syphilis.

PAROTIS.—Page 339, col. 2, line 34; "*synonymous with bubo.*"—Swellings of the parotids constitute the disease called the mumps (see ANGINA PAROTIDŒA), and, in this view, it is sometimes epidemic and occasionally contagious, or, at least, so in appearance, from the number of persons attacked at the same time. In general, however, these tumours, though they yield slowly, are seldom dangerous. They have been relieved by leeches, by blisters in the neighbourhood, by cold, and sometimes by stimulating applications, with bark, and hemlock, or both internally. Parotids are said to happen more frequently on the left side, on account of the disadvantageous insertion of the left jugular vein. A more dangerous disease, however, of this organ is what has been styled the *malignant parotid.* It swells like the milder kind, and is, at first, scarcely distinguishable from it, but by its attacking in advanced life, and in females about the periodical change. It is not painful, and advances slowly to suppuration. If the latter can be prevented by leeches, cooling applications, &c. the inconvenience, for many years, is not considerable; but when it suppurates, the pus is seldom laudable, and the patient soon sinks from the discharge. In this case, bark, hemlock, and the whole tribe of poisons, have been tried in vain. The wound enlarges, the sloughs become deeper, till the constitution is completely undermined, and gradually sinks. The schirrous parotids may be extirpated, but the malignant sink deeper, and will not admit of the operation, which is always dangerous, from the numerous large vessels in the neighbourhood.

PASTINACA OLUSATRA.—Page 348, col. 1, line 39; "*Germanicæ affinis panax.*"—*Pastinaca opoponax* Lin. Sp. Pl. 376.

PELVIS.—Page 354, col. 1, line 35; "*at least in that instance.*"—M. Tenon, in the first part of an elaborate memoir on the bones of the pelvis, has examined this subject at considerable length. He has shown that the cartilage at the articulation of the pubes is sometimes single, at others double, and that those have been mistaken who have exclusively described one or two cartilages. The double cartilage exists in men, as well as in women, but in the latter more frequently, and in women who have not conceived, as well as those who have borne children. Between these cartilages there is sometimes a partial, sometimes a general, separation, both in length and breadth. This cleft is in many instances only capillary; in a young woman who had just lain in, it was nearly a finger's breadth. None of the cartilages, at any period, had altered their consistence, and were neither softened nor thickened; so that in cases where the ossa pubis seem to have separated, the disunion depends on the double cartilage, not any softening of the cartilage, but in such circumstances, the ligaments seem to have softened and yielded.

The great object of dispute is, whether any separation of the bones takes place where there is a single cartilage only. M. Tenon thinks that, in such a case, the cartilage is truly softened; and this leads to a more general conclusion, that the separation of the bones is either natural when there are two cartilages, or arising from a softening of the cartilage, or from a rupture when there is a single one. This separation is found in women not parturient, and even in men, and supports the observations of Parè, Riolan, &c. that it has really taken place in labour; observations denied, eluded, or explained away. These inquiries explain also why such separation does not always occur, as well as the remark of Morgagni, who saw, with astonishment, the evacuation of a fluid when the symphysis was divided. Such are the observations of M. Tenon, and we can only add that, though they elucidate the sigaultion operation to a certain point, they do not decide on its merits, which depend on the space really obtained by the section. The first attempt of this kind on a dead subject is recorded by Thomas Bartholine, in his tract "De insolitis partus humani viis." It will detract from the high opinion entertained of the new institution of the capital of France, when we remark, that this memoir, published in 1806 (Memoires de l'Institut, v. 6.), was really read in 1774.

The bones of the pelvis, in general, have often receded from falls, and shocks of different kinds; nor are there wanting numerous instances where they are said to have separated in the time of labour—a circumstance which M. Tenon's researches may explain.

PEMPHIGUS.—Page 356, col. 1, line 64; "*opiates and demulcents.*"—Since the printing of this article, we have received the concluding part of Dr. Willan's first volume, in which, with his usual accuracy of discrimination, he treats of pemphigus. He considers the varieties described by different authors as referable to the *common, contagious,* and *infantile pemphigus.* The first appears to him to be the only idiopathic disease. The history collected by Dr. Willan from different authors we shall add.

"From the different accounts of this complaint, it appears, that after a series of febrile symptoms, as shiverings, heat of the skin, headach, thirst, nausea, a sense of oppression, with anxiety in the stomach and chest, difficulty of swallowing, and often a delirium, the bullæ arise, with a slight redness at their bases, generally on the second or third day, but, in some cases,

on the fourth, fifth, or sixth day. They are, at their first appearance, very small, but within forty-eight hours they increase to the size of a filbert or a walnut, and are surrounded by a dark red border: they are distributed over all the surface of the body, and sometimes over the tongue, fauces, and inside of the cheeks. The eruption of them takes place successively, and is, in different cases, completed in four, six, or eight days: during that time, the febrile symptoms, in which there are only short remissions, denote considerable danger. As the bullæ or phlyctænæ decline, the contents of some of them become yellowish, of others slightly livid. When they are broken, the ulcerated surface appears also livid, and discharges a thin serous fluid for some days, being finally covered with a black or yellowish scab. Two or three weeks elapse before these scabs dry off, and the cuticle is restored."

The *pemphigus contagiosus* we have referred to, in the Acta Helvetica. It is, as Dr. Willan observes, an endemic disease, resembling scarlatina anginosa, but certainly differing from it, as the pustules differ greatly in appearance from the ulcerations in the latter case, and as the danger vanishes, on a metastasis to the external parts, particularly the conglobate glands. If no metastasis takes place, and the disease be neglected, the pustules collapse, and a corroding ichor produces deep, fœtid ulcers, which destroy very quickly. This indeed appears to us a truly idiopathic disease, while those, bullæ, which attend the plague and camp fevers, are symptomatic only. The latter are distinguished by their arising at no particular period of the disease, and by their occurring in fevers of various types. Of this kind were the tumours described by Thucydides, which he observed in the plague in Athens. The pemphigus indicus from Bontius was characterised by similar eruptions attending a dysentery.

The *pemphigus infantilis* is scarcely a febrile disease. The bullæ appear soon after birth, and seem to arise from an impoverished state of blood, producing effusions, which in a weak habit soon terminate in putrid ulcers.

PENIS.—Page 356, col. 2, line 34; "*any other part.*"—The penis differs singularly in size without detracting from its office. Its diseases are the common ones of suppuration, excoriation, cancer, &c. But, independent of these, we find sometimes a partial ossification in the corpora cavernosa, sometimes a contraction of these from previous inflammation, which renders the turgescence of these bodies painful, or the penis itself curved on erection. The latter effect has arisen from a tophaceous concretion under the glans (Ab Heer), and this is probably the cause of the curvature of the penis, noticed by Hunter, as arising from gout. It is said to be sometimes double, or rather perhaps bifid.

PERICARDIUM.—Page 358, col. 1, line 11; "*inflammation, and suppuration.*"—Senac has informed us, that the pericardium sometimes contains pus, bones, and calculi, sometimes air or blood. It is occasionally wanting, or more probably adheres closely to the heart, is cartilaginous and steatomatous. The best authors consider wounds in it to be fatal, though there appear to be some instances, probably where the heart itself was unhurt, in which the patient recovered.

PERITONÆUM.—Page 364, col. 2, line 7; "*processes of the peritonæum.*"—In the duplicature calculi are sometimes found, and the whole membrane is often greatly thickened. For its connection with the womb, see UTERUS, Appendix.

PERSICARIA URENS.—Page 365, col. 2, line 34; "*destroyed in distillation.*"—In some instances, however, the distilled water has appeared slightly acrid, and the spirituous tincture was equally mild. Its acrimony is dissipated in drying. It is used by veterinary surgeons, to destroy fungous flesh, and clean putrid ulcers. The leaves, boiled in water, have been sometimes applied to œdematous swellings, and in Astracchan it is said to be employed in cancer, and ulcers of the nose and throat. Its distilled water was formerly used by tea-spoonfuls in calculus, alternated with oil of almonds, to blunt its acrimony; but in no form had it any action on the calculus out of the body.

PETECHIA.—Page 373, col. 1, line 29; "*peculiarly violent.*"—In the moment of writing, another case has occurred in a young married woman, strong, and otherwise healthy, without any known cause. The petechiæ were general, and the hæmorrhage, which was from the nose only, continued, with scarcely any intermission, for four days. It ceased as soon as the spots recovered their florid hue, and within a few days, at the accustomed period of the catamenia, they came on in their usual manner.

PEUCEDANUM.—Page 374, col. 2, line 2; "*flowering in July.*"—The roots are thick and elongated; externally of an obscure brown, internally, white: when wounded they exhale a milky juice, which, on drying, becomes yellow, from which, and its fetid smell, the plant has obtained one of its appellations. It is said to be an aperient, and is certainly a narcotic, sometimes a laxative and emmenagogue. The decoction is externally applied in itch, perhaps from the colour of the juice and the name.

PHELLANDRIUM AQUATICUM.—Page 385, col. 1, line 11; "*petals white.*"—The plant, like the other umbellatæ, is suspicious. The seed is oblong, striated, of a yellowish green, of the size of the dill seed, slightly aromatic, and constantly acrid; in taste resembling the seed of the levisticum. Distilled with water, it yields an oil of a pale yellow, pungent to the smell, which imparts to spirit the same colour. A pound of the seeds yields an ounce of watery extract, and nearly two of spirituous, of which three drams and five grains are a pure resin. It is commended as a lithontriptic by Pliny; but it is uncertain whether the plant is the same: and the numerous virtues ascribed to it by Dodonæus, who recommends it as a lithontriptic, emmenagogue, a diuretic, &c., have not been sanctioned by the experience of others.

PHYTOLACCA AMERICANA.—Page 408, col. 2, line 20; "*dissolves them.*"—The berries, when unripe, are equally acrid, and often smartly laxative: when ripe they are eaten without injury. The colour is so deep that they are often employed as dyes, and the port wines are said to derive their deep redness from them. The inspissated juice of the whole plant is applied to

cancers, and excites most violent pain, which must be borne for twenty-four hours. The application is repeated at proper intervals, and the cancer is thrown off. The juice must, however, be expressed in the autumn; for in the spring it is comparatively mild. This practice, which originated in America, was at last brought to Europe; and some cases, illustrating its success, are published in the Memoirs of the Economical Society at Berne, 1764, iii. 184. An infusion of the leaves was there given in the dose of a pint, twice a day, the part fomented with the expressed juice of the leaves, or rubbed with the fresh leaves bruised. Haller speaks favourably of its effects; but in other hands the remedy has failed, and it has become the secret of quacks. In foul ulcers, resembling cancer, it is said to be equally effectual.

PIMPINELLA.—Page 410, col. 2, line 19; "*dry pasture grounds.*"—The root is acrid; but the heat it excites on the tongue is not of a long continuance: the odour is volatile and transitory. It is said to dissolve viscid humours, and is consequently used in asthma, coughs, cold phlegm in the stomach, &c. When chewed it excites a copious discharge of saliva. Like other stimulants, it occasionally proves sudorific. Its true menstruum is alcohol: its essential oil is yellow, and very pungent. Linnæus, in the system of vegetables, has lately separated this variety from the following; and the pimpinella alba, in that work, is styled pimpinella magna. Systema Vegetabilium, 241.

PLANTA.—Page 423, col. 2, line 11; "*mushroom tribe.*"—Carious corn has been examined by the most refined arts of modern chemistry. The analysis of Cornette, twenty years since, taught him that wheat thus injured contained an ammoniacal extractive matter; a fat thick oil, which imparted a colour to water and alcohol; much gas, and a little calcareous earth with a fixed alkali. More lately, M. Girod-Chantrous thought he discovered in it an acid peculiarly fixed, and in this respect differing from every other vegetable acid, partly combined with lime. These experiments MM. Fourcroy and Vauquelin particularly examined, and the result is lately published in the sixth volume of the Memoirs of the Institute. They found in it, 1. A green oil resembling butter, forming nearly one-third of its weight, with a strong fetid smell, dissolving in boiling, scarcely at all in cold, alcohol, giving the damaged corn its consistence, and unctuous feel. 2. A vegeto-animal matter, soluble in water, insoluble in alcohol, precipitating the sulphat of iron, the nitrats of silver and mercury, the acetat of lead, and the infusion of galls. This matter, which seems to arise from the decomposed gluten, amounts to one-fourth of its weight. 3. A coaly substance, intimately united with the two former, colouring the carious corn, and arising from the same putrid decomposition as we see in mould, and amounting to 0.2 of the whole. 4. Uncombined phosphoric acid, forming only 0.004 of the whole; but in sufficient quantity to give this deteriorated seed the property of reddening the blue tinctures of vegetables. This acid, which dissolves only in water, draws with it a portion of vegeto-animal matter, whose solubility, in that liquid, is thus augmented, and which is precipitated when the acid is saturated by alkalis. 5. Small proportions of phosphats of ammonia, magnesia, and lime, with a very little phosphat of iron, as in all vegeto-animal remains. Thus, wheat is reduced to an oily, coaly, matter, almost bituminous, containing neither gluten, starch, nor saccharine matter.

Though these authors admit the existence of a carious germ, they think that the disease may be often produced, accidentally, by different causes, which act previous to the formation of starch; a substance admitting of little change. These causes are, 1. an excess of animal manure; 2. of rain at the season of bloom; 3. an imperfect fecundation from copious rains; 4. warmth with moisture.

PLUMBAGO.—Page 430, col. 2, line 49; "*substitute for it.*"—It is sometimes called dentaria, from its use in toothach; and the leaves, infused in olive oil, have been considered as an efficacious remedy in cancers.

POMPHOLYX.—Page 442, col. 1, line 30; "*resembling the urticaria.*"—Dr. Willan confines the term to an eruption of bullæ, without inflammation at the base, and without fever; and he particularly speaks of pompholyx benignus, diutinus, and solitarius.

The *pompholyx benignus* consists of slight watery vesications from the heat of the weather; from some acrid matter in the stomach; in some instances from mercury, when the constitution is irritable; from vaccine inoculation, when old dry matter has been used; and, in infants, from dentition. The vesications appear sometimes yellowish, but the fluid in general contains less of gluten than the serum of the blood.

The *pompholyx diutinus* is more violent and general, preceded by a smart tingling of the skin, and accompanied often by a slight fever, which seems, in a few instances, to be the precursor of the bullæ. If the fluid is discharged from a small orifice, it is soon supplied; but if the skin is much broken, a foul, painful, irritable sore is often left. The bullæ are frequently numerous, rising in succession, and the duration of the disease consequently variable. It often attends anasarca, is described by Eugalenus as a symptom of scurvy, and it occasionally supervenes in some kinds of lepra. This complaint arises from excesses of every kind, fatigue, watching, violent passions, the repulsion of exanthemata, or other eruptions; in fact, from every cause of debility. The chief remedies are, the Peruvian bark, or Plummer's pill, with the decoction of sarsa, dulcamara, elm bark, &c. In old persons, as in these it seems to arise from an impervious cuticle, the warm bath is useful, but not so in younger subjects: in the latter, the bark joined with diuretics is often successful.

The *pompholyx solitarius* affects, in appearance, women only. A bulla rises in different parts, leaving, when broken, a slight ulceration. This disease is attended with sickness and languor, without fever.

Willan on Cutaneous Diseases, order iv; Burserius de Pemphigo; Lorry, de Morbis Cutaneis; Memoirs of the Medical Society, London, iv. 1; London Medical Journal, x. xi. 234; Hoffmann de Affectu raro, Scorbutico, Pustulari, Supplem. ii.; Medical Commentaries, vi. (Pemphigus Major of Sauvages); Journal de Physique, ii. 2.

POPULUS NIGRA.—Page 443, col. 2, line 41; "*resembling storax.*"—This tincture is used in inveterate diarrhœas and internal ulcers, in a dose of from half a dram to a dram. The oil was formerly called *ægerinum*, and used for softening the skin and relieving the pains of gout. A similar oil is obtained from the populus alba.

PULMONARIA.—Page 479, col. 2, line 44; "*lichen pulmonarius* Lin. Sp. Pl. 1612."—The taste is mucilaginous, subastringent, and somewhat acrid, softening by mastication. From four ounces, six drams and two scruples of a watery extract were procured, slightly acrid and bitter. The resinous extract was half an ounce in quantity, somewhat more bitter. It is mucilaginous; but less so than the lichen islandicus, and, with the solution of sulphat of iron, becomes slightly livid. The Siberian variety is so bitter that it is used instead of hops. As the name imports, this lichen has been used in pulmonary complaints; but it is not superior to the other lichens; inferior, it is said, to the LICHEN ISLANDICUS, q. v.

PULSATILLA.—Page 481, col. 1, line 38; "*considerably active.*"—The herb and flowers, rejecting the root, distilled with eight parts of water to one half, is highly acrid and penetrating. When saturated with the herb in a recent state, after some weeks, it deposits milky, plain, striated crystals, resembling camphor in its unctuous taste, deflagrating in flame, and evaporating in pungent vapours. Some of these crystals, though insipid to the taste when entire, become, on melting, highly acrid, leaving a sense of stupor on the tongue. The aqueous extract, though at first highly astringent, soon excites a pungent sensation, and a very permanent heat.

It is said to cure foul ulcers, though not proceeding from a venereal cause, to be of considerable service in palsy, and in one case of melancholia. Patients bear the extract more easily than the distilled water; but the latter, or an infusion of the plant, is used with success when applied to ulcers, caries, and serpigo. It is said to be particularly useful in amaurosis, though its efficacy in this complaint is denied by Richter.

PURPURA.—Page 485, col. 1, line 16; "*of a very different nature.*"—Dr. Willan, in his late publication, confines the term to an efflorescence, consisting of small, distinct, purple specks, attended with great debility; but not always with fever. The varieties are purpura simplex, hæmorrhagica, and urticans.

The *purpura simplex* resembles petechiæ, and may be distinguished from flea-bites by the spot in the middle, the mark of the animals spear. It is attended with languor, debility, and pains in the limbs; nor does it differ from the morbus petechialis sine febre.

The *purpura hæmorrhagica* is attended with hæmorrhages, anasarcous swellings, and vibices, preceded by lassitude and faintness, sometimes by shivering, vomiting, and acute pain. The spots attack every part; but chiefly the inside of the mouth and fauces, where they sometimes assume a papular form, and, on the surface, are occasionally interspersed with larger livid patches, like enchymoses from a bruise. It is, in reality, only a more violent degree of the former variety. It chiefly affects persons of a weak, delicate, and irritable habit, chiefly females, sometimes boys, particularly those confined to close damp rooms, whose diet is not sufficiently nutritive. The great remedies are air, exercise, alimentary diet, with Peruvian bark and vitriolic acid.

The *purpura urticans* begins with hard, reddish, rounded elevations of the cuticle, which gradually dilate; but, within twenty-four hours, subside to the former level, and are succeeded by livid spots of the same extent, with a little redness and livor intermixed. The spots are not permanent; but succeed each other in different places, chiefly on the legs, sometimes on the thighs, arms, and breast; and, after some time, are attended with anasarcous swellings. The languor and debility are highly distressing. The disease appears chiefly in summer and autumn, affecting those exposed to great fatigue, with a diet unalimentary, and young women who live luxuriously, and use little exercise: in the latter, previous to the anasarca, which is chiefly confined to the legs, these parts are hard and enlarged. The remedies for this variety also are the bark, with the mineral acids. In all its forms, Dr. Willan thinks the disease connected with scurvy. Like scurvy, the purpura is owing to a dissolved state of the blood; but differs from it in the most essential circumstances. See the references collected by Dr. Willan, vol. i. p. 463—6.

Q.

QUASSIA LIGNUM.—Page 496, col. 2, line 48; "*quassia amara.*"—The root was at first employed; but it seems to differ little from the wood, which is now chiefly used. The size of the pieces imported varies from that of the arm to a quill. The bark, which remains attached to some of the pieces, is thin, rough, wrinkled, of a grey colour, variegated with white, easily separated, friable, and, on its internal surface, grey. The thicker the pieces the more compact is the wood (but its specific gravity is at no time considerable), the whiter the colour internally, and the bitterer the taste. Where a darker colour appears on the surface, and penetrates into the wood, the latter is insipid and inert.

The bitterness is considerable in every part, but most so in the bark. The wood, however, is so bitter that a scruple imparts a bitter taste to a pint of water, and, in summer, twelve successive infusions scarcely deprive the wood of the whole of its flavour. It excels every other bitter, except the colocynth and gentian, and seems in no instance to excite the action of the heart and arteries.

In the exhibition of quassia it is of consequence to attend to its affinities. Vegetable acids seem to destroy its bitterness, probably its efficacy; but the mineral acids produce no change. The cinnamon and its preparations, the orange-peel, cloves, ginger, or vitriolic ether, do not affect it; but render it more agreeable: the change is, however, temporary; for the bitter flavour returns with increased intensity, unless these substances are added in a quantity which may probably destroy the virtues of the quassia. The most agreeable preparation of this wood is a tincture made with Spanish white wine. Quassia imparts its virtue to water, wines, or spirit: the infusion in water is, however, preferable to the decoction. The quantity of watery

extract varies from one-fourth to one-ninth; but it is intensely bitter. The spirituous extract varies from one-twenty-fourth to one-thirtieth; and a very small quantity, if any, of essential oil can be extracted from it.

Quassia is said to be a powerful antiseptic; but its chief use is in remittent fevers. In intermittents, with other bitters, and in putrid continued fevers, it is said to have been successful. In weakness of the stomach, and all the mischief it produces, quassia is supposed to be highly useful; and its virtues are said, by a French author, to be increased by adding the flowers of zinc. In hysteria, hypochondriasis, in gout (except when highly inflammatory or misplaced), in calculus, and worms, it has been recommended; but, as we have remarked, it appears to have no very striking preference over other bitters.

QUERCUS MARINA. "See KALI." *Fucus vesiculosus* Lin. Syst. Vegetabilium, 966. The Kamtschatdales use this fucus in diarrhœas; but it is chiefly celebrated for its good effects in obstructions of the glands. About the vernal equinox, the little bladders that distinguish this weed are filled with a saponaceous juice, which grows thicker till about July, when the vesicles burst. This fluid is said to render the skin smooth and soft. But, when it becomes fetid, it possesses some pungency, which is felt in the fingers, and corrugates the skin. It is chiefly useful as a discutient about its decline, and then changes the juice of violets to a green colour, and after evaporation a pungent salt is left. The saponaceous fluid is more easily collected if the weed is kept in sea water, and for this purpose a pound must be kept in a quart of sea water till it grows thick. When the disease is declining, the recent weed is sufficiently strong.

When burnt to ashes it affords the *ethiops vegetabilis*, and an ounce of the weed yields ninety grains of ashes, which have a saltish and sulphureous taste, not unlike that of hepar sulphuris. The magnet attracts some particles from it. By lixiviation, from a dram of the æthiops twenty-two grains of salts may be procured, which are the same with those from sea water. The coal, with the assistance of Glauber's salt and selenite, forms a kind of hepar sulphuris. About a dram is a proper dose, though, in such a quantity, it often excites nausea. Russel highly commends it in scrofula; but he added too many other medicines to enable us to ascertain the real merit of the vegetable ethiops.

QUINOA. See ANSERINA.

RHODIÆ RADIX. *Rhodiola rosea* Lin. Sp. Pl. 1465. The root is thick, branched, cinereous, marked with frequent furrows, internally white and fleshy, of the odour of roses, and styptic. In the Lapland alps it is peculiarly fragrant, and the distilled water resembles in smell and taste that of roses. A pound yields a dram of essential oil, of the same smell and taste, and of a yellow colour; nor is the odour lost in the dry root. (Bergius.) In the Ferroe islands it is a remedy for scurvy, and is applied to the forehead in pains of the head.

RHODODENDRON CHRYSANTHEMUM.—Page 520, col. 2, line 22; "*flowering in June and July*."—Its qualities are said to differ greatly, according to the soil in which it is produced. The leaves, gathered near the Baikal lake, are said to be narcotic only; on the banks of the Lena, cathartic; in Kamtschatka, more weak; and in the island Beringium, it induces suffocation, without either a narcotic or cathartic power. The alpine plant is preferable to what grows in lower situations, and it should be gathered before its flowering, or during this period. The leaves and tops are chiefly employed; but the stalk seems not without its merits, as, though less bitter, it is more austere. The smell of the dry plant resembles that of rhubarb. The decoction is of a reddish brown, and of a nauseous smell: the taste is a combination of austere, bitter, and acrid. The concentrated infusion resembles bohea tea, and it is blackened with sulphat of iron.

Its inebriating quality shows a narcotic power, and it is used with success in rheumatism and gout. It is not advantageous in fever; for, though it is said to lower the pulse, it often increases the heat. In some it evacuates both the stomach and bowels, in others produces a troublesome constriction of the fauces, itching, pricking and exanthemata on the skin; sometimes a fetid sweat; at others a copious flow of urine. It has been singularly useful in a nervous sciatica; in coughs with troublesome expectoration, externally in arthritic ulcers, in schirrus and cancers. In Siberia the powdered leaves are used as an errhine in catarrh and headach.

R.

ROB.—Page 523, col. 2, line 19; for 1433, read 33.

ROSEOLA. A term employed by Dr. Willan to denote a rose-coloured efflorescence variously figured, without wheals or papulæ, and not contagious; scarcely in any instance idiopathic. He notices as varieties the roseola æstiva, autumnalis, annulata, infantilis, variolosa, vaccina, and miliaris.

The *roseola æstiva* is preceded by slight symptoms of fever, and the appearance of the eruption is sometimes prolonged from the third to the seventh day. The patches are distinguished from measles by being large and more irregular: they are at first red; but soon assume their peculiar roseate hue, and extend to the mouth and fauces. The itching, or the tingling of the skin, is troublesome; but, on the fifth day, all appearances vanish. It is sometimes more partial, and the rash is slightly raised above the surface, occasionally disappearing, with nausea, headach, and faintness, and again recurring. Women of a tender, irritable constitution are chiefly affected, and the eruption is occasioned by fatigue, sudden alternations of heat and cold, drinking cold water, or sleeping in damp sheets: it sometimes has attended the summer dysenteries. The fever and the peculiar symptoms distinguish it from scarlatina, with which it may at first sight be easily confounded. (See SCARLATINA.) This species is relieved by cool air, acidulated drinks, and occasional laxatives; nor is it dangerous, unless suddenly repelled by cold.

The *roseola autumnalis* consists of spots of an oval or

circular shape, sometimes of the size of a shilling, of a dark hue, and not accompanied by itching or tingling. It occurs chiefly in boys, and is removed by vitriolic acid.

The *roseola annulata* is sometimes attended with fever, sometimes without; but, in the latter case, it often continues for a long time, in a great degree disappearing in the morning, and returning at night. Disagreeable symptoms seldom arise, except the rings grow faint, or disappear. Dr. Willan thinks sea-bathing, and the mineral acids, internally, have been the most successful remedies.

The *roseola infantilis* (at the period of teething), *variolosa, vaccina,* and *miliaris,* are sufficiently known. In typhus, too, it sometimes occurs as a symptom. The *iris,* a cutaneous disease, which we mentioned in noticing Dr. Willan's arrangement, he refers to herpes, as the central speck appears to be a vesicle, and the ring immediately surrounding it to be often vesicular.

S.

SAL.—Page 534, col. 2, line 9; "*constituent principles.*"—Since the article was printed, Mr. Davy has, we find, continued his analyses and discoveries. The alkaline earths, barytes, strontites, lime and magnesia were united with metallic oxides, and revided, by the galvanic current, together. The metals, thus forming an amalgam, were afterwards separated by distillation. Alumine and silex, mixed with potash, by the same power are said to have shown some marks of decomposition. MM. Berzelius and Ponten, of Stockholm, by uniting hydrogen and nitrogen with quicksilver, formed an amalgam, which, by oxydation, it is said produced volatile alkali.

SAMBUCUS.—Page 540, col. 1, line 40; "*eruptive disorders.*"—As they stimulate, however, they should be used with caution. The fomentation is applied in external inflammations, and as a discutient in bruises. The flowers are applied also in bags in erysipelatous and œdematous swellings, joined with camomile-flowers, and occasionally with camphor.

The berries are oval, black, of the size of a pea, with an elevated stellated umbilicus, juicy, containing three seeds. The juice is red, but does not stain; sweetly acidulous, without flavour. The seeds are linear, approaching an oval, slightly wrinkled, covered with a hard arillus, and within the berry with a pulp slightly gelatinous. When dried they yield by expression about one-eighth of a green oil, of scarcely any taste or smell. The tops are often violently cathartic.

SARSA.—Page 546, col. 2, line 19; "*is indisputable.*"—It is sometimes given with success in chronic rheumatism, and is useful in discussing indolent tumours, not venereal. As a preservative from gout, in foul ulcers, approaching in their appearance cancers, and in different cutaneous complaints, the decoction has been useful. The *carex arenaria* is sometimes a successful substitute for it.

SCAMMONIUM.—Page 548, col. 1, line 29; "*forms the scammony.*"—The internal part of the root consists of two kinds of substance: that next the bark is wholly woody, and the part below is formed of a congeries of vessels containing the milky fluid. The juice is collected in the beginning of June, by removing the earth from the upper part of the root, and dividing it by an oblique section. A vessel is placed below, and filled in twelve hours. The colour greatly varies; but, if it retain the properties described, it is not of a less value. In its room the inspissated juice of the cynanchum monspeliacum is often sold, which is of a blacker colour, and inferior as a cathartic, as well as that of the other species of convolvulus, apocynum, &c. The true scammony is at first insipid, then slightly acrid, bitterish, exciting the discharge of saliva, and of a nauseous smell. Boulduc, from an ounce of scammony, obtained six drams of resin, a dram, or a dram and half, of gum, and about half a dram of fæces. Geoffroy, from six ounces, obtained five of resin. These proportions differ greatly from Lewis's experiments, mentioned in the article. The root only is cathartic, and the decoction acts more mildly; for half an ounce of the dry root, boiled in twelve ounces of water till a third part is consumed, produced five evacuations, while the same decoction from the root, deprived of its milky juice, procured three only. On this account Hippocrates and Dioscorides preferred the decoction; for the ancients, the Arabians, and even Hoffmann, were apprehensive of danger from its too great activity.

SCILLA.—Page 552, col. 1, line 55; "*are preferred.*"—Many authors, contrary to the opinion of Lewis, preferred the red squill. When recent, the quantity of mucilage is so considerable, that when rubbed with water or with vinegar the fluid will not pass through a filter. When dry, from the hardened mucilage, it is tenacious, and with difficulty powdered; impressing on the tongue an intense, disagreeable, and permanent bitterness, though without evident marks of acrimony, which seems to be covered by the mucilage. In drying it loses four parts in five, which appear to be water only. The watery infusion is of a pale yellow, intensely bitter and acrid; and the smell, during evaporation, resembles that of the root of the apium hortense. If inspissated, the extract is of a yellow brown, bitter, acrid, and burning; in quantity about three-fourths of the dry root. The tincture is of a golden colour, and not less bitter or acrid. An alkali lessens the bitterness considerably, an acid slightly only. The ancients used various means of correcting its acrimony; but involving it in paste, and baking it, is the only method now retained. In this country we are not apprehensive of its bad effects, and therefore neglect these plans, which only render it more manageable by lessening its powers. The additions to diminish its virulence were honey, vinegar, spices, &c.

Foreign physicians forbid the use of squills in a variety of circumstances, few of which influence the British practitioner, as too great sensibility and irritability; a warm bilious temperament; too great a discharge of urine, or an internal ulcer (See Tissot Epistolæ, Medicinales, 406; Quarin Animadversiones Practicæ, 164, &c.; Stoll Prælectiones in Morbos Chronicos, 61, &c.). In general, we should avoid squills when the renal vessels are too much relaxed, or when acute inflammation exists in the lungs. When the inflammation in the latter case is somewhat moderated, or

when the sputum in hectics is checked from debility, they may be admitted. In a mucous discharge from the urinary passages, and in nephritis sabulosa, it is given by the German physicians; in each of which cases we should admit it with hesitation, on account of its acrimony. It has been given also in scurvy and in worms; but in neither with any marked success.

SENEKA.—Page 574, col. 1, line 51; "*cultivated in our gardens.*"—The taste is at first farinaceous, then subacid, followed by a pungency and a sense of constriction in the larynx. Some authors consider it as an aromatic, and Du Hamel calls it a strong aromatic. The sapid parts are confined, however, to the bark of the root, which in the thickest root constitutes about a third part; in the thinner pieces a sixth.

A watery infusion of the bark is at first bitterish, then pungent, with a constriction in the fauces. The watery extract, about one-third of the whole, has the same taste. The spirituous extract is much milder, and scarcely equal to one quarter. The wood offers nearly the same results. Sarcone gave it, in rheumatism, from its supposed resolvent power; others in dropsy, particularly in hydrothorax.

SILER MONTANUM, *laserpitium siler* Lin. Sp. Pl. 357; supposed to be the *ligusticum* of Dioscorides, and often found in the shops under the name of *seseli creticum*. The seed is oblong, striated, and highly odorous, and it affords a blue essential oil, of the smell of cumin. Its aromatic powers seem to be considerable; but it is neglected in practice, though a domestic remedy at Brunswick in diseases of the uterus. The root is warmer than the seeds, and used as a sialagogue in toothach.

SIMAROUBA.—Page 584, col. 1, line 29; "*under the name of mucer.*"—The bark of the root is the most active part; but that of the wood is scarcely inferior: the wood itself is light, fibrous, and almost insipid. It has no smell, and the taste is extremely bitter, without any astringency; but different specimens, from some unknown cause, differ in this respect. Nothing is separated by distillation, and the simaruba yields its virtues equally to water and to spirit; nor in a greater degree to warm than to cold water. The decoction is yellow, and on cooling becomes of a reddish brown. The milky colour which Jussieu observed on boiling it has not been seen by other physicians. From one-sixth to one-fourth of a watery extract may be obtained from it, though but one-fortieth by means of alcohol, and from the latter no resin could be separated.

In dysenteries, as usual, evacuations should be premised. In worms (De Haen), in uterine hæmorrhages (Degner de Dysenteria Biliosa, 289; Duncan's Medical Commentaries, iv. 443), fluor albus, and hysteria (Jussieu), it has been employed with success.

SOLANUM LIGNOSUM.—Page 589, col. 2, line 2; "*in June and July.*"—The berries are violently purgative and emetic, though apparently unchanged in the stomach. The stalks and roots are much milder, but efficacious, and frequently used in Austria, Sweden, and Germany. Each part is at first bitter, then sweet: the smell is virose. The stalks are less bitter than the polypody root; but must not be long boiled, lest the bitterness should be offensive. If given in large doses, before the stomach is accustomed to it, nausea and vomiting are the consequence; if too long continued, a palsy of the tongue. At first, delirium is often induced. From its narcotic power, the dulcamara seems to relax not only the vessels of the skin but those of the kidneys and the uterus. It is recommended in pleurisy, peripneumonia notha (Boerhaave), in hectics (Trewin Commentaria Norimbergica et Sagar), in scurvy, spasms, and convulsions; and in intermittent fevers. Collin.

SOPHIA.—Page 595, col. 2, line 19; "*like that of mustard.*"—The plant was used as an astringent in all cases of increased evacuations; and the seeds, which are small, oval, smooth, red, and of an acrid taste, are said to relieve diarrhœa, dysentery, nephritic and calculous affections, and to kill worms.

SPLEN.—Page 607, col. 2, line 46; "*from argument or analogy.*"—Since this article was printed, Mr. Home's opinion on this subject has appeared in the first part of the Philosophical Transactions for the present year. We may first remark some additional observations on the structure of the spleen. The small corpuscles, which we have correctly in the article styled cells, were found to be distended when the stomach had received an unusual quantity of liquids, and their membranous coat was then visible. Mr. Home, therefore, thinks it probable that the state of the cells is connected with the state of the stomach, that their distension is occasional only, and that the elastic capsule surrounding the spleen adapts it for the different states of fulness which it appears to experience. In the spleens of bullocks, horses, and hogs, these cells are found to have numerous arterial branches dispersed on their coats; but no venal ones. When the cells are, therefore, contracted, and the arteries minutely filled, the cellular appearance is lost. The intervals of the cells are sparingly supplied with arterial branches, which have no particular distribution. The veins, when injected, are more numerous and larger than the arteries, imparting a red colour to the whole substance of the spleen. They proceed from every part at right angles to the circumference: where the injection has been minute, they appear to form plexuses round the cells. The trunk of the splenic vein is to that of the artery as five to one; a greater disproportion than between any other corresponding vein and artery in the body.

Mr. Home's idea of the use of the spleen is, that it serves to convey the superfluous portion of fluid beyond what the process of digestion requires to the spleen. The opinions we suggested, that different portions of the stomach act independently of each other, he carries farther, and thinks that a division takes place between the left and the right (the cardiac and pyloric) portion of the stomach, so that no more fluid is carried to the latter than the process of digestion requires. He finds, by experiment, that a large extra proportion of fluid is lost; and, on employing coloured fluids, he discovered them in the spleen before they reached in their usual course the circulating system; at least some hours before they tinged the urine. Yet no canals are detected in conveying away this superfluous water; and, as we

know that the same office is rapidly performed by the lymphatics, we have no reason to erect the spleen into an office, at least unnecessary. We must confess also that we have little dependence on appearances, where animals are so much tortured. When the pylorus is previously tied, and an acrid fluid poured into the stomach, there can be no fair conclusion respecting what takes place in health; not to add, that in the stomach little change apparently takes place in the food, except from an intimate mixture with the animal fluids.

STÆCHAS CITRINA, *gnaphalium arenarium* Lin. Sp. Pl. 1195. The flowers were formerly used, but are now neglected; and we know little of their real merits, but that they are slightly astringent, supposed to be deobstruent, and to cure old catarrhs and jaundice.

STOMACHUS.—Page 619, col. 2, line 26; *"wholly uninfluenced."*—Mr. Home has endeavoured to show, that it not only acts partially lengthways, but, in the opposite direction, dividing the cardiac from the pyloric portion. See SPLEN, Appendix.

STRAMONIUM.—Page 621, col. 2, line 55; *"equally successful."*—We suspected that this assertion was too general, and, on examination, we find it so. Many of the German and Swedish physicians have supported the observations of Storck by their own experience, and Greding only (see Ludwig Adversaria) opposes them.

SUDOR.—Page 632, col. 1, line 25; *"contents of the serum."*—Since this article was printed we have received M. Thenard's analysis of this excrementitious fluid. He found it to contain a large proportion of water, some uncombined acetous acid, muriat of soda, almost imperceptible quantities of oxide of iron, and phosphat of lime, with a very minute quantity of animal matter, resembling gelatin rather than any other substance.

SULPHURIS RESINA FŒTIDA. From the analysis of sulphureous mineral waters, which contain the hydro-sulphuret of lime, Westrumb has procured a substance to which he has given this appellation. (See Gehlen's Journal.) He distilled these waters without air, and dissolved the residuum in alcohol. When the spirit is drawn off, the residuum resembles yellowish fat, changing successively to a brown colour, and becoming resinous. By repeated solutions in alcohol and evaporations, it becomes sulphur, and a blackish brown resin. This resin has a garlic smell, increased by pouring water into the alcoholic solution, and seems to perform the functions of an acid. It gives a yellow colour to ammonia, and with lime water we obtain an hydro-sulphuret. All these solutions act on metallic combinations, like sulphurated hydrogen. Michaelis found this substance in the fluid floating above the precipitated sulphet of the hydrogenated sulphuret of antimoniated potash.

SWIETENIA MAHAGONI Lin. Sp. Pl. 548. The beautiful wood which this tree affords is well known; but the bark is the medicinal portion. It is brought to us in plano-convex pieces. When freed from its spongy covering, it is of a reddish brown, of a lamellated texture, tough, and about a line in thickness. It is more bitter than the Peruvian bark, which it rivals in astringency. It is equally useful with the latter in fever, without any apprehension of its inducing obstruction in the viscera (Lauder). In a healthy person it produces no inconvenience, nor any sensible effects. A dram of the powder is too large a dose.

T.

TACAMAHACA.—Page 643, col. 1, line 39; *"populus balsamifera."*—It is generally admitted, at present, to be the production of the former. In deep-seated pains these fumigations have been often found injurious, either inducing suppuration, or repelling the inflammation to a more important organ.

TARANTISMUS.—Page 645, col. 1, line 25; *"fevers of Apulia."*—In a late number of the Medical and Physical Journal is a case of this disease related by Dr. Comstock of America, in consequence of a black spider *running over the hand*; but in this narrative there are certainly some exaggerations of the imagination, and many, we more than suspect, of imposition. The distinction of colours and her father's hand are certainly the latter; for the acutest blind man cannot distinguish colours by the touch, except aided by the smell.

THUYA.—Page 657, col. 2, line 54; *"and other northern countries."*—Its smell is resinous, and the vesicles at the basis of the leaves are full of a balsamic juice. The leaves are supposed to be carminative and sudorific: the decoction is used in coughs and in intermittents. The wood is scarcely inferior.

THYMALEA MONSPELIACA.—Page 658, col. 1, line 13; *"a single seed."*—This is true *bark of Garou*, so much celebrated by Le Roy and the French surgeons. It is acrid to the taste, and caustic on the skin, properties derived both from its acid salt and resin. Vinegar takes up both its gum and resin, leaving the acid free. It has been introduced into a perforation of the lobe of the ear, to relieve headach, chronic ophthalmia, &c.; and the recent bark, or moistened with vinegar if dry, is employed to form issues, which are afterwards dressed with ivy leaves. The advantages obtained by this means are the same as result from similar drains, in any way, established.

TORCULAR.—Page 665, col. 1, line 24; *"wounds or amputations."*—Mr. Sharp has remarked that this instrument was invented by M. Morel, a French surgeon, at the siege of Besançon, in 1674; but the priority is apparently rather due to Mr. Loudham, a surgeon of Exeter; for it is mentioned by Mr. Young of Plymouth, in his Currus Triumphalis Terebinthinæ, published in 1678. This has been the history of the tourniquet, circulated in almost every surgical work. In the little volume, however, here referrd to, Mr. Young recommends this plan as his own, without claiming any merit from it (p. 30); and, when describing amputation with the flap, he speaks of "the manner of compression which *I have recommended*" (iii.). As he so ingeniously gives the credit of the flap operation

to Mr. Loudham, who was alive at the time of the publication, and lived many years afterwards, there is little claim on the side of that respectable surgeon to the invention. At the period mentioned, scientific communications were not common; and it is highly improbable that any plan practised at the siege of Besançon in 1674, should have been known in a provincial town a few years afterwards. To this we may add, that Mr. Young's letter is addressed to Mr. James Pearce, surgeon general to his majesty's navy, who would of course have detected so gross a plagiarism.

As we have engaged in the subject, we may carry on the history of this very important invention a little farther. It is next mentioned by Maurice, a French surgeon, in his Art of Bleeding, published at Paris in 1686, and by Nuck in 1692. These authors, and indeed Morel, applied only a towel round the limb, straitened by two sticks on each side in opposite directions: Young used but a single one. No precaution was taken to prevent bruising the parts, as the compression was circular, and Garengeot mentions gangrene as a frequent consequence. This inconvenience apparently continued till the time of Verduc; and even this rude instrument was not brought to all the perfection it was capable of till about the year 1730. Dr. Monro's improvements are described in the Medical Essays of Edinburgh; and the modern instruments are engraved in our plates.

U.

ULMARIA.—Page 684, col. 2, line 8; "*highly fragrant*."—The flowers are accounted sudorific, and an infusion of them is given when exanthemata appear slowly, or are suppressed. With sulphur they are given in repelled itch. The leaves are astringent.

URINA.—Page 688, col. 1, line 14; "*redden the blue vegetable juices*."—M. Thenard, in the fifty-ninth volume of the Annales de Chimie, has endeavoured to show that this uncombined acid, which renders the phosphat of lime soluble, is indeed the acetous. The existence of the benzoic acid he has also demonstrated by a process more unexceptionable than the usual one of sublimation.

URTICARIA.—Page 691, col. 1, line 12; "*be critical*."—This disease has been considered at greater length by Dr. Willan in the fourth number of his very valuable work, on Cutaneous Diseases, published since the article was printed. Urticaria, he observes, is characterised by round, oval, or longitudinal elevations of the cuticle, commonly styled *wheals*, which have a white top, often surrounded by a diffuse redness. Some of the orbicular wheals are said to resemble tubercles; but they have no tendency to suppuration, nor are they permanent; slight fever often attends, but the disease is not contagious. They itch and burn violently, and pass off in branny scales. The varieties, noticed by Dr. Willan, are urticaria febrilis, evanida, perstans, conferta, subcutanea, and tuberosa.

Urticaria febrilis. The fever which precedes this disease resembles those which precede other eruptions, and is attended with similar nausea, anxiety, and load in the head. The eruption is preceded by fits of coldness and shivering, attended with the very peculiar itching and tingling. It appears about the third day, and sometimes later, like an efflorescence in patches, of a vivid red or a crimson colour. The itching is greatly increased on going to bed, apparently from the little chill in uncovering the body. When peculiarly troublesome at night, the eruptions are ushered in by a slight return of the febrile paroxysm; but, at other times, they return and disappear irregularly: scratching always brings them on. At the latter end of the disease the eyelids swell, and are red, often with inflammation on the sides of the feet. When the eruption comes out, the stomach is generally relieved; but the pain and nausea return when it recedes. The disease usually continues seven or eight days; the eruptions become of a pink colour, and the cuticle desquamates. In a very few instances it has been fatal. This species is nearly allied to erysipelas, and spoken of by Sydenham under this title.

Urticaria perstans chiefly attacks the luxurious and the plethoric, most commonly in summer. Any irritation, as teething in children, will bring it on; but its chief source is food peculiarly rich, or, from idiosyncracy, *any* food. It is said to be often induced by eating an almond, frequently by muscles, crabs, and lobsters. We cannot but suspect, however, that the imagination had some share in the disease, which we are informed, in Tode's Bibliotheca, came on from taking *lapides cancrorum*. Patients are not very liable to relapse; but a singular case is quoted by Dr. Willan, from Frank, of a young man who had a return of it every day after dinner, though he confined himself to the mildest diet. Another is recorded by himself. The practice is very simple, consisting of the usual remedies for fever, with every means of regulating the cuticular discharge.

The *urticaria evanida* is without fever, or any extensive efflorescence. The wheals are white at the top, with sometimes a slight redness at the base; but, though hard, neither contain a fluid nor tend to suppuration. The disease is irregular in its appearance, and the parts it affects; in its duration and return. The persons affected are those of a sanguine temperament, an irritable skin, and a weak stomach; females rather than men; and induced by fatigue, watching, or agitation of mind. Heberden in the Medical Transactions, iii. 174; Van Swieten's Commentaries, § 723.

Various substances in the stomach have, it is said, produced the disease; but these are occasional causes only: the true morbid state is in the constitution; and though Dr. Willan has found that by omitting particular articles he has at times detected the real cause, he allows that he has not been always successful. The urticaria will appear with every diet, while in others nothing will induce it.

In the *urticaria conferta* the eruption is full and general. The spots are less than in the other species; but by coalescing they appear larger. The patches are often much inflamed at the base, and the itching at night is intolerable. The disease occurs, according to Dr. Willan, in persons who have a dry swarthy skin, and are above the age of forty, induced by excesses, too much heat and immoderate exercise. Cooling diet and mild alteratives are the best remedies.

Urticaria subcutanea appears only occasionally on the

surface; but the tingling and itching are constant. The inconvenience is first confined to one spot; but soon extends to the whole limb, and often more extensively to different parts of the body, with pricking pains, like needles, a slight torpor in the muscles of the part most affected, and occasionally with cramp, or severe pain in the extremities. Such patients have seldom any perspiration. These troublesome complaints are best relieved by a warm salt-water bath, and frequent frictions.

In the *urticaria tuberosa* the wheals in different places become tuberous, sink into the muscles, and impede their action. The tops are whitish, and they are hot and troublesome for several hours. This eruption usually takes place at night, and disappears in the morning, leaving the patient languid and sore. It sometimes continues, with but few intervals, for a long time; and is attributed, by our author, to irregularities in diet, violent exercise taken by persons usually sedentary, and the free use of spirituous liquors. Urticaria is described by the Greek and Arabian authors chiefly as symptomatic.

USNEA. *Cranii humani herba, lichen saxatilis* Lin. Sp. Pl. 1609. A sad monument of human folly and superstition! Under this title, however, many of the villous and crustaceous lichens have been used, which, if useful in dysenteries, hæmorrhages, &c. are so as lichens only, which are in general slightly astringent. In epilepsy they may borrow some of their virtue from the horror they excite; for the dry bone only affords them a support. It is of real utility, however, as a dyeing material.

UTERUS.—Page 691, col. 2, line 32; "*regular about the fundus.*"—M. Tenon, in the sixth volume of the Memoirs of the Institute, lately published, though read in the spring of 1800, has given some experiments on the spongy substance of the uterus, by which he means the body of the uterus from which the peritonæum only has been separated. He found that water, urine, and the spirit of sal ammoniac softened it; but that ether, alcohol, vinegar and the dulcified nitrous acid rendered it more solid in the same order: ether had the least effect. The softening substances increased its weight, bulk, and length; and urine enlarged and lengthened it more than pure water: but its principal effect was greater on the membranous part at the neck, than on the denser portion of the fundus; and the effect of all these fluids was more conspicuous on the uterus of a woman newly delivered than on one at a distance from the period of parturition. Vinegar seemed not only a powerful astringent, but it increased the elasticity of the uterus: the aqua ammoniæ not only softened it, but gave it the colour and semitransparence of horn. It was whitened in water, but remained opaque in all the other experiments. The uterus is more susceptible of contraction by vinegar, than its envelope, the peritonæum. We have thought it necessary to notice these experiments; but the phenomena seem to have been greatly influenced by preconceived ideas; and the first consequence drawn, that milk thrown by metastasis on the uterus in the puerperal state, by its acidity gives tone to that organ, will be sufficient to show the futility of the author's object and his experiments.

The last memoir in the volume just referred to, by the same author, is entitled "Remarks on the Membranous Covering which the Peritonæum furnishes to the Uterus." Many authors, he observes, have supposed that the peritonæum, in passing from the posterior and inferior surface of the bladder to the womb, rises over the whole anterior surface of the latter. Haller, however, in his last great work, the Elements of Physiology, has changed his former opinion, and contends that the peritonæum does not cover the whole anterior surface of the uterus. Later authors, he remarks, have been either doubtful or silent on the subject, and he therefore inquires how, and at what spot, the urinary bladder is applied to the matrix. In this minute and interesting piece of anatomy we must employ the author's own description.

"We must begin," he observes, "with determining where the vagina at its upper extremity is attached to the neck of the uterus. This point is different in the infant girl, the woman who has had children, and one who has just lain in. In the first, where the vagina is minutely folded, it is extended to the middle of the neck of the uterus before it is attached. At the point of union it occasions a swelling in form of the ferrule of a cane; and then the two lips of the os tineæ project considerably into this membranous glove. In the second case, the lips of the os tineæ are comparatively shorter than in the newly-born infant. Sometimes one of these, usually the posterior, is effaced, occasionally both. In these three cases the attachment of the vagina to the matrix gives a greater length to the neck on which it is fixed. It is still more extensive at the end of pregnancy, and during the first days which follow parturition.

"If, at the same time, we consider the attachment of the basis of the bladder, we shall find that the canal of the urethra, and this basis, are applied to the anterior surface of the vagina, so far as its insertion into the neck of the uterus, and that it even contracts adhesions with the neck, above the part where the vagina is attached. This last adhesion is more extensive in proportion to the prolongation of this part of the neck, and it is the substance of the bladder itself which is applied immediately to the substance of the vagina, and to that of the upper part of the collum uteri; for it is not applied to that part where the vagina is inserted.

"The peritonæum, therefore, which covers the upper part of the fundus vesicæ is prolonged on the anterior surface of the uterus, and extends only towards the bottom of its body, without any communication in front with its neck. Where it joins the uterus it adheres to it, forming a kind of transverse bridle. The anterior part of the sheath, therefore, which the uterus receives from the peritonæum, commences from this bridle. It rises over the rest of its body, and is closely joined to it by a short, dense, cellular substance, covering its basis, and reflected back on its posterior surface, covering this surface in its whole extent. The sheath, therefore, afforded by the peritonæum is sensibly longer behind than before. The two ligaments by which it is terminated on each side, and which join the sides of the rectum, are two parts constantly found. Their extent, form, and position are most properly learnt on

young subjects; for all the disposition is changed in those who have had children."

The second question examined in this paper respects the result of this connection of the urinary bladder with the upper part of the collum uteri. The first result is, that the vesica urinaria, during pregnancy, is drawn by its basis with the uterus, by the expansion of the latter from the lower to the upper region of the belly. 2. That the vesica is distended at its basis from one side to the other, at the period of parturition, in proportion to the expansion of the neck of the uterus. This explains the reason why, at the end of pregnancy, the meatus urinarius is drawn upward, and why the basis of the vesica in those women who have had children is differently shaped from the vesicæ of males, or of those women who have never been pregnant. 3. This adhesion of the vesica, also, with the matrix, suggests a caution in practising the Cæsarean operation that we do not cut the bladder. The surgeon must not, therefore, open the body of the uterus lower than six or seven millimeters above the part where the peritonæum is attached anteriorly to that viscus, even though the finger, introduced into the wound, discovers a space of considerable depth in that viscus. The same adhesion suggests a pathological observation of considerable importance in surgery. In a complete prolapsus of the uterus, where its orifice is at the lower part, the matrix is wholly covered by the vagina, which is inverted. The basis of the vesica, then, is naturally drawn with the neck of the uterus out of the body. This double descent, our author adds, he has often confirmed by dissection.

This connection is of considerable importance, in M. Tenon's opinion, as it admits of the access of the urine to soften the neck of the uterus in the last months of pregnancy. The vesica, he thinks, always admits of transudation; for, on opening the abdomen of a living dog, the smell of the urine is obvious (Memoires de la Academie, 1701); and when the vesica is distended with the uterus, he supposes that the intervals of the net work will be larger. He found also, by experiment, that the bladder of a woman who had not been pregnant for a long time, and that of another newly delivered, suffered a considerable quantity of water and urine to percolate; but we can scarcely with safety transfer the analogy from the dead to the living subject. Other membranous viscera, however, do admit of percolation; and it must be observed, that the vesica urinaria is immediately attached to the collum uteri without any intervening cellular substance. Our author, too, confines this office of an emollient to the thinner parts of the urine; for when the urine is stagnated it becomes acrid, and contributes to harden those organs to which it finds a passage. There are undoubtedly many other objections to our author's theory, which must not, at present, detain us. It is enough to have communicated his principles: the judicious inquirer will decide.

V.

VERBASCUM.—Page 714, col. 1, line 34; "*a quart must be drunk daily.*"—The flowers smell sweetly, and have a honied taste. Their texture is so tender, that if bruised, inclosed in a vessel, and exposed to a moderate heat, they melt into a brown, mucilaginous, oily fluid. They yield by distillation a water smelling like roses, on which a thick, butyraceous, oily cuticle swims, but in small quantity. The chief virtue of these flowers seems to consist in their mucilaginous nature, assisted perhaps by an anodyne quality, which has been admitted by Boerhaave, Haller, and Linnæus. The melted flowers are used as an application in gout, hæmorrhoids, tenesmus, and dysentery (Degner). Reduced to a conserve, they are recommended by Boerhaave in hæmorrhages. Others have employed them in internal ulcers and hectics; but we have not such authorities for their use in these complaints as will allow us to enlarge on them.

VERBASCUM NIGRUM, Lin. Sp. Pl. 253. Linnæus advises us to select the root from this species, though many authors take it from the former. It is employed to relieve the pain of paronychia, and the flowers are recommended in epilepsy.

VERONICA.—Page 717, col. 1, line 18; "*bitter and rough.*"—The plant is bitterish and subastringent, so as to become black with sulphat of iron: the distilled water has some, but an indistinct, odour, and the tincture has a balsamic smell. The spirituous extract is bitterer than the aqueous, and nearly of equal weight. Those who expect any virtue from the volatile parts direct it to be infused in close vessels. It has been recommended in hectics, and in catarrhal suffocations; but there is reason to apprehend that, from its astringency, it may prevent expectoration. From this power it has been supposed useful in calculus and in bloody urine. The pruritus of old persons is said to be relieved by it, and sometimes the itch.

VIOLA.—Page 726, col. 1, line 46; "*derived from the sugar.*"—On examination we find some respectable authorities for the laxative power of violets, either in the form of an expressed juice or powder. Dioscorides recommends the flowers in epilepsy (lib. iv. 122); Baglivi in convulsive and nervous disorders. The herb is used as an emollient in cataplasms, fomentations, &c.

The *seed* is diuretic, and on this quality its reputed lithontriptic power seems to depend. The *root* is said to be both emetic and laxative; but, when dried, to have either effect in an inconsiderable degree.

VIOLA TRICOLOR.—Page 726, col. 1, line 65; "*at present disused.*"—The fresh herb chewed is bitterish, with the flavour of naphtha flowers, rendering the spittle green, and leaving for a long time a sense of acrimony. When strongly bruised it has the smell of the kernels of peaches, and on agitation from the tenacity of its mucilage resembles a cataplasm. On boiling, the odour disappears. On distillation with water a small quantity of oil is found to swim on it, of a subacrid taste. The extract, by means of water, is equal to one half of the dry, and one-eighth of the recent plant. In the sixteenth and seventeenth centuries the viola tricolor was highly celebrated in cutaneous diseases and pruritus, in epilepsy and asthma; but was forgotten till Strack, in 1779, in a dissertation which obtained the prize at Leyden, again introduced it as a remedy in crusta lactea. Its use has been since extended to herpes, impetigo, itch,

&c. It has also been given, it is said with success, in gout, rheumatism, hernia humoralis, and even in epilepsy. For a tender boy, in crusta lactea, a handful of the herb was boiled in a quart of milk, and double that quantity in as much water, till half was consumed, for a lady. The taste of the decoction is rendered more palatable by fennel or coriander seeds. The simplest form is in powder with sugar.

VIRGA AUREA.—Page 726, col. 2, line 63; "*the best preparation.*"—Its chief use is in weakness of the urinary organs, calculus, and nephritic complaints. It has been recommended also in hectics, in incipient dropsies, and in hæmoptysis from an external cause.

VISCUS.—Page 728, col. 1, line 62; "*introduce it.*"—The viscum has been used in all convulsive diseases, in chorea, hysteria, spasmodic asthma, and singultus. In gout, dysentery, vertigo, and apoplexy it has been recommended, but on a very uncertain foundation.

The leaves were recommended by Hippocrates in obstructions of the spleen, and no one can accuse *him* of druidical superstition. The berries are accounted poisonous, and produce violent discharges from, with inflammation of, the bowels. Boerhaave, probably from the qualities of birdlime, styled them *incrassants.*

W.

WINTERANUS CORTEX.—Page 730, col. 2, line 9; "*proof spirit.*"—Though Dr. Morris discovered no essential oil in the distilled waters of the Winter's bark, Cartheuser, however, procured from it an oil of a very fragrant smell, of a bitter terebinthinate taste, specifically lighter than water. When this oil was suffered to remain at rest it separated into two substances: one was white, sebaceous, and heavy, falling to the bottom; the other lighter, and of a pale yellow.

Z.

ZEDOARIA.—Page 742, col. 1, line 43; "*pungent essential oil.*"—The quantity of this oil is from $\frac{1}{72}$ to $\frac{1}{112}$, which in a moderate heat is of a greenish blue colour, but, in a higher temperature, blackish. Geoffroy intimates, that this oil concretes to camphor, which Crell denies. Water, by maceration, dissolves the fragrant and bitter portions. The decoction is of a yellow brown, and yields about one-third of a disagreeably bitter and subacrid extract. Spirit is tinged by it of a reddish yellow, rendered more acrid and bitter than water, but with a less smell of camphor than the decoction. Its extract is moderately bitter and aromatic, warm and grateful. The quantity varies from an eleventh to a sixteenth part.

ZINGIBER.—Page 744, col. 1, line 25; "*nearly the whole behind.*"—A dram only of essential oil can be obtained from a pound, which retains the smell, but has not the pungency of the ginger. The watery infusion is at first acrid, and in smell resembles the root. The extract is about one-fourth, the spirituous extract one-sixteenth: each retains the taste only of the ginger.

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N. B. When an English name does not occur in this Index, it will be found in the Dictionary itself, in the alphabetical orde or a Latin word too nearly resembling it to be overlooked. The figures preceded by the letter A refer to the Appendix.

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THE END.

APPENDIX, INDEX,

AND

PLATES,

TO THE

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APPENDIX.

Map &c. of Skeleton, Front View.

Bye sc.

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FRONT VIEW OF THE SKELETON.

HEAD.

A Frontal bone.
B Parietal bone.
C Temple or temporal bone.
a Part of the sphenoidal bone.
b Mastoid process of the temporal bone.
c Zygomatic process.
d d Cheek bones.—*d c* Between these two references is seen the zygomatic suture, joining the temporal and cheek bones, by their processes of that name.
e f g h Lower jaw—(*e*) coronoid process—(*f*) condyloid process—(*h f*) ramus of the jaw—(*h g*) base of the jaw—(*g*) Symphysis of the lower jaw.
i i Upper jaw bones.—Between these, extending from the fore teeth to the entrance of the nostrils, is seen a suture called mystachial: just above this letter of reference the inferior orbitary hole may be seen.
k A portion of the coronal suture joining the frontal and parietal bones.
l A portion of the sphenoidal suture.
m The squamous suture.
n n The two nasal bones joined to each other by the anterior nasal suture.
o The left nostril, in which is seen the vomer, and a small part of the inferior turbinate, or spongy bone projecting within the edge of the upper jaw bone.
p The right nostril, with the inferior turbinate bone seen more plainly.
r r Orbitary processes of the frontal bone.
r t r v A suture passing across the upper part of the face, and sinking to the bottom of the orbits, joining the frontal bone to the bones of the face chiefly.
s Lachrymal bone, or os unguis.
u Orbitary process of the upper jaw bone.
1 1 Orbitary processes of the malar or cheek bone.
2 2 Orbitary processes of the sphenoid bone.
3 Os planum.

RIBS AND STERNUM.

1 2 3 4 5 6 7 The seven true ribs; their cartilages (*o*) are seen to join the sternum.
8 9 10 11 12 The five lower, or false ribs, whose cartilages do not join the sternum.
D E The sternum, or breast bone, articulated above to the collar bones; at its sides to the ribs; and at its lower extremity to the sword-like appendix or cartilage, F.

SPINE.

4 5 6 7 The bodies of the four lower vertebræ of the neck.
8 9 The bodies of the two first vertebræ of the back; to which the two first ribs are attached.
19 The body of the last vertebra of the back; to which the last rib is attached.
20 21 22 23 24 The bodies of the five lumbar vertebræ, being the broadest and thickest in the spine.
x x x This letter is placed on the intervertebral substance; a substance appearing to be a mixture of ligament and cartilage: it is found between the bodies of all the vertebræ; but thickest between the lumbar vertebræ.
y y Transverse processes of the vertebræ of the neck, and the first of the back.
z z Transverse processes of the lumbar vertebræ.
p p m m The sacrum—*p p* The part next the hip bone—*m m m m* Four of the bodies of the vertebræ, into which it was separated in the fœtal state: between the letters *m* is seen a line passing in the direction of the intervertebral substance, which formerly united them, but which, in the adult state, is become bone. At each extremity of these lines is seen a hole: these are the anterior sacral holes, through which large nerves pass from the cauda equina.
n The lower extremity of the coccyx.

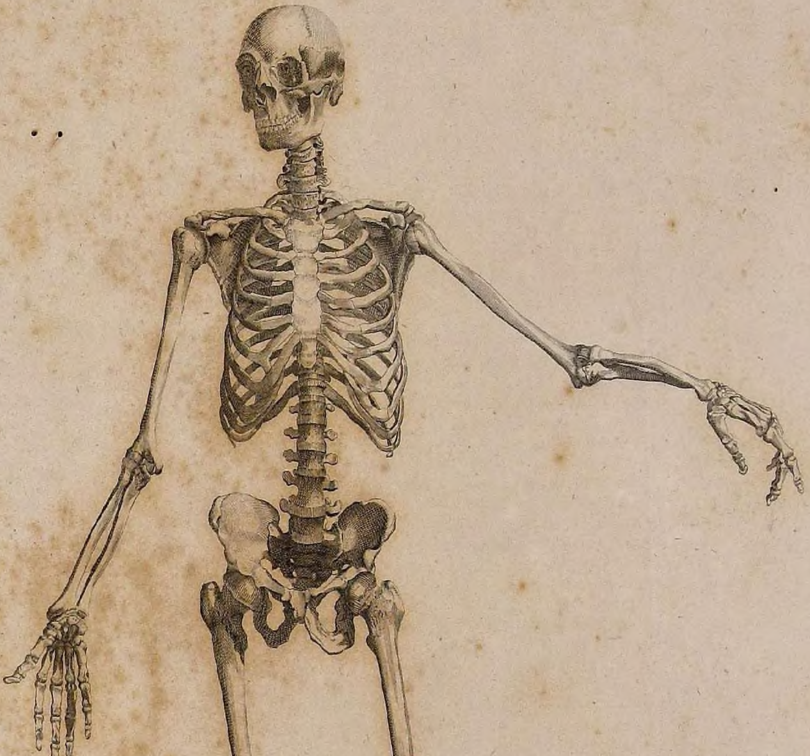
SUPERIOR EXTREMITY.

G H Clavicle, or collar bone—G Sternal extremity—H Acromial extremity.
I K L M Scapula—M Inferior costa—K Cervix—L Coracoid process—I Acromion of the scapula.
N *a b d f* The arm bone, or humerus—(*c*) The great protuberance—(*a*) The lesser protuberance; between these is a groove for lodging the tendon of the long head of the biceps muscle—(*b*) A portion of the articulating surface covered with smooth cartilage—(*f*) The internal condyle—(*d*) The external condyle—(*e e*) Articulating surfaces, forming part of the elbow joint.
g w The ulna, or greater bone of the fore arm—(*g*) The coronoid process—(*w*) The lesser extremity, with its styliform process.
h l n The radius, or lesser bone of the fore-arm—(*h*) The cartilaginous part articulated with the ulna—(*i*) The tubercle into which the tendon of the biceps muscle is inserted—(*l*) The greater extremity, sustaining the first row of carpal bones—(*n*) A projecting point of the bone, which some have called stiliform—(*k*) Grooves through which some of the extensor tendons pass.
1 2 3 4 The first row of carpal bones, or bones of the wrist—(1) The navicular bone—(2) The lunar bone—(3) The cuneiform bone—(4) The pisiform, or pea-like bone.
5 6 7 8 The second row of carpal bones—(5) The trapezial bone—(6) The trapezoid bone—(7) The great bone—(8) The unciform bone—(9) The nail-like process of the unciform bone.
10 Metacarpal, or first bone of the thumb.
11 Second bone of the thumb.
12 Third bone of the thumb.
17 Sesamoid bones of the thumb.
13 13 13 13 Metacarpal bones of the fingers.
14 14 14 14 First phalanx, or row of finger bones.
15 15 15 15 Second phalanx of finger bones.
16 16 16 16 Third phalanx of finger bones.

PELVIS AND LOWER EXTREMITY.

1 2 3 4 5 Ilium, or hip bone—(1) Spine of the ilium; at this end of the spine is a projecting point called superior anterior spinous process—(5) Inferior anterior spinous process—(2 3) Line of union with sacrum: under 3 is seen the opening of the sacro ischiatic notch.
4 6 7 Pubis or share bone—(6 4) Ascending ramus—(6 7) Descending ramus—(6 6) Bodies of the pubes—(11) Symphysis, or junction of the pubes.
7 8 9 Ischium, or hitch bone—(8) Tuberosity of the ischium—(7) Union of the ascending branch of the ischium with the descending branch of the pubis.
10 Thyroid hole; through this hole, formed by the ilium, ischium, and pubis, is seen projecting the point of the spinous process of the ischium.
12 14 15 16 17 Thigh bone, or femur—(12) Head of the bone covered with cartilage, for articulation at the hip joint—(13) Cervix, or neck of the bone—(14) Great trochanter—(15) Lesser trochanter—(16) Internal condyle—(17) External condyle—(18) Patella, or knee-pan: under the patella is seen part of the bone, covered with cartilage, entering into the knee joint.
19 Interarticular cartilages.
20 22 Tibia, or great bone of the leg—(20) Head of the bone—(22) Lower extremity of the bone, forming the inner ancle.
21 23 Fibula, or small bone of the leg—(21) Upper extremity articulated with the tibia—(22) Lower extremity forming the outer ancle.
24 Astragalus; the bone by which the foot is articulated with the leg.
25 The calcaneum, or heel-bone.
26 The navicular bone.
27 The great cuneiform bone.
35 The lesser and middle cuneiform bones.
28 The metatarsal, or first bone of the great toe.
29 The second bone of the great toe.
30 The third bone of the great toe.
34 Metatarsal bones of the other four toes.
31 Bones of the first phalanx, or row of the four lesser toes.
32 Second row of bones of the toes.
33 Third row of bones of the toes.
36 Sesamoid bones of the great toe.

Front View.



J. Bye sculp.

London Published by J. Johnson St. Pauls Church Yard Feb. 1. 1806.

Map &c, of Skeleton, Back View.

London. Published by J. Johnson S.t Paul's Church Yard Feb. 1. 1806.

Pye sc.

BACK VIEW OF THE SKELETON.

HEAD.

A A Parietal bones.

B Occipital bone.

C Temporal bone—The lowest dotted line points to the mastoid process; the middle one to the zygomatic process, going forward to meet a corresponding process from the cheek bone; and the upper line points out the flat or squamose portion of the bone.

D Cheek bone, with its zygomatic process joined to a process from the temporal bone of the same name, by the zygomatic suture.

a Two holes in the parietal bones, through which veins enter to the longitudinal sinus.

b The sagittal suture.

c The squamous suture.

d Appendage to the lambdoid suture.

e e e e The lower jaw—the two upper *e e* mark the condyloid processes, or the points of articulation, with the temporal bone.

f That part of the upper jaw, called the alveolar process, which assists in forming the sockets for the teeth, and constitutes the lower fore part of the roof of the mouth: at the end of this dotted line, the point of the styliform process of the temporal bone is seen.

g The inside of the lower jaw, with the alveolar process and its teeth, opposed to the teeth of the upper jaw.

SPINE AND RIBS.

2 1 3 1 2 The twenty-four true vertebræ forming the greater part of the spine, and divided into vertebræ of the neck, vertebræ of the back, and vertebræ of the loins.

1 1 Are placed between the oblique processes of the vertebræ, of which there are two on each side, one above the figure of reference, the other below it; they are covered on one surface by a smooth cartilage, which serves the purpose of articulation with the corresponding oblique processes of the vertebræ above and below, except the first and last vertebra; of these, one is articulated with the condyles of the occipital bone, the other with the oblique processes of the sacrum.

2 The transverse processes standing out laterally; those in the vertebræ of the neck generally project less than the others, are bifurcated, and have each a foramen for the passage of the vertebral artery; the first and second have not, in general, this bifurcation; the transverse processes of the vertebræ of the back are more distinct, and project obliquely backwards; in the loins they are stronger and more directly transverse.

3 The spinous processes of the vertebræ in the neck; except the first, they are in general bifurcated. In the back they are turned more obliquely downwards; but as they approach the loins they become more horizontal and are stronger; in the loins they are larger and nearly horizontal.

E The lowest or seventh vertebra of the neck.

F The lowest or twelfth vertebra of the back—The five vertebræ below this are those of the loins.

i n i } *i h i* } The sacrum or first set of false vertebræ; *i i i i* the posterior holes of the sacrum; *n n n n* spinous processes of the sacrum; near *i i i* are the remains of the transverse processes; *h* a deficiency of bone at the lower extremity of the sacrum, supplied, during life, by ligament; part of the bodies of the fourth and fifth vertebræ are seen through this deficiency.

m o Coccyx, tail bone, or second set of false vertebræ—(*m*) the first bone of the coccyx articulated with the lower extremity of the sacrum; (*o*) the lower extremity of the coccyx and termination of the spine.

α β γ δ ε ζ η θ ι κ λ μ The twelve ribs—The first seven are called true ribs, from having their cartilages articulated with the sternum; the other five, false ribs, from not having their cartilages so affixed; the posterior extremities are articulated to the bodies of the vertebræ, mostly at the junction of two; at the part where the rib is hid by the end of the transverse process; (2) is a small smooth cartilage, which is articulated with a similar one on the anterior surface of the process.

SUPERIOR EXTREMITY, OR ARM.

G Clavicle or collar-bone.

H *k l m n o* Scapula or shoulder bone—*o* superior angle; *l* inferior angle; *k* cervix or neck; on this neck is borne a broad superficial cavity, facing outwardly, and covered with a smooth cartilage for receiving the round head of the arm bone; *m n* the spine of the scapula; *n* that part of the spine called acromion; the superior edge *o k* is called the superior costa; *k l* the inferior costa; and *o l* the base: the whole triangular surface *o k l* is sometimes called dorsum.

I *p q r s t* The arm bone or humerus—*p* the posterior great tubercle; *r* a part of the round articulating head covered with cartilage; *q* the external condyle; *s* the internal condyle; *t* a cavity situated between the condyles behind for receiving a portion of the olecranon in extension of the fore arm.

K *v u x* The ulna or larger bone of the fore arm—*u* the olecranon or great protuberance, covered on the fore part with cartilage, and principally concerned in the formation of the elbow joint; *v* the lower or lesser end of the ulna, on which the radius plays; *x* a projecting process called stiliform.

L *r w* The radius or lesser bone of the fore arm—*r* the upper extremity of the bone, furnished with a superficial socket, and covered with cartilage for articulation, with the round head at the external condyle of the humerus; (*y*) a smooth cartilage at the inner side of the head, by which it is articulated with, and rolls in a corresponding hollow of the ulna; (*w*) the lower or greater extremity by which it is articulated with, and rolls on the lower extremity of the ulna, and affords articulation to the first row of carpal or wrist bones.

1 2 3 4 The first row of carpal or wrist bones—1 The navicular bone; 2 the lunar bone; 3 the cuneiform bone; 4 the pisiform or pea-like bone: these constitute the first row of carpal bones: the three former are articulated at one extremity with the radius, and roll with it on the ulna; at the other extremity they are articulated with the second row, and laterally with each other.

5 6 7 8 The second row of carpal bones—5 the trapezial bone; 6 the trapezoid bone; 7 the os magnum or great bone; 8 the unciform bone; these are articulated at the extremity next the arm with the first row of carpal bones, laterally with each other, and at the extremity next the hand, with the metacarpal bones of the hand.

9 10 11 12 The four metacarpal bones of the fingers—9 of the little finger; 10 of the third or ring finger; 11 of the middle finger; 12 of the first finger.

14 15 16 17 The first row or phalanx of finger bones.

18 19 20 21 The second row of finger bones, or second phalanx.

22 23 24 25 The third order of finger bones, or third phalanx.

13 The metacarpal bone or first phalanx of the thumb.

26 The second phalanx of the thumb.

27 The third phalanx of the thumb.

The bones of these phalanges, except the last, are furnished with an articulating cartilage at each extremity.

28 Two sesamoid bones of the thumb.

OSSA INNOMINATA AND LOWER EXTREMITIES.

A *a* B C Os ilium or hip bone.

A *h* B Spine of the ilium.

a C *b* The great or sacro ischiatic notch; *b c e* ischium or hitch bone; *b* spinous process; *c* tuberosity of the ischium; *c e* ascending ramus of the ischium; *e g f* the pubis or share bone.

o l s t The femur or thigh bone; *k* the head of the bone, shewing some of the articulating portion; *l* the cervix or neck of the bone; *o* the great trochanter; *p* the lesser trochanter; *q r* a rough ridge in the posterior part of the bone; *s* the internal condyle; *t* the external condyle; *u v* portions of the bone covered with cartilage for articulation with the tibia.

x w Interarticular cartilage.

D G Tibia or greater bone of the leg, articulated to the thigh bone, to form the knee joint; G the inner ancle.

E F The fibula or lesser bone of the leg; F the outer ancle.

1 The astragalus.

2 Calcaneum or heel bone.

3 Lesser cuneiform bone.

4 8 Middle cuneiform bone.

5 Cubicular bone.

6 Navicular bone.

7 Metatarsal bone of the great toe.

9 Metatarsal bones of the other toes.

01 Phalanges of the toes.

Back View.

London, Published by J. Johnson St. Paul's Church Yard Feb. 1. 1806

J. Rye sculp

Map &c. of Skeleton, Side View

London, Published by J. Johnson, St. Paul's Church Yard Feb. 1. 1806.

SIDE VIEW OF THE SKELETON.

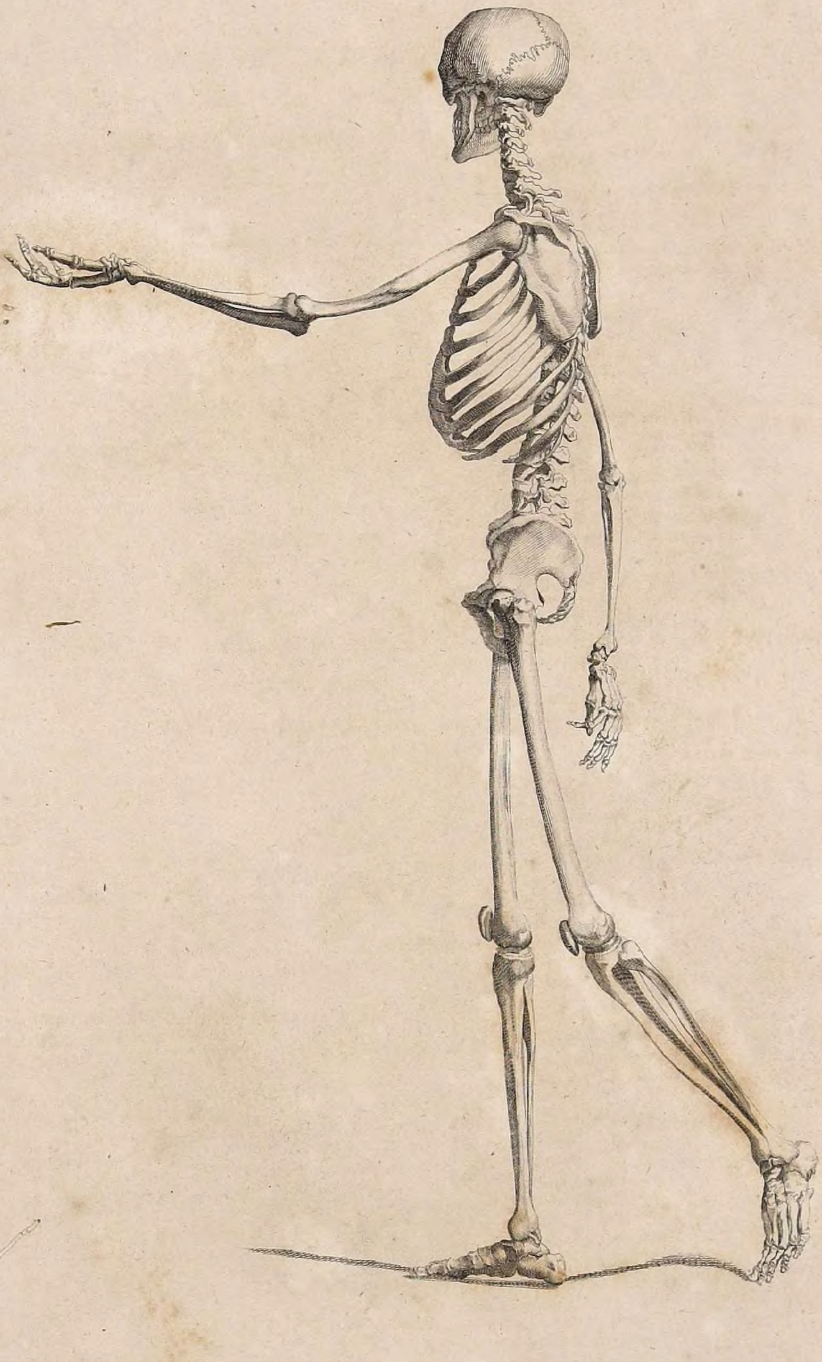
HEAD, TRUNK AND UPPER EXTREMITY.

1 Frontal bone.
2 Squamose part of the temporal bone.
3 Part of the sphenoid bone.
4 Part of the cheek bone, forming part of the sinuosity for the passage of the temporal muscle to the coronoid process of the lower jaw—(22) external part of the cheek bone, forming part of the face.
5 Mastoid process of the temporal bone.
6 Zygomatic process of the temporal bone.
7 8 Coronal suture.
7 9 Squamose suture.
9 10 Appendage to the squamose suture.
10 11 12 Lambdoidal suture.
10 5 Appendage to the lambdoidal suture.
11 13 Part of the sagittal suture.
14 Parietal bone on the left side.
15 Parietal bone on the right side.
16 Occipital bone.
17 18 20 Lower jaw—(17) coronoid process of the lower jaw—(18) condyloid, or articulating process of the lower jaw—(20) angles of the lower jaw.
21 Upper jaw.
22 Cheek bone.
23 24 25 26 27 28 29 Spinose processes of the seven vertebræ of the neck.
30 31 Spinous process of the first and second vertebræ of the back.
32 Transverse processes of the vertebræ of the neck.
33 First true rib.
34 Second true rib.
35 Part of the clavicle, or collar bone.
36 Acromion of the scapula.
37 Spine of the scapula.
38 Dorsum of the scapula.
39 Cervix of the scapula.
40 Inferior angle of the scapula.
41 Superior angle of the scapula.
33 34 42 43 44 45 46 The seven true ribs—(54) the cartilages of the six lower true ribs.
47 48 49 50 51 The five false ribs—(52) their cartilages.
53 53 Portions of the sternum.
55 Vertebræ of the back.
56 Vertebræ of the loins.
57 57 Bodies of the third and fourth vertebræ of the loins.
58 58 Transverse processes of those vertebræ.
59 60 61 62 The arm bone—(59) the head of the bone articulated with the scapula; the dotted lines showing a portion of the articulating surface—(60) a superficial spiral channel passing from behind forwards, in which the muscular nerve passes—(62) a ridge above the external condyle—(61) the external condyle.
63 64 65 The radius, or lesser bone of the fore arm—(63) head of the radius.—(64) tubercle of the radius—(65) greater or lower end of the radius, with a pointed termination on the outer side, called by some stiliform process.
66 Olecranon, or great end of the ulna—(67) lower or lesser end of the ulna.
68 69 70 Three bones of the first carpal row—(68) navicular bone—(69) pisiform bone—(70) lunar bone.
71 72 73 74 Second row of carpal bones—(71) trapezial bone—(72) trapezoid bone—(73) great bone—(74) unciform bone.
75 76 77 Thumb—(75) metacarpal, or first bone of the thumb—(76) second bone of the thumb—(77) third bone of the thumb.
81 Metacarpal bones of the fingers.
78 First row, or phalanx of finger bones.
79 Second phalanx of finger bones.
80 Third phalanx of finger bones.
82 Cuneiform bone of the wrist.
83 Sesamoid bones of the thumb.

PELVIS AND LOWER EXTREMITY.

1 2 3 4 7 6 The hip bone, or os ilium—(1 2 3) the spine of the ilium—(1) superior anterior spinous process—(6) inferior anterior spinous process—(3) posterior superior spinous process—(4) posterior inferior spinous process—(4 5) sacro ischiatic notch.
7 5 10 9 Os ischium—(5) spinous process of the ischium—(10) tuberosity of the ischium—(9) junction of the ischium and pubis.
9 8 6 Os pubis, or share bone—(8) Symphysis, or junction of the two pubes.
11 The sacrum.
12 The first bone of the coccyx.
13 The second and third bones of the coccyx.
14 Thyroid hole.
15 16 18 19 Thigh bone, or femur—(16) great head of articulation, with the pelvis—(15) great trochanter—(17) cervix, or neck of the bone—(18) the external condyle of the left thigh; the internal condyle of the right thigh.
19 19 Portion of the bone covered with cartilage for articulation.
20 Patella, or knee-pan.
21 21 Interarticular cartilages.
22 23 24 25 Tibia, or great bone of the leg—(22) head of the tibia—(23) tuberosity for the insertion of the strong ligament of the patella—(24) part of the bone called the shin—(25) lower extremity of the bone articulated with the foot—(26) the inner ancle.
27 28 The fibula, or lesser bone of the leg—(27) head of the bone—(28) outer ancle.
29 Astragalus, the bone by which the foot is articulated with the leg.
30 The os calcis, or heel bone.
31 Cubical bones of the foot.
32 Navicular bones.
33 Middle cuneiform bones.
34 Lesser cuneiform bones.
35 Greater cuneiform bone.
36 Metatarsal bones of the toes.
37 First phalanx, or row of toe bones.
38 Second phalanx, or row of toe bones.
39 Third phalanx, consisting of four bones only; the great toe having no third bone.
40 Sesamoid bones of the great toe.

Side View



J. Rye sculp.t

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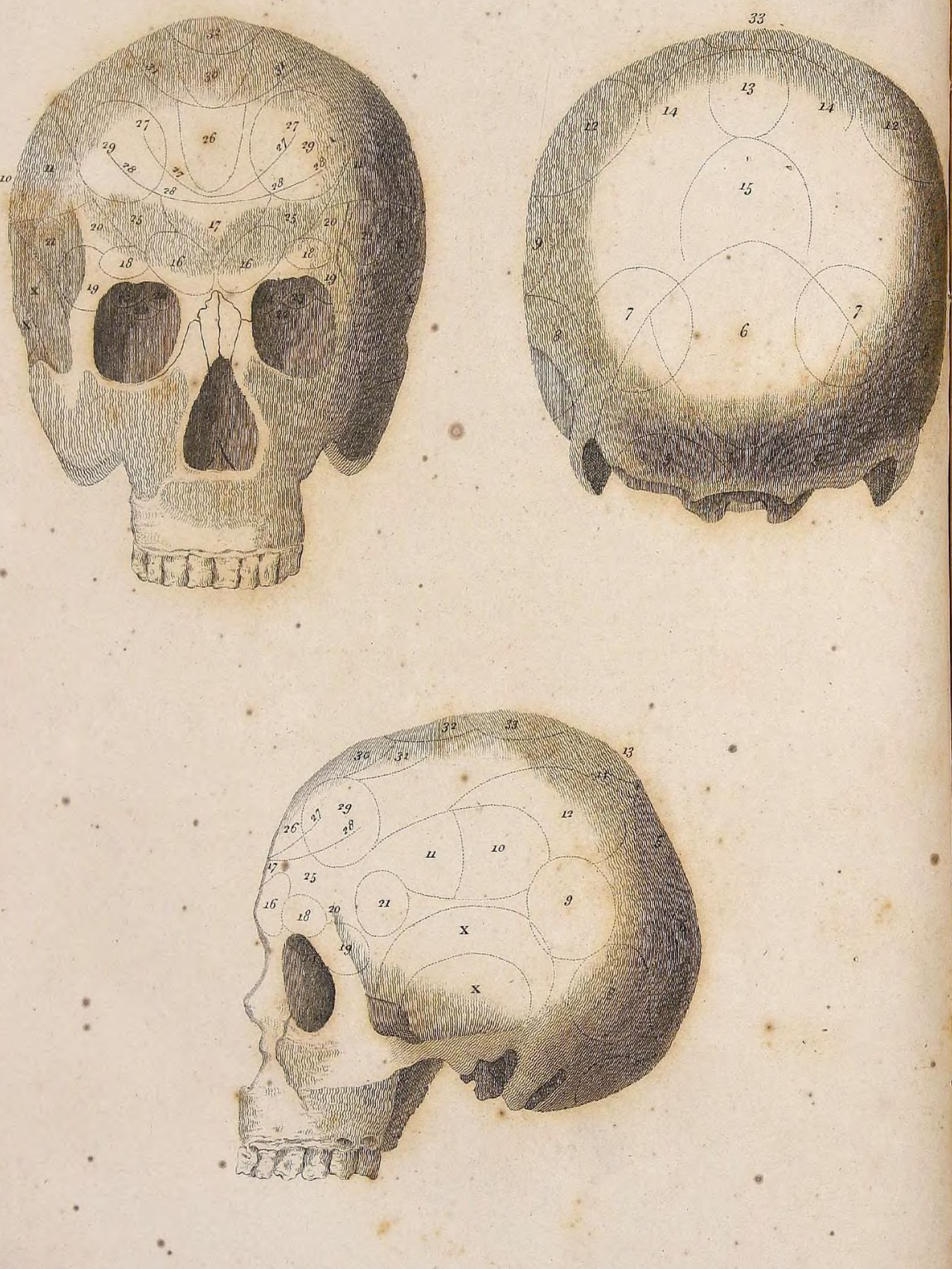
Gall's Craniology.



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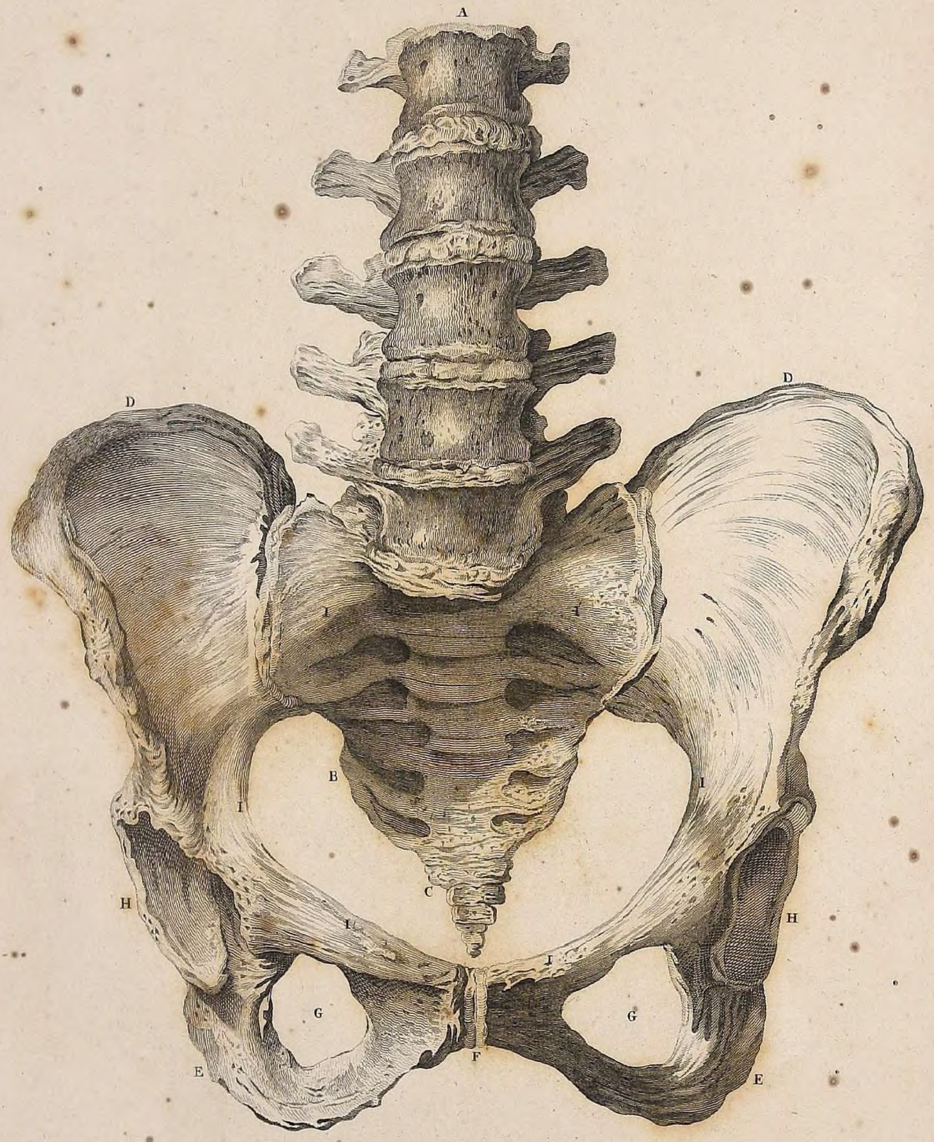
EXPLANATION OF THE PLATE OF GALL'S CRANIOLOGY.

1. Organ of the tenacity of life.
2. Organ of the instinct of self preservation.
3. Organ of the choice of nourishment.
4. Cerebral organs of the external senses.
5. Organ of sexual gratification.
6. Organ of the reciprocal love of parents and children.
7. Organ of attachment and friendship.
8. Organ of courage.
9. Organ of the instinct to assassination.
10. Unknown organs.
11. Organ of cunning.
12. Organ of circumspection.
13. Organ of the instinct of rising in rank or estimation.
14. Organ of the love of glory.
15. Organ of the love of truth.
16. Organ of the sense of locality.
17. Organ of the sense for collecting and retaining facts.
18. Organ of painting and the perception of colours.
19. Organ of the arithmetical sense.
20. Organ of the musical sense.
21. Organ of the mechanical sense.
22. Organ of verbal memory.
23. Organ of the disposition for learning languages.
24. Organ of the memory for distinguishing and recollecting persons.
25. Organ of liberality.
26. Organ of the genius for comparison.
27. Organ of the metaphysical genius.
28. Organ of the spirit of observation.
29. Organ of wit.
30. Organ of goodness.
31. Organ of music or theatrical talents.
32. Organ of holiness.
33. Organ of perseverance.

Front View of the Bones of a well formed Pelvis.



J. Bye sculp[t]

London Published by J. Johnson, St Paul's Church Yard Nov. 1. 1806.

FRONT VIEW, THE BONES OF A WELL-FORMED PELVIS.

A The five vertebræ of the loins.
B The os sacrum.
C The os coccygis.
D D The ossa ilia.
E E The ossa ischia.
F The ossa pubis.
G The foramina magna.
H H The acetabula.
I I I I I I The brim of the pelvis, or that circumference of its cavity, which is described at the sides by the inferior part of the ossa ilia, and at the back and fore parts by the superior parts of the ossa pubis and the os sacrum.

In this Table, besides the general structure and figure of the several bones, the dimensions of the brim of the pelvis, and the distance between the under part of the ossa ischia, are particularly to be attended to; from which it will appear that the cavity of the brim is commonly wider from side to side than from the back to the fore-part, but that the sides below are in the contrary proportion. The reader, however, ought not from this to conclude, that every pelvis is similar in figure and dimensions, since even well-formed ones differ in some degree from each other. In general, the brim of the pelvis measures about five inches and a quarter from side to side, and four inches and a quarter from the back to the fore-part; there being likewise the same distance between the inferior parts of the ossa ischia. All these measures, however, must be understood as taken from the skeleton; for, in the subject, the cavity of the pelvis is considerably diminished by soft parts. Corresponding also to this diminution, the usual dimensions of the head of the full-grown fœtus are but three inches and a half from ear to ear, and four inches and a quarter from the fore to the hind head.

Fig. I.

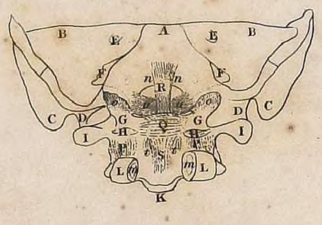


Fig. II.

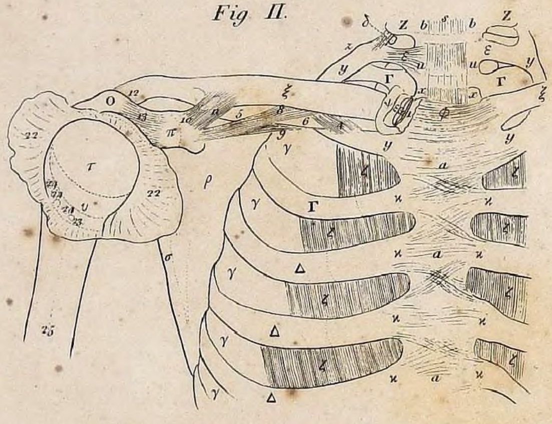


Fig. III.

LIGAMENTS OF THE NECK AND THE UPPER EXTREMITY.

FIG. 1.

The basis of the posterior part of the skull, with the atlas and epistrophæum, seen from behind.

A The basilar part of the occipital bone.
B B The apophyses petrosæ of the temporal bones.
C C and D D The mastoid and styloid processes, seen from behind.
E E The holes, through which the facial and acoustic nerves pass.
F F The fissure for the passage of the jugular vein and par vagum.
G G The sides of the first vertebra.
H H The part, from whence the posterior arch of the first vertebra has been cut.
I I The transverse processes of the vertebra.
K The inferior and posterior surface of the second vertebra.
L A portion of the posterior arches of the vertebra, which meet in the spinous process.
m m Where the arches themselves are cut off, together with the spinous process.
n n The anterior margin of the foramen occipitale.
o o The articular ligaments, which surround the articulation of the condyles of the occiput, with the surperior sinus, both on the right and left of the atlas.
P P Ligaments between the oblique or articular processes of the vertebræ.
Q The transverse ligament of the atlas, rising on the right side from a small tubercle of the atlas, itself (which lies under and within the articular sinus of the same side), then running across, behind the tooth of the second vertebra, surrounds its neck, and passes to a similar tubercle on the left side, where it is strongly inserted.
R The superior appendix of the transverse ligament, which arising from the superior margin of that ligament, passes over the tooth, and is firmly fixed to the anterior and internal edge of the occipital foramen.
S Its inferior appendix, which descends from the inferior margin of the transverse ligament, and is fixed to the posterior superficies of the body of the epistrophæum, in which it terminates by slightly converging fibres. Mauchart calls the whole transverse ligament, with its appendices, the cruciform ligament.
t t The bands which pass from the posterior and superior margin of the body of the epistrophæum to the inferior and posterior margin of the anterior arch of the atlas.

FIG. 2.

Z The transverse process of the seventh vertebra.
ʒ The ligament, which descending from the transverse process of the seventh vertebra of the neck, a little outward, is inserted into the neck of the first rib.
ι The ligament of the little head of the first rib, by which the rib itself is connected to the first vertebra adjacent.
u The first vertebra of the back covered with the anterior longitudinal fascia of the vertebræ.
y The first rib.
z The tubercle of the rib.
Γ The second rib.
Δ Δ &c. The other ribs in their order.
κ The ligaments of the cartilages of the ribs, which not only connect the cartilages of the superior ribs with the sternum, but are dispersed in radii over the sternum itself.
χ The second vertebra of the back.
ψ ω 1 2 3 The interior capsular membrane of the articulation of the sternum and clavicle dissected and separated to show ψ the ligament arising from the extremity of the clavicle ω. 1 A portion of the ligament inserted in the sternum.—2 The margin of the glenoid cavity of the joint hollowed from the sternum where it receives the clavicle.—3 The border of the interarticular cartilage.
ξ The clavicle.
4 The rhomboid ligament, which extends at no great distance from the neck of the clavicle, and, proceeding obliquely from above and behind to the lower and anterior parts, adheres to the cartilage of the first rib. The fibres which run from the cartilage and sternum are united with the ligaments which proceed from the little head of the clavicle.
5 and 6 The subclavian muscle and its tendon.
7 8 9 The ligamentum bicorne, which, arising within from the coracoid process of the scapula, is obliquely unfolded from the external and inferior parts to the superior, and divided into two bands. The superior cornu is inserted into the lower surface of the clavicle, near the rhomboid ligament. The inferior cornu passes to the rib, immediately below, under the tendon of the subclavian muscle, which is confined and strengthened by these bands. Some fibres from the superior cornu mix with the rhomboid ligament.
10 11 Two ligaments fixed on the tuber of the coracoid process of the scapula, between which is a bursa mucosa. They pass obliquely to the superior parts, and are inserted into the external surface of the clavicle.
12 Very strong tendinous fibres which surround the union of the acromion with the end of the clavicle, and are fixed from this process into the clavicle.
13 The proper anterior scapular ligament, which arises from the external margin of the coracoid process, and terminates in the anterior face of the acromion. This strong ligament covers the two processes like a bridge. At the acromion it is narrow, but gradually dilates.
ω The acromion of the scapula.
π Its coracoid process.
7 The head of the right humerus.
υ Its neck.
22 The capsular ligament dissected, to show the head of the humerus covered with its cartilage.
23 The termination of the ligament on the neck of the humerus.
24 Mucous glands.
25 The os humeri.
γ The external intercostals.
ζ A thin but strong ligamentous membrane passing between the cartilages of the rib and covering the intercostal muscles.
χ External ligamentous bands, which cover and strengthen the union of the clavicle with the sternum.
φ The interclavicular ligament, which runs between the clavicles on the sternum.

FIG. 3.

A A back view of the scapula.
B Its external margin.
C Its base.
D Its superior margin or costa.
E The division in this margin hollowed out for the reception of the vessels and nerves.
F The inferior angle of the scapula.
G Its superior and internal angle.
H The beginning of the spine.
K The spine cut off.
m The root of the coracoid process.
N The clavicle.
O Its extremity.
P Q R The os humeri, its head and neck.
s The posterior proper ligament of the scapula, running from the acute and internal angle of the division E obliquely, and externally to the superior parts, is fixed to the external angle of the same division, or to the posterior protuberances of the root of the coracoid process. It is sometimes double, subtending and inclosing the division.
t t t The common conoid ligament of the scapular, partly from the back of the proper ligament *s*, partly from the root of the coracoid process *m*: near the divison it is united by thick strong fibres to the posterior end of the clavicle.
X Y The capsular ligament connected with the shoulder, separated to show the head of the bone and cavity of the joint. It proceeds from the neck of the scapula and covers the whole joint.

FIG 4.

1—8 Vertebræ.
ε The superior margin of the posterior arch in each vertebra.
ζ The inferior margin of the same arch.
η The little head of the transverse process of each vertebra.
θ The ribs.
κ κ κ The yellowish ligaments, which from the upper margin of the lower vertebra pass to the lower margin of the upper.
λ λ λ The ligamentous cord which connects the spinous processes of the vertebra.
μ μ μ The ligaments of the transverse processes.
25 The external intercostal muscles.
σ Fragments of the tendons of the longissimus dorsi.
26 The transversal external ligaments of the ribs. A singular short ligament arises from the posterior and external margin of the transverse process of each vertebra, terminated in the rough tubercle of the adjoining rib.
τ The ligaments between the neck of the ribs and the transverse processes of the vertebræ. Weitbrecht calls these ligaments transversaria interna. From the neck of the third left rib, the fifth, sixth, seventh, and ninth rib on the right side, a ligament ascends outwardly, terminating in the inferior and extreme surface of the transverse process of the vertebra above.
φ The external ligaments of the neck of the ribs. Each of them rising from the superior margin of the neck of the rib, ascends obliquely to the internal parts behind the internal transverse ligament, and is fixed to the inferior edge of the oblique process of the vertebra immediately above. Its figure is often triangular.

Ligaments of the Neck, the Trunk, & the upper Extremity.

Fig. I.

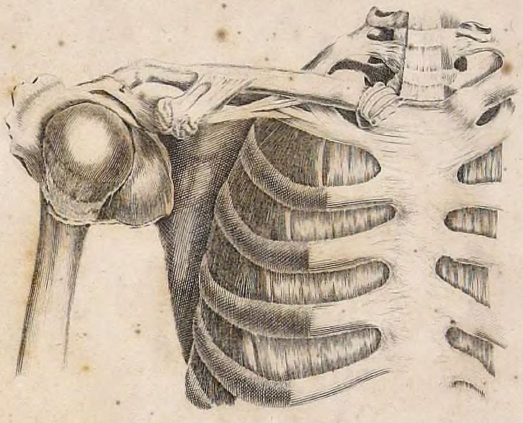


Fig. II.

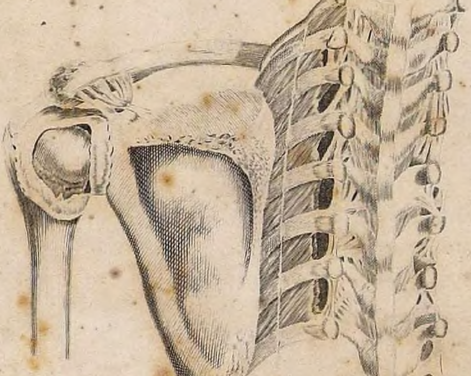


Fig. III.

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Fig I.

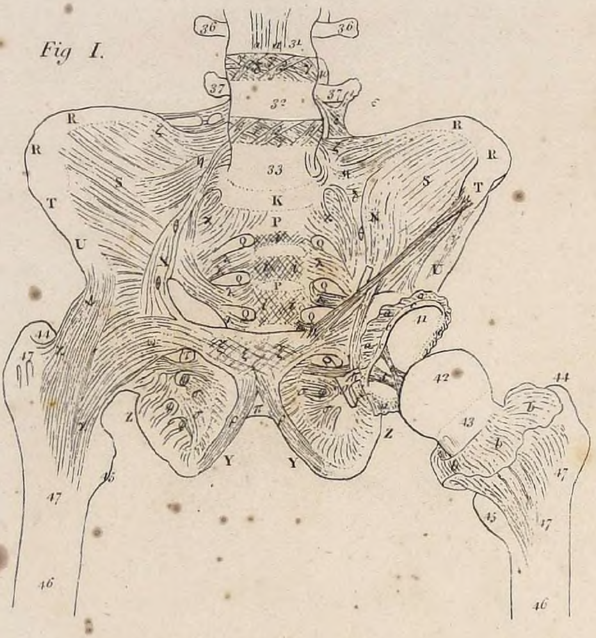
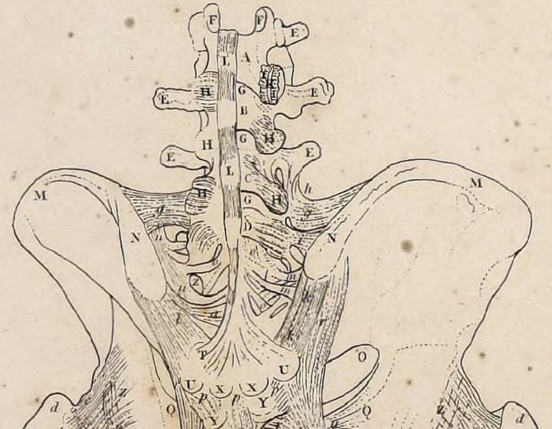


Fig. II.



LIGAMENTS OF THE PELVIS.

FIG. 1.

A front view.

P P The os sacrum on its fore part.
Q Q The anterior foramina of the os sacrum.
R R The crests of the ilia.
S S The superior surfaces of the ilia.
T T The anterior and inferior apophyses of the ilia.
U U The anterior and inferior apophyses.
X X The brims of the pelvis.
Y Y The inferior crus of each pubes.
Z Z The descending leg, or the tubercles of each ischium.
41 The acetabulum, or the ischiadic cavity.
42 The head of the left thigh bone covered with its cartilage.
43 The neck.
44 44 The great trochanter.
45 45 The less trochanter.
46 The body of the bone.
47 The line of insertion of the ligament containing the joint.
α α Where the anterior longitudinal fascia of the vertebræ is dissected off.
β γ δ The cartilaginous intervertebral ligaments.
β β The external fascicula of the intervertebral ligaments, which pass obliquely from the right to the left, and proceed from the inferior margin of the lower vertebra to be inserted into the lower edge of the superincumbent vertebra.
γ γ The interior fibres, which lie under the exterior, and run in an opposite direction.
δ δ The minute fasciculi of the whole which are disposed nearly transversely.
ε ε The tendinous bands between the transverse processes of the fourth vertebra of the loins, and the crest of each os ilium.
ζ ζ Very strong ligaments by which the ossa inominata are connected to the transverse processes of the fifth vertebra of the loins. A ligament of this kind proceeds from the crest of the ilium on each side, and surrounds the before-mentioned process. Weitbrecht promised to describe these ligamentous bands, but has unaccountably omitted them.
η η η Ligamentous bands, proceeding from the same process, and expanded over the os ilium, leaving in their interstices a passage for the lumbar nerves.
θ θ A ligamentous membrane covering the interior edge of the pelvis.
ι ι ι A ligamentous membrane, formed of fibres, crossing each other, occupying that part of the sacrum which in the fœtus was filled by the cartilaginous ligaments β γ δ.
κ κ The ligaments which connect the sacrum with the ilia.
λ λ Those which surround the anterior foramina of the sacrum.
μ μ μ The ligament of Vesalius, Fallopius, or Poupart, which, from the anterior and superior apophysis, in which the anterior crest of the os ilium is terminated, passes to the synchondrosis of the pubis.
ν Some ligamentous fibres which fill the space between the superior and inferior apophysis of the os ilium in front.
ξ ξ The ligaments by which the synchondrosis of the pubis is confined and strengthened.
π The lower ligament of the pubes.
ρ ρ Two strong round ligaments which rise from the internal margin of the inferior leg of the os pubis to the synchondrosis.
σ σ σ The membrane which closes the foramen ovale, sometimes called obturatorium.
τ A hole for the passage of the arteria obturatoria and its accompanying nerve.
φ φ φ Lesser holes for the smaller branches of this artery and nerve to pass, from within, outwardly.
χ The capsular ligament, containing the joint of the right thigh bone, with the sciatic cavity.
ψ Branches which pass from under the anterior and inferior apophysis of the os ilium to the ligament χ.
ω Other branches from the os pubis.
a b The left capsular ligament dissected. *a* The portion which arises from the edge of the acetabulum. *b* The inferior portion obliterated under the neck of the thigh bone.
c The cartilaginous cilium of the cavity, which enlarges the acetabulum. The margin is styled its lip, or mouth.
d The ligamentum teres, which arises from the sinus at the bottom of the cotyloid cavity, and descends to the head of the thigh bone.
e Its thinner and membranous portion.
f A portion of the ligament which arises internally on the outside of the sciatic cavity, and surrounds the neck of the cavity, so far as where its bony cilium is interrupted. At that place under the lip, or under the cartilaginous ligament, it passes to the acetabulum.
g h The arteries. *g* A branch of the obturatoria. *h* Two little arteries, which, with the ligament *f*, penetrate the styloid cavity, to mix with the round ligament.
i The retinacula of the capsular ligament.

FIG. 2.

A back view of the ligaments of the pelvis.

A B C D The posterior arch of the lumbar vertebræ, viz. 2d, 3d, 4th, and 5th.
E E E The transverse processes of the same vertebræ in the same order.
F F The superior oblique processes of the second vertebra.
G G G The yellowish ligaments. See Fig. 3, Pl. 1.
H H The ligaments which surround the articulation of the oblique processes.
I K A ligament which strengthens the articulation of the oblique processes of the vertebræ separated, that the oblique apophysis of the vertebra may be seen.
L L See λλ, Fig. 3, Pl. 1.
M M The crest of the ilium.
N N Its posterior tuber.
O The sciatic division.
P P Q Q R R The descending leg, spine, and tuber of the ischium.
S S A back view of the ossa pubes.
T The left transverse process of the third vertebra of the sacrum.
U Transverse processes of the fourth vertebra.
X X Tubercles of the same vertebra, with which the cornua of the first bones of the coccyx are articulated.
Y Y The tubercles of the fifth vertebra of the sacrum.
Z The superior and posterior foramina of the same bone.
a a The second pair of foramina.
b The second vertebra of the coccyx.
c c The neck of the thigh bone.
d d e e The greater and less trochanters.
f f The body of each thigh bone.

Ligaments of the Pelvis.

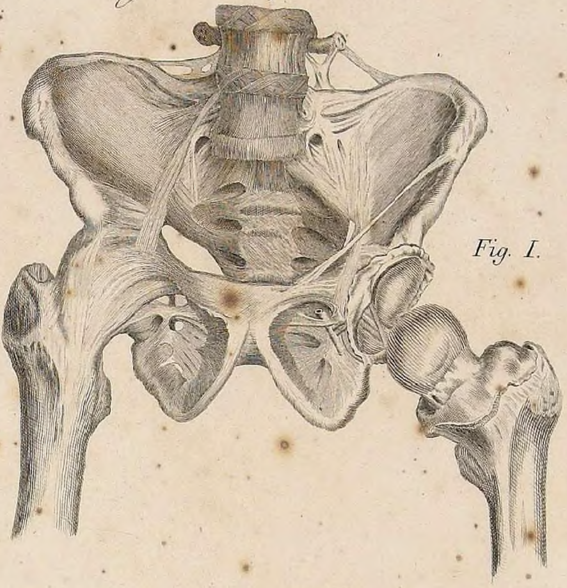


Fig. I.

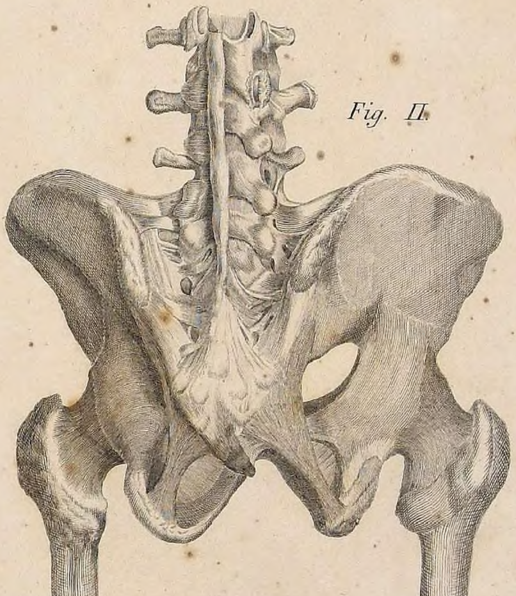


Fig. II.

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Joseph Skelton sculpt.

Fig. I.

Fig. II.

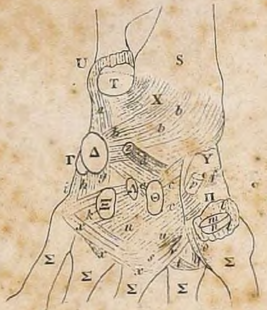


Fig. V

Fig III

Fig. IV

LIGAMENTS OF THE WRIST AND ELBOW.

Fig. 1.

Superficial anterior ligaments of the right hand.

N O The inferior extremities of the ulna and radius.
P Q The greater multangular and triangular bones.
R The processus unciformis of the os hamatum.
S The pisiform bone.
T U Bones of the thumb and fingers.
a a a The capsular membrane which embraces loosely the joint of the wrist.
b b c The proper internal membrane of the carpus, which, proceeding from R and S, is inserted like a bridge into the greater multangular bone P, and the os naviculare, which it covers at *c*.
d The tendon of the internal radial muscle.
e The ligament going from the metacarpal bone of the thumb to the internal proper ligament of the wrist.
f Another accessory ligament, which embraces the extremity of the fifth metacarpal bone, by which it is articulated to the wrist.
g Ligamentous fibres descending from the styloid process of the ulna to the pisiform bone.
h Fibres extending from the inferior margin of the ulna to the pisiform bone itself.
i The strait external ligament between the fifth metacarpal and the pisiform bone.
k The ligament which connects the external margin of the triangular bone with the fifth metacarpal.
l A similar ligament between the os hamatum and the same metacarpal.
m m The ligament of the palm, resembling a narrow ribband, which, arising from the base of the fifth metacarpal, is spread over the other bones of the metacarpus.
n A bundel of fibres confining at its insertion the tendon of the radialis internus, and connecting the second with the first metacarpal.
o The capsular membrane confining the joint of the navicular and greater multangular bones.
p A similar membrane between the greater multangular bone and the metacarpus of the thumb.

Fig. 2.

Ligaments under the superficial coverings in the left hand.

S The lower extremity of the radius.
T The lower head of the ulna covered with its cartilage.
U The capsular membrane, which connected the ulna with the carpus, cut off and turned back.
X The same membrane inclosing the joint of the carpus.
Y Z Γ Δ Θ Λ The navicular, the lunated, the triangular, the orbicular, the capitated, and the hooked bones respectively.
Ξ The unciform process of the hooked bone.
Π The larger multangular bone.
Σ Σ, &c. The bones of the metacarpus.
a The ligamentous fibres from the styloid process of the ulna to the orbicular bone.
b b b The fibres which proceed from the margin of the glenoid cavity of the radius to the orbicular and lunated bones.
c c The fibres from the navicular (Y) and greater multangular (Π) bones to the capitated bones.
d e f g h The various bands between the small bones of the carpus.
i The ligament which connects the external margin of the triangular bone with the fifth metacarpal.
k The ligament between the hooked bone and the base of the fifth metacarpal.
l l The capsular membrane which confines the joint of the greater multangular bone with the base of the first metacarpal.
m The margin of the great multangular bone covered with its cartilage, where it joins with the first metacarpal.
n The base of the first metacarpal bone covered with cartilage, where it answers the greater multangular bone.
o The internal lateral accessory ligament of the capsular membrane (*l l*).
p q The tendon of the internal radial muscle running under the little ligamentous canal (*q*), where it is fixed to the base of the second metacarpal.
r s The ligamentum sublime majus and minus of the third metacarpal.
t The volar ligament between the base of the second and third metacarpal.
u u The ligament between the os capitatum and the base of the third and fourth metacarpal.
x x x The volar ligament arising from the fifth metacarpal bone, adhering to the fourth, and terminating in the third.

Fig. 3.

Ligaments of the carpus and hand.

D and G The ulna and radius.
O The interosseous membrane.
P The passage for the vessels.
q q The tendons of the extensor digitorum communis.
r The tendon of the indicator muscle.
s Tendon of the extensor minimi digiti proprius.
S The tendon of the obductor longus pollicis.
W X The first and second bone of the metacarpus.
Y Y The common dorsal tendon of the carpus, descending obliquely from the radius to the ulna, sometimes called transversal or armillary. It confines the extensors of the fingers and the hand, and forms peculiar sheaths for the passage of some tendons, particularly the obductor longus pollicis vel extensor.
z z z z The tendons of the extensor communis running on the metacarpus.

Fig. 4.

Ligaments under the tendons and under the armillary ligament.

U U U Openings for the passage of the vessels.
X X X Hollows formed in the inferior extremity of the radius, covered with the strong ligamentous coat, through which the tendons of some of the muscles run.
Y The membranous ligament which unites the extremity of the ulna to the radius.
Z The ligamentum rhomboides of Weitbrecht, or stronger fibres passing from the edge of the cavity of the radius to the os triquetrum.
β Fibres from the styloid process to the greater multangular bone.
γ The ligamentous membrane which unites the bones of the carpus externally.
δ—η The ligamentous fibres which unite the bones of the carpus to each other.
θ The ligament which covers the os multangulum majus and its connection with the metacarpus of the thumb.
κ λ μ The fibres from the os capitatum to the second, third, and fourth bones of the metacarpus.
ξ The dorsal ligament which runs from the base of the first metacarpal to the base of the second.
π ρ Dorsal ligaments which lie between the second and third, and the third and fourth metacarpal.
σ Dorsal ligaments which lie between the basis of the fourth and fifth metacarpal.

Fig. 5.

An external view of the inferior part of the right humerus, with the superior part of the fore arm.

A The lower portion of the humerus seen externally.
B Its external condyle, whose extremity is covered with a thin cartilage.
C The ulna.
D Its posterior and superior process, styled the olecranon.
E The radius.
F The round head of the radius covered with a cartilaginous lamina.
f The glenoid cavity hollowed on the top of its head, with which the lower and gibbous superficies of the condyle (B) is articulated.
G The capsular ligaments dissected. It arises from the os humeri, and is inserted into the olecranon of the ulna.
H The orbicular ligament of the radius.
I The part where this ligament arises, viz. from the posterior margin of the sinus lateralis, which is hollowed in the ulna for the reception of the radius.
K The extreme lateral ligament, which arising from the external condyle of the humerus, descends, is firmly fixed in the orbicular ligament (H), and disappears in the annular ligament.
L The membrane which loosely surrounds the radius, and binds the ulna, dissected and turned back.
M The opening for the external interosseous artery.
N The interroseous membrane.
O The posterior transversal chord of the fore arm, which, proceeding from the exterior margin of the ulna, descends obliquely, and is connected to the inner side of the radius. It runs in a direction so as to decussate the fibres of the interosseous membrane. This is called the posterior transverse chord, because some authors have described an anterior one; but the latter is very often wanting.

Ligaments of the Wrist & Elbow.

Fig. I.

Fig. II.

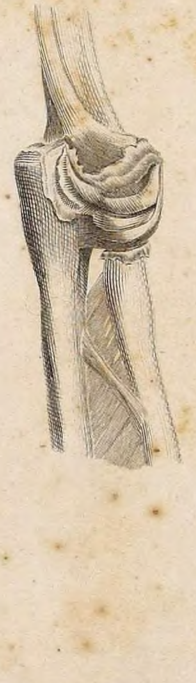


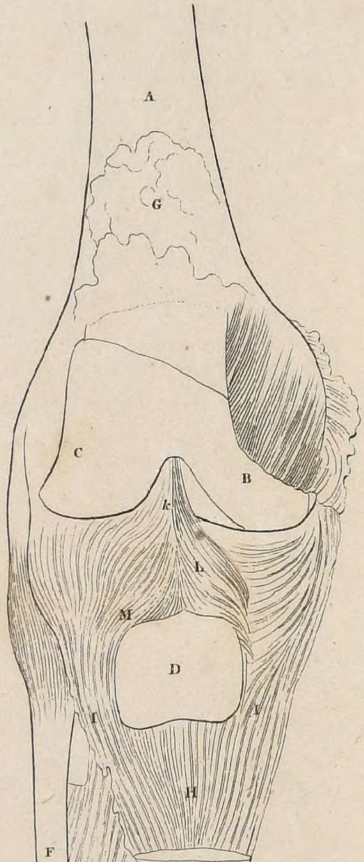
Fig. V.

Fig. III.

Fig. IV.

London Published by J. Johnson St. Paul's Church Yard Nov. 1. 1806.

Fig. I.



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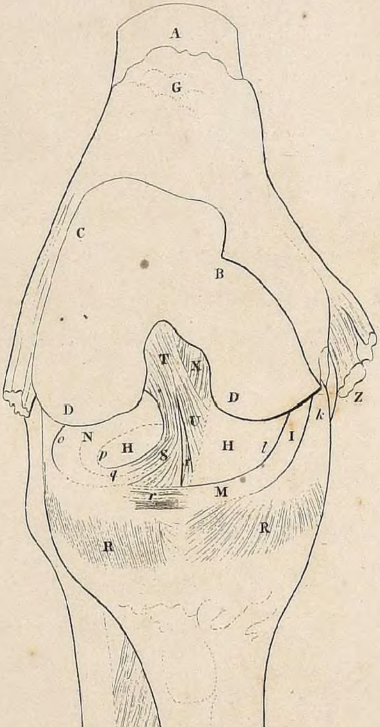

LIGAMENTS OF THE KNEE IN FRONT.

FIG. 1.

The right knee, the capsular membrane dissected from above, and the patella turned back.

A The thigh bone.

B The internal condyle covered with a thin cartilage.

C The external condyle.

D The posterior surface of the patella covered with a thin cartilage.

E F The tibia and fibula.

G Fat.

H The tendon of the musculus rectus cruris turned back, over which there is a thin membrane, which is properly the capsular membrane.

I I The interior surface of the same capsular membrane very smooth.

K The mucous ligament of the knee.

L M The greater and less ligamentum alare.

FIG. 2.

The same, but the patella removed and the thigh turned a little backward.

A B C As in fig. 1.

D D The articular surface of the condyles.

E F G As in fig. 1.

H H The glenoid cavities hollowed in the upper surface of the tibia, answering to the condyles. A cartilaginous lamina is spread over the hollows.

I The internal semilunar cartilage.

k Its external margin a little thicker.

l Its internal margin falcated and thin.

M The anterior horn of the same cartilage.

N The external semilunar cartilage.

o p Its internal and external margin.

q The anterior horn of this cartilage.

R R The membrane which descends from the external margin of the semilunar cartilages, and is lost in the border of each glenoid cavity.

r The common transverse ligaments, which proceed from the external border of the semilunar cartilage N, beyond the anterior seat of the tibia, and terminates in the anterior horn of the cartilage I.

S The ligament by which the anterior horn of the external semilunar cartilage adheres to the anterior crucial ligament. Weitbrecht calls it the first adhesion of the external cartilage.

T U The anterior crucial ligament, descending from the sinus, which divides the condyles, and particularly from the interior side of the external condyle: running obliquely, it is fixed to the internal margin of the interior glenoid cavity.

X The upper part of the posterior crucial arising from the external side of the internal condyle.

x The fibres which strengthen the transverse ligament r, and are mixed with the ligament proceeding from the anterior horn of the external cartilage, and with the anterior crucial ligament.

Z The internal lateral ligament cut off.

Ligaments of the Knee in Front.

Fig. I.

Fig. II.

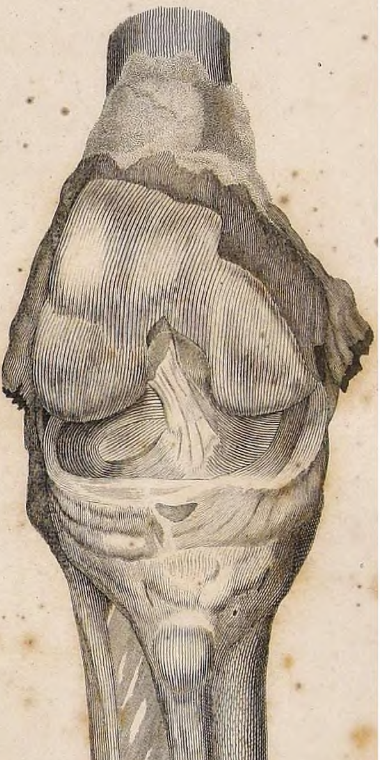

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Fig. I.

Fig. II.

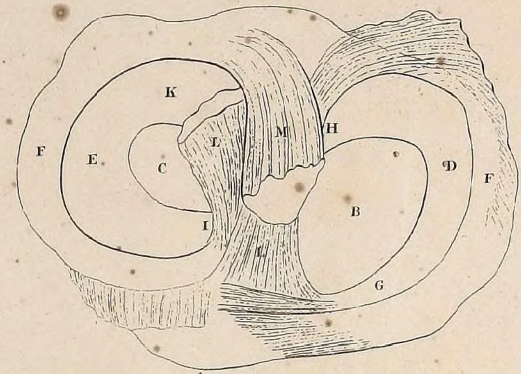
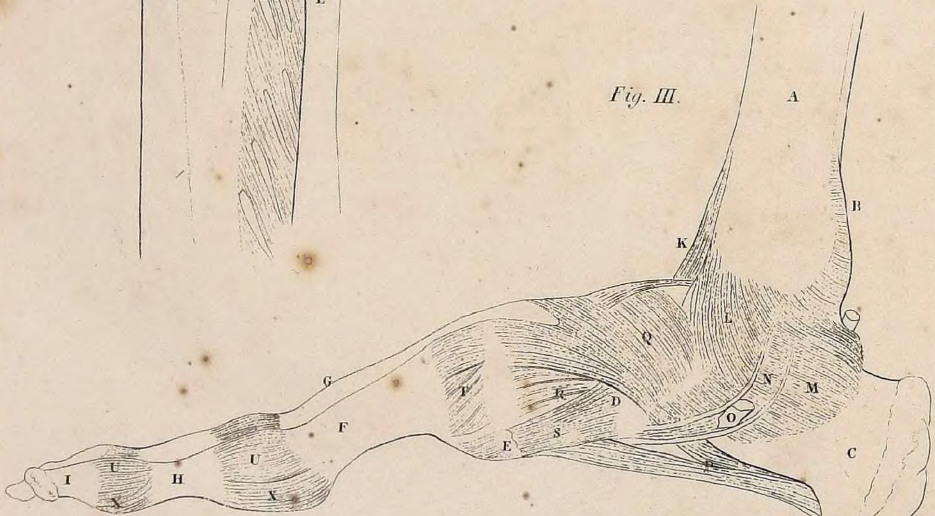


Fig. III.



VIEWS OF THE KNEE JOINT FROM BEHIND; OF THE SEMILUNAR CARTILAGES AND OF THE LIGAMENTS OF THE FOOT.

Fig. 1.

The deeper seated ligaments of the knee on the posterior part.

A A back view of the femur.
B The internal condyle incrusted with a cartilaginous lamella.
C The external condyle.
D E The tibia and fibula.
F F F The capsular membrane cut off.
G The sinus in the external side of the head of the tibia, with which the fibula is articulated.
H The internal semilunar cartilage.
I The ligamentous membrane by which the cartilage is connected with the tibia.
K The external semilunar cartilage.
L The capsular membrane which strengthens the head of the fibula, and which, in its ascent, unites with the border of the external semilunar cartilage.
M The rope, or a very strong ligamentous fascia, rising from the sinus of the femur, dividing the condyles behind, which, running under the capsular membrane, turns downward and adheres to the head of the tibia. This chord has been overlooked by former syndesmologists.
N A part of the external lateral ligament cut off.
O The fibres which connect the tibia with the fibula behind.
P The interosseous membrane.

Fig. 2.

Semilunar cartilages, with the head of the tibia.

A The anterior tuber of the tibia.
B The internal glenoid cavity incrusted with cartilage.
C The external glenoid cavity.
D The internal semilunar or falcated cartilage.
E The external semilunar or falcated cartilage.
F F The thickness of the cartilages.
f f The thinner border.
G The anterior horn of the internal cartilage.
H The posterior horn of the internal cartilage.
h The transverse common ligament.
I The anterior horn of the external cartilage.
K The posterior horn of the external cartilage.
L L and M The anterior and posterior crucial ligaments.

Fig. 3.

An internal view of the back of the foot, with the ligaments.

A The tibia.
B A hollow behind the malleolus internus.
C Os calcanei.
D Os naviculare.
E The first cuneiform bone.
F G The first and second metatarsal.
H I The first and second bone of the great toe.
K The capsular membrane of the joint of the tarsus.
L The deltoid ligament.
M Oblique fibres between the talus and calcaneus internally.
N The sheath through which the tendon of the tibialis posticus (O) runs.
P The aponeurosis plantaris.
Q The ligamentous apparatus between the naviculare, and the first and second cuneiform bone.
R The dorsal ligament between the os naviculare and the first cuneiform bone.
T The capsular membrane of the first cuneiform and the metatarsal bone of the great toe.
U U A similar membrane connecting the bones of the great toe with each other.
X X The oblique and lateral ligaments of the same joints.

Views of the Joint of the Knee from behind, the Semilunar Cartilages, & the Ligaments of the Foot.

Fig. I.

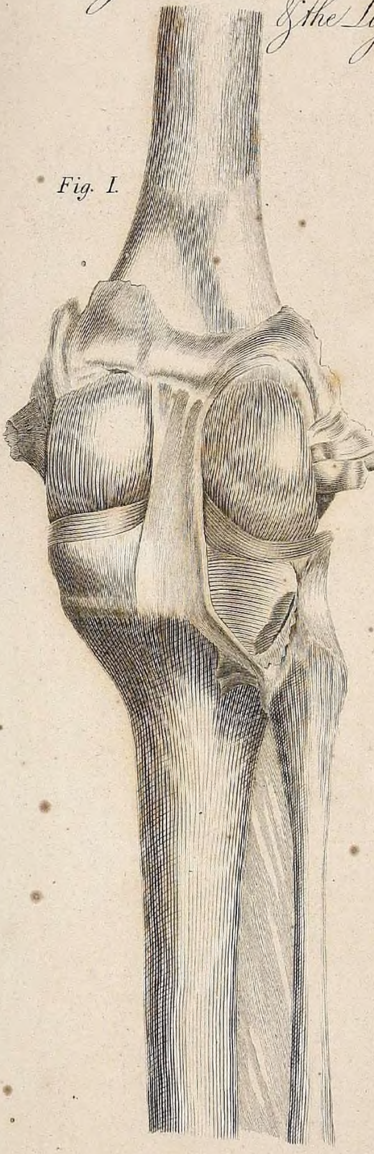
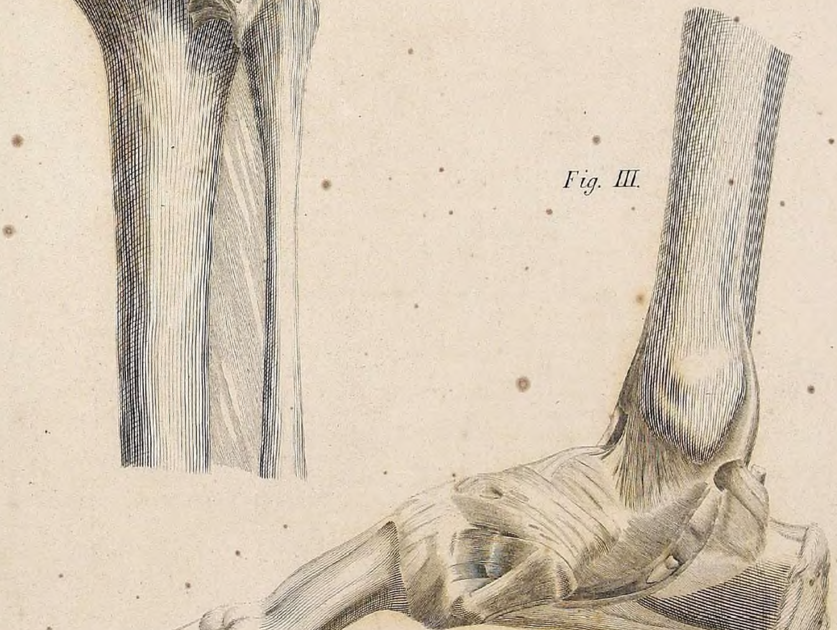


Fig. II.

Fig. III.



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Joseph Skelton sc

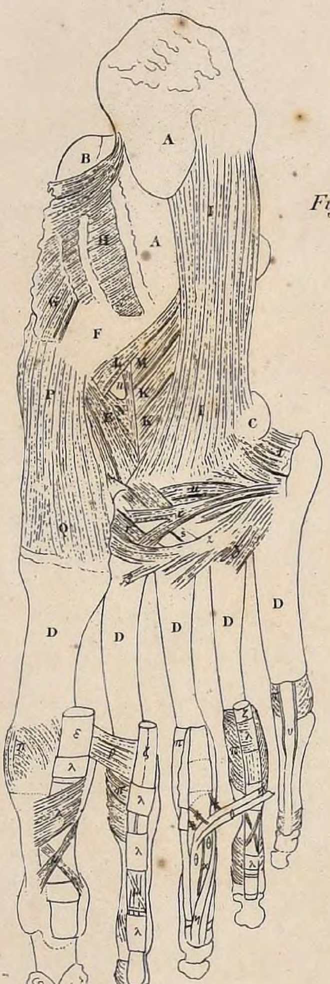
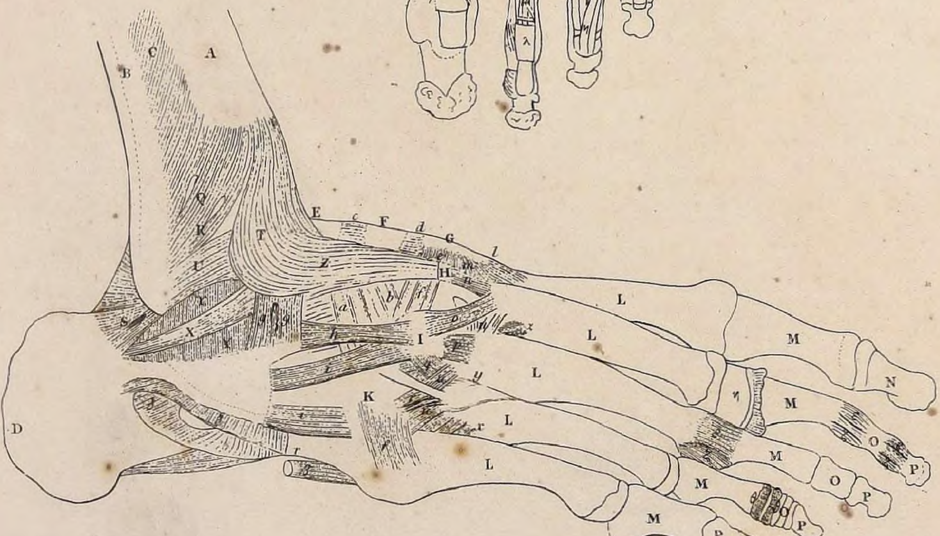


Fig. I.

Fig. II.



LIGAMENTS OF THE FOOT.

FIG. 1.

The sole of the foot with its ligaments.

A A Calcaneus.
B Os tali.
C Os cuboideum.
D, D D Metatarsal bones.
E The tendon of the tibialis posticus.
F The ligamentous sheath for the passage of the tendon.
G The furrow through which the tendon runs.
H The portion of the sheath which belongs to the flexor longus of the great toe.
I I The ligamentum plantare proceeding from the anterior face of the tuber in the heel-bone, and straight to the os cuboideum.
K K and L The oblique ligament between the calcaneum and cuboideum, and between the former and the os naviculare.
M The round ligament between the calcaneum and naviculare.
N The transverse ligament from the os naviculare to the cuboideum.
n The band carried straight from the posterior portion of the cuboid to the third os cuneiforme.
o The *plantar ligament* between the naviculare and second cuneiform bones.
p The plantar *transverse* ligament between the first and third cuneiform.
P The ligamentous capsular ligament connecting the os naviculare with the first cuneiform.
Q A similar membrane between the first cuneiform and the metatarsus of the great toe.
r The ligament between the first cuneiform bone and the third metatarsal bone.
s s The ligament between the third cuneiform and the fourth metatarsal.
t t The capsular membrane between the fifth metatarsal and the cuboid bone.
u The band which passes transversely from the fifth metatarsal to the third cuneiform.
x The transversal ligament of the fifth metatarsal.
z The common *plantar* ligament of the metatarsal bones.
β γ δ The *plantar* ligaments between the different metatarsal bones.
ε The tendon of the flexor proprius of the great toe.
ζ ζ The tendons of the flexor communis in the second and fourth toe.
η η The tendon of the *perforans* in the third toe.
θ θ The tendon of the *perforatus* of the same toe.
κ κ κ Ligamentous bands of the tendons.
λ The sheaths which confine the tendons of the flexors.
μ μ μ The *crucial* ligaments.
ν The opened sheath, which contained the tendons of the flexors.
π π Capsular membranes connecting the bones of the toes with the metatarsal bones.
ρ The ligamentous membrane between the heads of the first and second metatarsal; the same in the other toes.

FIG. 3.

An external view of the back of the foot with the ligaments.

A Tibia.
B Fibula.
C The interosseous membrane of the leg.
D Calcaneus.
E Talus.
F Os naviculare.
G H I The first, second, and third cuneiform bones.
K Os cuboideum.
L L L Metatarsal bones.
M M M O O O The first and second bones of the toes.
N The second bone of the great toe.
P P P The extreme bones of the toes.
Q R The superior and inferior, anterior, ligament of the external malleolus.
S The middle perpendicular ligament of the fibula.
T The capsular ligament connecting the joint of the leg with the tarsus.
U The anterior ligament between the fibula and the talus.
X The internal lateral ligamentous band between the talus and calcaneus.
Y Y A strong ligamentous membrane between the calcaneus and the talus.
Z A ligamentous fascia carried from the talus to the os naviculare F and cuneiforme H.
a b c d Ligaments between the talus and cuboid; the naviculare and third cuneiform; the talus and naviculare; the naviculare and first cuneiform.
e f Ligamentous fibres between the cuneiform bones.
g g Anterior and lateral perpendicular ligaments descending from the talus to the calcaneus, in a sinuous cavity.
h The ligament between the calcaneus and the third cuneiform
i i Ligaments between the calcaneus and os cuboides.
l Capsular ligament strengthening the connection between the first metatarsal and the cuneiform.
m—q Ligaments between the different cuneiform and the metatarsal bones.
r s Ligaments between the os cuboides and the fourth and fifth metatarsals.
t Fibres passing directly from the cuboid bone to the fourth metatarsal.
u u u Dorsal ligaments of the base of the metatarsal bones.
x y z Lateral ligaments between the different metatarsal bones.
β γ Tendons of the peronæus longus and brevis.
δ δ The channels through which the tendons of the peronæi run.
ε ε ε The capsular ligament which confines the toes to each other.
ζ ζ ζ The lateral ligaments.
η The joint opened.
θ The capsular ligament turned back.

Ligaments of the Foot.

Fig. I.

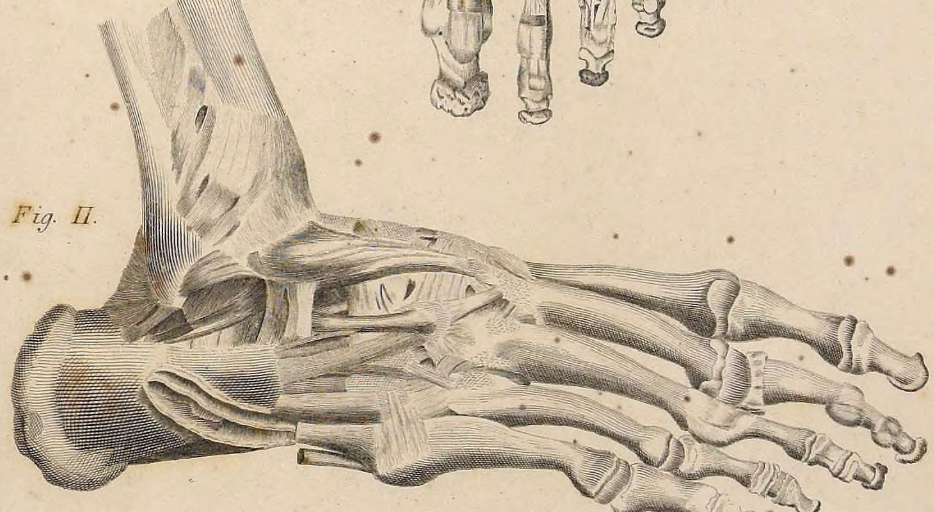


Fig. II.

London Published by J. Johnson, St. Paul's Church Yard Nov. 1. 1806.

Map &c. of the Arteries on the front Part.

Published by I. Johnson, St. Pauls Church Yard Feb.y 1st. 1806. Wm. Skelton sculp.

DESCRIPTION OF THE MAP, &c. OF THE ARTERIES ON THE FRONT PART.

FIRST REGION.

THE HEART.

A The heart in its situation, but a little drawn down, from its weight, so that the roots of the great vessels are opposite the third rib, which should have been opposite the second. The coronary arteries are seen branching on it.
B C The right and left auricle full.
D Trunk of the pulmonary artery.
E Ductus arteriosus.
F The left branch of the pulmonary artery.
G H The aorta and its great arch.
L The common foot of the right subclavian and carotid which are seen branching off above to the arm and head.
O P The left carotid and subclavian.
1 to 9 The intercostal arteries on the left side. Those on the right are seen opposite.
A Aorta descendens.

SECOND REGION.

THE NECK.

A Aspera arteria.
b c The thyroid gland and its cartilage.
h Maxillary glands.
o o The trapezii muscles turned back.
p The left cerebral carotid.
q The left external carotid.
r r Left and right superior thyroid artery.
y The submental artery.
z The labial artery.
α The temporal artery.
β The left vertebral artery.
γ The greater inferior thyroid artery.
ξ The jugular vein.
ρ The occipital artery.

THIRD REGION.

THE FACE.

A Triangularis muscle.
B Masseter.
C Parotid gland.
E F Zygomaticus, inferior and superior.
G Levator labiorum communis.
H Levator of the upper lip.
I Orbicularis palpebræ.
K Temporal muscle.
L M Frontalis and procerus.
N Nasalis labii superioris.
O P Orbicularis oris.
Q Quadratus menti.
S T The naked jaw and cheek-bone.
X Ciliaris muscle.

Vessels.

i and *m* The coronary artery of the upper lip, and the nasalis arising from it.
n and *o* The interior and exterior anastomoses of the labial with the interior ophthalmic.
p The temporal artery passing through the parotid.
q q The sincipital branches.
ρ The superior branch of the ophthalmic artery.
ϖ and ν The superior and inferior arch in the forehead.
B to G Auricular arteries.
O The external superciliary joined with ν.
P The frontal artery joined with ϖ.

FOURTH REGION.

THE RIGHT ARM.

A Clavicle broken off.
B The coracoid process of the scapula.
C Serratus minor.
D Part of the deltoid moved from its situation.
E Teres major.
F Its conjunction with the latissimus dorsi.
H The deltoid in its proper situation.
I and K The extensor longus and brevis cubiti.
L Brachialis externus.
M and N Biceps and brachialis internus.
O Coraco brachialis.
P The flexor condyle of the humerus.
Q Flexor carpi ulnaris.
R Flexor digitorum sublimis.
S Palmaris.
T Flexor carpi radialis.
X Teres pronator.
Y Supinator longus.
Z Flexor digitorum profundus.
5 Annular ligament of the wrist.

Vessels.

a Subclavian artery.
c Acromialis.
d Branches to the ribs.
g Arteria scapularis.
o The deep branch of the humerus.
d The trunk going to the back of the humerus.
β The first anastomotic branch – anastomoticus major.
δ Anastomotic branch, with the recurrent ulnar.
μ and ν The truncus radialis and ulnaris.
ω A branch from the radial artery, making the superficial palmar arch.
Γ The ulnar artery emerging from under the flexors.
d A branch from the ulnar artery perfecting the palmar arch, from whence the arteries of the fingers are derived.

N.B. The branches from the palmar arch to the different parts of the finger may be seen by inspection. The plate would be confused by fingers.

FIFTH REGION.

VESSELS AND DEEP MUSCLES OF THE LEFT ARM.

C The head of the humerus.
D Infrascapularis.
G G The two heads of the biceps.
M The short extensor of the cubitus.
O Extensor longus moved from its situation.
P Brachialis externus removed on the other side.
Q The tendon of the biceps.
R Supinator.
T The ulnar flexor of the carpus.
V The naked ulnar.
X The interosseous ligament.
Γ Pronator quadratus.
Δ Supinator longus.
o The little bones of the carpus and fingers.

Vessels.

1 The acromial artery cut back.
2 Internal scapulary.
3 The trunk turned towards the back.
4 Anterior circumflexa.
5 The continuation of the circumflex.
6 Profunda humeri.
7 Posterior circumflex.
8 The first anastomotic artery.
9 The recurrent radial.
A The radial artery.
C The dorsal branch of the hand.
D The recurrent ulnar.
E The interosseal artery.
F The ulnar branch of the interosseal artery anastomosing with a branch of the cubital artery.
G The ulnar artery going to the hand.

SIXTH REGION.

ABDOMEN AND PELVIS.

A and B The right and left kidney.
C and D The right and left renal capsule.
E E Each transverse muscle of the abdomen.
Γ Internal oblique.
F G The right and left quadratus.
H The left psoas.
Δ Δ Right and left ureter.
I Intestinum rectum.
K Vesica urinaria turned back.
L M The right and left internal iliac muscle.
P The part of the os pubis to which the ligament of the penis is affixed.
Q The skin of the scrotum partly denudated.

Vessels.

1 Abdominal aorta.
2 Trunk of the cœliac.
3 and 4 The hepatic and splenic arteries.
5 The coronary artery of the stomach.
6 The superior mesenteric.
7 The left renal artery.
8 The posterior renalis.
9 and 10 The right and left spermatic.
11 The inferior mesenteric.
12 A branch of the intestinum rectum.
13 The middle sacral artery.
14 A branch of the middle sacral to the rectum.
15 and 16 The right and left iliac arteries.
17 Right ilio lumbalis.
18 Obturatoria.
19 Posterior iliac.
20 Hæmorrhoidea and ischiadica.
21 Umbilicalis.
22 The two vesical arteries.
23 The right abdominal.
24 The right epigastric artery.
25 The artery of the penis.
26 The left abdominal.

SEVENTH REGION.

RIGHT THIGH.

Muscles to the Knee.

A Glutæus medius.
B Fascia lata.
C Sartorius.
D Rectus.
E Vastus externus.
F Vastus internus.
G Pectineus.
H Biceps anterior.
I K Triceps medius and longus.
L Gracilis.
M Semimembranosus.
N Patella.
O Internal condyle of the femur.

Vessels.

a Femoral artery.
b The branch to the iliacus and pectineus.
c Another to the inguinal gland and vastus muscle.
d Another to the pectineus and ileum, inosculating with *b*.
e Superior external pudenda.
f Branches to the scrotum.
i A branch to the penis inserted into its artery.
k The external circumflex.
m The second external pudenda.
n n Great branch to the vastus externus.

The direction of the other branches are obvious from inspection.

EIGHTH REGION.

THE LEFT THIGH.

Muscles.

B Sartorius cut off.
C Rectus superior.
D Triceps magnus.
E Semimembranosus.
F and G Vastus internus and externus.
I Inferior part of the rectus.
K Fascia lata.
L Glutæus medius.

Vessels.

a Femoral artery cut off.
b Profunda femoris.
c Circumflexa externa.
d The upper trunk of the circumflexa externa.
e The pudenda cut off.
f Circumflexa interna.
g Nutritia femoris.
h The trunk of the femoral artery cut off.

NINTH REGION.

THE RIGHT TIBIA ON THE INTERNAL SIDE WITH THE FOOT.

C Part of the solaris.
D The gastrocnemii.
E Tendo achillis.
F Pollicis flexor longus.
G Flexor longus digitorum pedis.
I Tendo flexoris longi.
P Tibialis anticus.
Q and R The extensors of the toes.

Vessels.

1 A branch of the inferior internal circumflexa.
2 A branch from the posterior tibialis.
3 A long anastomosis, with the subcutaneous branch of the popliteal artery.
4 The posterior tibial artery.
5 The anterior tibial artery.
6 A branch communicating with the inferior plantaris.
7 Continuation of the trunk of the tibial artery.
8 Trunk of the peronea antica.

TENTH REGION.

THE LEFT LEG AND FOOT; THE SUPERIOR MUSCLES REMOVED.

Muscles.

A The ligament of the patella.
B Extensor longus pollicis.
C The common extensor of the toes cut off.
D Interosseous ligament.
E Tibialis anticus.

Vessels.

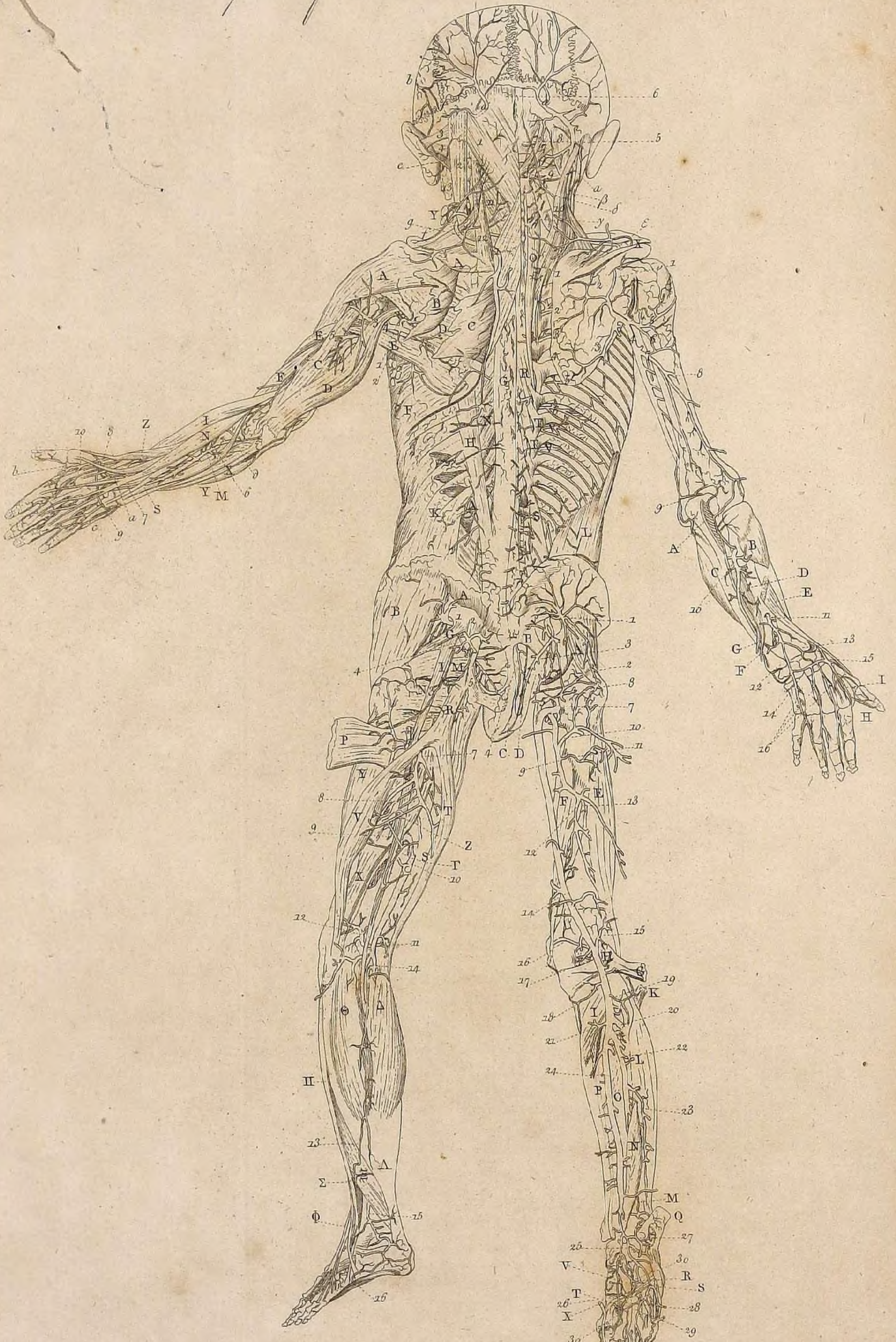
1 Tibialis antica.
2 The lower internal circumflex of the knee.
3 An artery of the external malleolus.
4 A circumflex branch meeting the peronea.
5 Branches to the malleolus internus.
6 The arch at the termination of the metatarsus.
7 The metatarseal arch.
8 The three perforating arteries.
9 The accompanying artery of the sartorius, going to the internal condyle and the ligament of the patella.

Arteries and principal Muscles on the front Part.

Wm Skelton sculp.

Published by J. Johnson St Pauls Church Yard Feb. 1st 1806.

Map &c. of the Arteries on the back Part.



Published by J. Johnson, St. Pauls Church Yard, Feby. 1st 1806.

Joseph Skelton sculp.

DESCRIPTION OF THE MAP, &c. OF THE ARTERIES ON THE BACK PART.

FIRST REGION.

THE NECK, FROM THE HEAD TO THE SCAPULÆ *.

Muscles about the Head and Neck.

1 Splenius capitis.
2 Sterno cleido-mastoideus.
3. 4 Posteriores auris.
5 Rectus capitis posticus minor.
7 Rectus capitis posticus major.
6 Complexus.
8 Obliquus superior.
9 Obliquus inferior.
10 Trachelo mastoideus.
11 Splenius colli.
12 Levator scapulæ.
13 Parotid gland.

§ 1. *The Branches of the Neck on the Left Side.*

a a Occipital arteries.
b Branch of the posterior temporal artery.
e Auricular branch of the same.
f Branch of the cervical thyroid artery.
g Arteria dorsalis suprema.

§ 2. *The Branches of the Neck on the Right Side.*

α Occipital artery.
β The ascending thyroid artery.
γ The deep cervical artery from the subclavian.
δ A branch of the thyroid artery to the neck.
ε The dorsal artery of the scapula.

SECOND REGION.

THE BACK AND SCAPULA.

Muscles.

A Supraspinatus.
B The origin of the trapezius turned back from the spine of the scapula.
C The rhomboideus muscle removed.
D Infra spinatus.
E Teres major.
F Serratus anticus major.
G Longissimus dorsi.
H Sacrolumbalis.
K and L The ascending and descending oblique.
Λ The seat of the kidneys.
N The levators of the ribs.
O Spinalis colli.
R Multifidis spinæ.
S Quadratus lumborum.
T T The oblique ligament of the ribs.
V Perpendicular ligament of the ribs.
X The clavicle.
Y Glandulæ alares.

Vessels.

Left side. 1 1 The higher dorsal.
Right side. 1 2 3 4, &c. Intercostals.

* The left side has most of the muscles under the skin, except the nates, from which the glutæus major is removed.
The right side has the deeper muscles, and occasionally the naked bones.

REGION THIRD.

LEFT ARM.

A Deltoid.
C Brevis extensor humeri.
D Extensor longus.
E Brachialis internus.
F Supinator longus.
I Bicornis.
M The seat of the interosseous ligament.
N Extensor communis digitorum.
S Extensor minimi digiti.
X Ulnaris extensor.
Y Ulnaris Flexor.
Z Abductor pollicis longus.
a Indicator.
b Adductor pollicis.
c Abductor minimi digiti.
d Anconæus remotus.

Vessels.

1 Trunk of the axillary artery.
2 Inferior scapulary artery.
3 The posterior circumflex.
4 Trunk of the humeral artery.
5 Profunda humeri.
6 The posterior superior interosseal artery.
7 The ulnar, or the large branch of the interosseal, going to the carpus.
8 Part of the radial artery.
9 The carpal arch.
10 The radial branch, passing to the palm.

FOURTH REGION.

THE RIGHT ARM CHIEFLY DEPRIVED OF ITS MUSCLES.

A Anconæus removed.
B Supinator brevis.
C Ulnar flexor of the carpus.
D Interosseous ligament.
E Abductor pollicis longus cut off from its origin.
F The other abductor of the thumb cut from its insertion.
G Indicator.
H Abductor pollicis.
I Semi-interosseus of the fore finger.

Vessels.

1 The superior dorsal artery of the scapula rising from the thyroid.
2 Nutritia scapulæ arising from it.
3 The branch of the scapular artery following the lower rib of the scapulæ.
4 Trunk of the axillary artery.
5 The posterior circumflex.
6 Anastomosis with the profunda humeri.
7 Profunda humeri.
8 The superior nutritia of the humerus.
9 Anastomosing branch of the cubital.
10 The great dorsal interosseal artery.
11 The lowest interosseal of the fore arm.
12 The middle branch of the lowest interosseal.
13 The radial branch.
14 The carpal arch.
15 The radial artery.
16 The perforating branches.

FIFTH REGION.

THE NATES AND THE FOOT OF THE LEFT SIDE.

Muscles.

A The glutæus major cut off at its origin.
B Glutæus medius.
G The pyramidal muscle.
I Ischiadic nerve.
M Obturator internus.
N Quadratus.
P Termination of the great glutæus.
R The common head of the seminervosus and biceps.
S Semimembranosus.
T Seminervosus a little drawn aside, to show the parts below.
V The biceps longus drawn aside.
X Biceps brevis.
Y and Z Vastus externus and internus.
Γ Triceps magnus.
Δ and Θ Gastrocnemius internus and externus.
Λ Tendo achillis.
Ξ Flexor longus pollicis pedis.
Π and Σ Peronæus longus and brevis.
Φ Extensor communis digitorum.

Vessels.

1 Posterior iliac.
2 Ichiadic artery.
3 Anastomosis with a branch of the obturatoria.
4 Hæmorrhoidea interna.
5 Circumflexa interna.
6 Arteria perforans prima.
7 Its descending trunk.
8 Perforans secunda.
9 Nutritia femoris.
10 Trunk of the crural artery laid bare.
11 and 12 The internal and external superior articular artery.
13 Anastomosis with the branch of the anterior tibial.
14 The place where the popliteal artery hides itself.
15. Peronea anterior.
16 Part of the tarseal artery.

SIXTH REGION.

THE RIGHT THIGH AND FOOT.

All the former Muscles removed, that the deeper Vessels may be seen. The Tricipites are also removed.

Muscles.

A Glutæus minimus.
B Sacro-sciatic ligament.
C and D Part of the rectum and vagina.
E and F Vastus externus and internus.
G Part of the external gastrocnemius.
H Capsule of the articulation of the knee.
I Popliteus.
K The tendon of the biceps.
L and M Peroneus longus and brevis.
N Flexor pollicis longus.
O Tibialis posterior.
P Flexor of the toes.
Q Tendo achillis.
R The ligament from the heel to the fifth metatarsal bone.
S The great square ligament of the bottom of the foot.
T Tendon of the peronæus longus.
V The ligament from the os navicularis to the third metatarsal bone.
X Tendon of the flexor of the great toe.

Vessels.

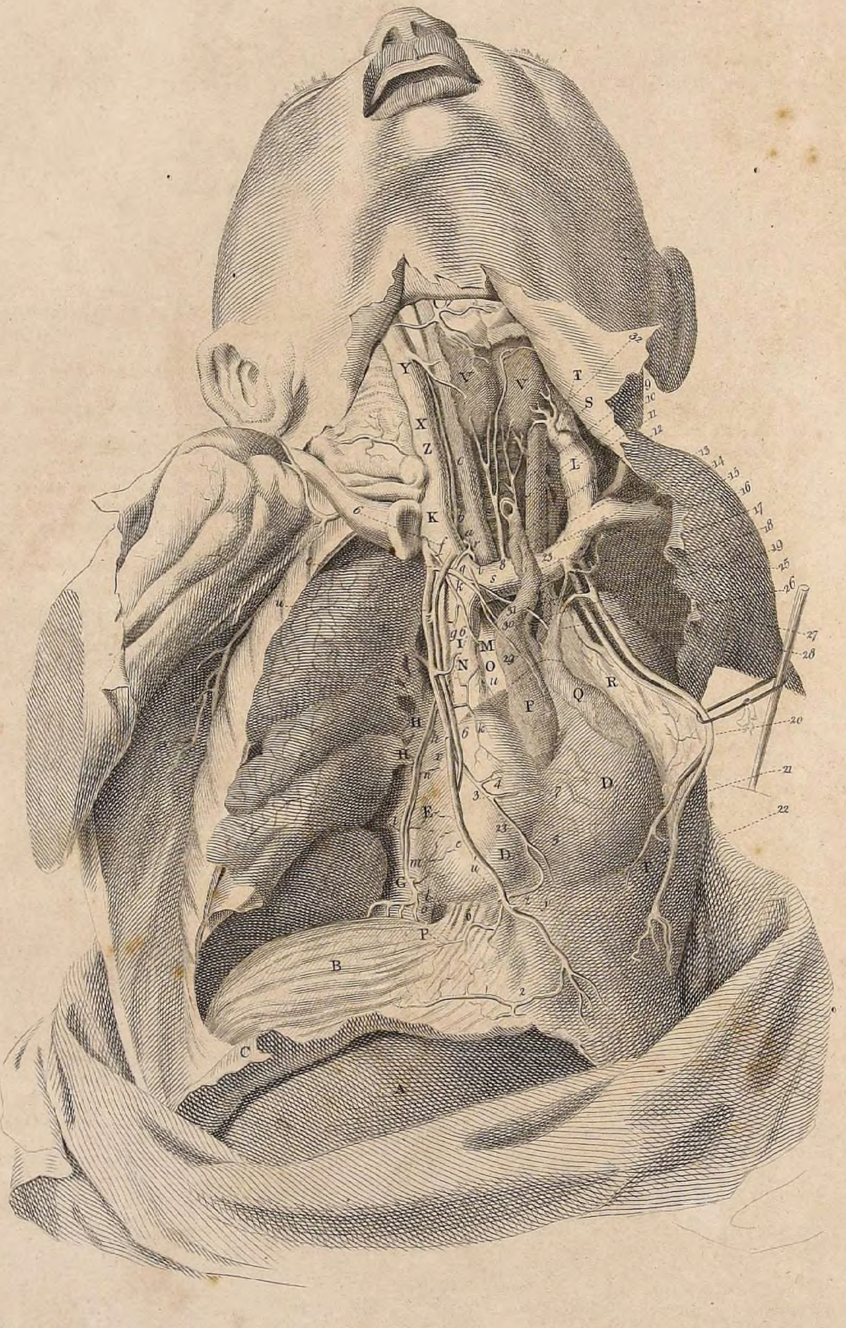
1 Posterior iliac artery.
2 The branch anastomosing with the internal circumflex.
3 Superficial branch of the hæmorrhoidea.
4 An artery from the internal mesenteric to the rectum.
5 The trunk of the femoral artery.
6 A deep branch.
7 Circumflexa interna.
8 Anastomosis with a branch of the profunda and posterior iliac.
9 Arteria profunda femoris.
10 and 11 The first and second perforans.
12 Trunk of the profunda.
13 Nutritia.
14 Trunk of the femoral artery.
15 Articularis superior externa.
16 The internal superior articular artery of the knee.
17 The azygos of the articulation of the knee.
18 and 19 The internal and external inferior articular artery of the knee.
20 Tibialis anterior.
21 Nutritia tibiæ.
22 Peronæa postica.
23 Nutritia fibulæ.
24 Posterior tibial.
25 The internal plantaris.
26 The trunk of the internal plantaris.
27 The external plantaris.
28 The plantar arch.
29 The trunk of the anterior tibialis.
30 The anastomosis of the internal and external arteria hallucis.
31 The first superior arteria perforans.

Arteries and principal Muscles on the back Part.

Joseph Skelton sculp.

Published by J. Johnson, St. Pauls Church Yard, Feby. 1st. 1806.

Anterior Arteries of the Breast.



Published by J. Johnson, St. Paul's Church Yard Feb. 1. 1806.

Basire Sc.

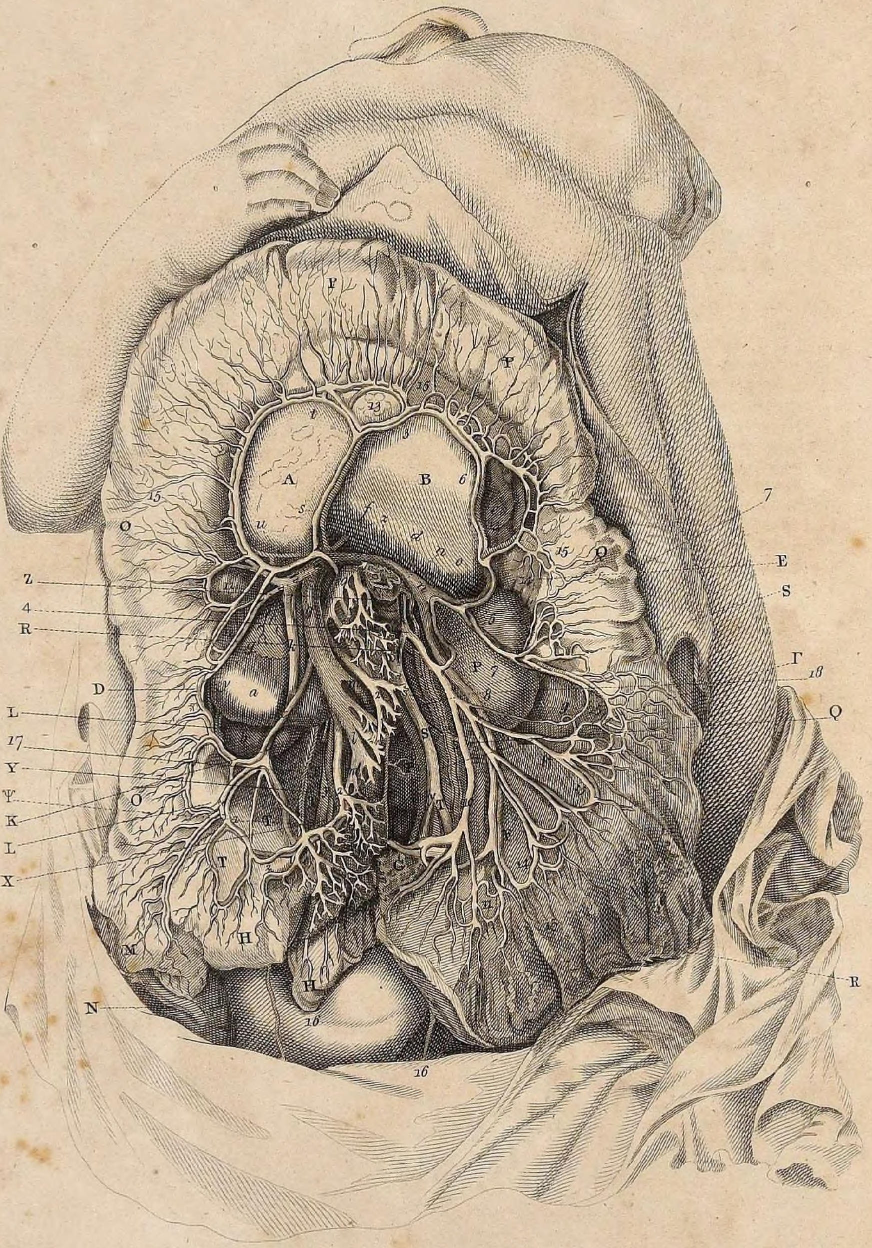
TABLE

OF

ANTERIOR ARTERIES OF THE BREAST.

A The liver.
B Right side of the diaphragm.
C Some part of the muscles of the abdomen.
D The pericardium, through which the heart is occasionally seen.
E The right auricle, expressed by dots.
F The apex of the heart.
G The vena cava inferior.
H The right pulmonary veins.
I The vena cava superior.
K Its continuation in the right jugular.
L The left jugular vein.
M Part of the aorta.
N The line terminating the pericardium in the vena cava.
O The line at which it adheres to the aorta.
P and Q The right and left sides of the thymus.
R The left lamina of the mediastinum joined to the pericardium.
S Aspera arteria.
T Œsophagus.
V Thyroid gland.
X The internal jugular vein.
Y The superior thyroid vein.
Z The right nerve of the eighth pair.
a The common trunk of the right subclavian and carotid.
b The right subclavian.
c The right carotid.
d and *e* the right mammary vein and artery.
f The pericardiaco-diaphragmatic branch of the mammary artery.
g The branches that go to the pericardium, and the glands that lie on the vena cava.
h The branch that accompanies the diaphragmatic nerve.
i k The superficial branches that go to the lungs and pericardium.
l The branch of the right phrenic artery.
m The ascending branch, with the diaphragmatic nerve.
n The anastomosis of each artery accompanying the nerve.
o The branches of the right phrenic artery to the diaphragm.
p Anastomosis of the phrenic, with the mammary artery.
q The right thymic artery.
y. z The external or epigastric branch, with the smaller branches to the external teguments of the breast.
1. 2 The interior and exterior abdominal branches; viz. epigastricus interior, and musculo phrenica.
3 The internal branch of the mammary, or the phrenico-pericardiacus.
4. 5 Branches to the mediastinum and pericardium.
6 Trunk going out to the diaphragm.
7 The anterior coronary arteries.
8. 9 and 10 The inferior, right, and left thyroid veins, with the branches to the trachea.
11 and 12 Branches to the œsophagus, and right horn of the thymus.
13 and 14 Left carotid and subclavian.
15 Two branches of the inferior thyroid artery.
16 and 17 Left vertebral and mammary arteries.
18 The mediastine branch of the mammary which accompanies the phrenic nerve.
19 The left thymic branch.
20 Division of the left mammary.
21 The left phrenico-pericardiac branch.
22 The epigastric branch.
23 The left subclavian vein.
24 The left jugular vein.
25 The left mammary artery.
26 The left thymic branch.
27 A superficial branch.
28 The left bronchial vein.
29 The thymic branch.
30 The mediastin branch.
31 The bronchial branch.
32 The middle thyroid vein on the left.

Mesenteric Arteries.



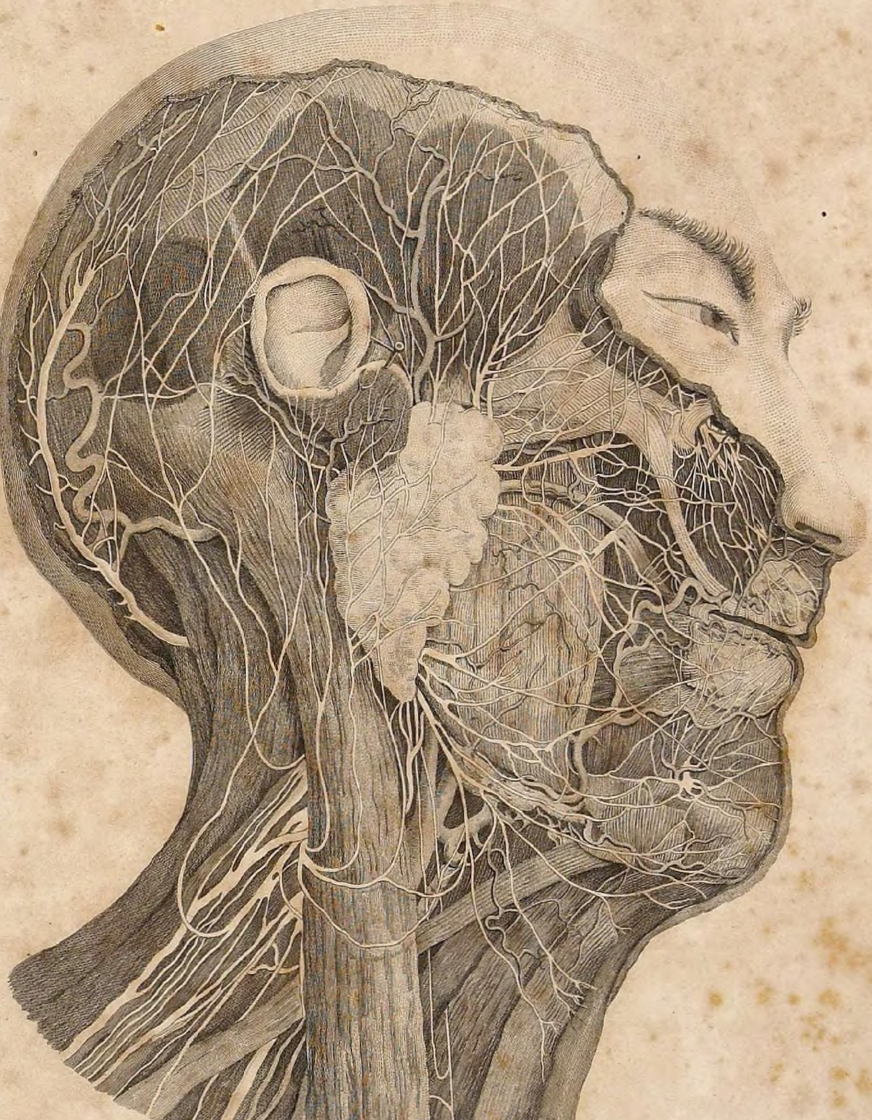
TABLE

OF THE

MESENTERIC ARTERIES.

A B C The mesocolon entire, bent back to show its root.
A B C D The situation answering to the liver, stomach, and spleen, respectively.
D The left side of the mesocolon.
E Part of the left mesocolon between the spleen and the kidney,
F The left flexus iliacus of the mesocolon: the membranes between the trunks are destroyed, to show the viscera which it covers.
G That part of it which descends to the rectum.
H Part of the ileum.
I The termination of the mesentery, where it is continued, with the right mesocolon.
K K The right part of the mesentery; the under vessels between the large ones exposed, that their connection may be understood.
LL The right mesocolon, treated in the same way.
M and N The cæcum and appendicula.
O P Q The right, the transverse, and the left colon.
R The left flexus iliacus of the colon.
S The left kidney.
Θ and Λ The vasa spermatica and vasa adiposa from them.
R and S *bis*, on the upper part of the plate. The trunk of the aorta, and the iliaca arteria communis.
T The iliaca arteria externa.
Φ The last cartilage of the loins.
V The internal iliac.
X The vena socia.
Y Arteria sacra.
Z The first part of the jejunum, which emerges from under the transverse mesocolon.
a The inferior transverse part of the duodenum.
b Part of the right kidney.
c The right portion, or the head of the pancreas.
d The transverse part of the pancreas, lying behind the transverse mesocolon.
e The trunk of the vena portæ.
f The left coronary vein.
g The mesenteric vein.
h. i and *k* The gastrocolic, the right colic, and the ileo colic veins, respectively.
l The mesenteric vein, arched.
m The mesenteric branches cut off.
n The internal hæmorrhoidal vein, or the left colic vein.
o and *p* The ascending and descending branches.
q The superior mesenteric artery.
r The middle colic.
s The branch which passes into the middle of the transverse mesocolon.
t Its right branch which unites with the right colic.
u The right colic, making an arch with the former.
x and *y* The ileo-colic artery, and the arch which it makes with the right colic.
z The ramus cæcalis.
1 Its arch and anastomosis, with the mesenteric artery.
2 The branches of the superior mesenteric artery, and the small intestines.
3 The left branch of the middle colic.
4 The left colic, or inferior mesenteric artery, with (5) its ascending branch.
6 Its union with the middle colic, or the great mesenteric arch.
7 Its branches to the left colon.
8 The middle trunk of the left colic artery.
9 The arch with the ascending branch of the mesocolic.
10 The lower branch of the left colic, or the hæmorrhoidalis interna, with the arch (11) which it forms with the former.
12. 13 and 14 The secondary or double arches with the right, the middle, and the left, colic arteries.
15 Strait branches passing to the intestines from the secondary arches.
16 Epigastric arteries.
17 and 18 Spermatic vessels and psoas muscle.

View of the Salivary Glands; their Ducts, Blood Vessels, & Nerves.

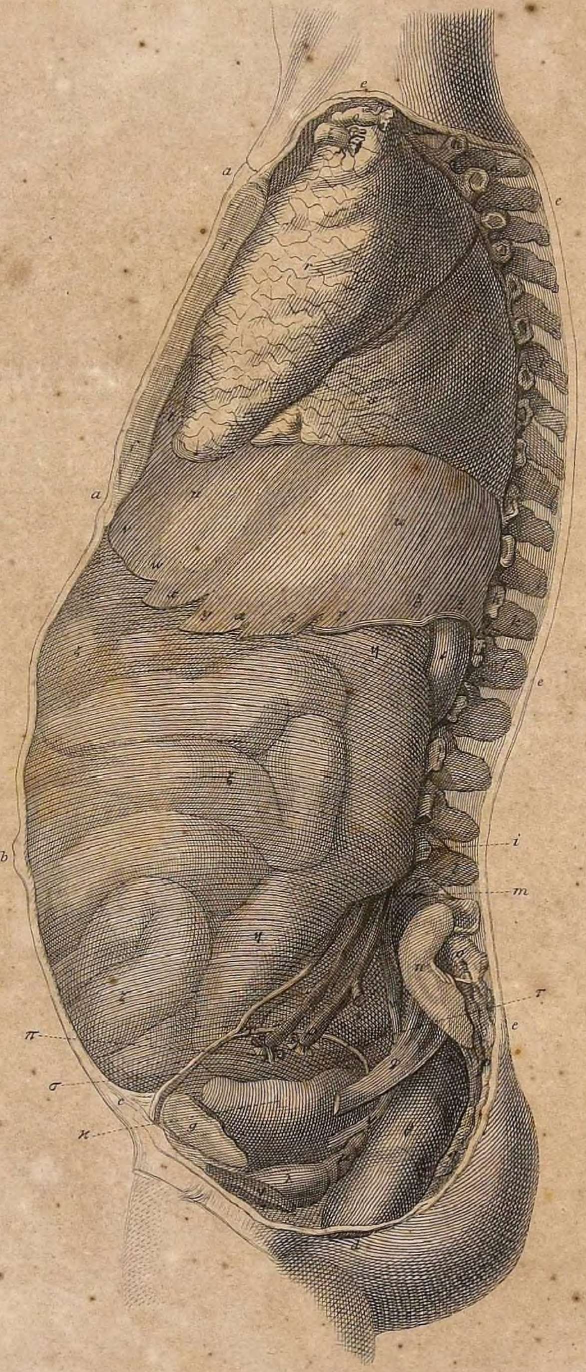


W. Skelton sculp.t

The different parts are here so clearly distinguished by the Engraver, that any minute reference would disfigure the plate and scarcely assist the Anatomist.

London Published by J. Johnson March 1.1808.

Lateral View of the Thoracic, Abdominal, and Pelvic Viscera.



Dadley. Sculp

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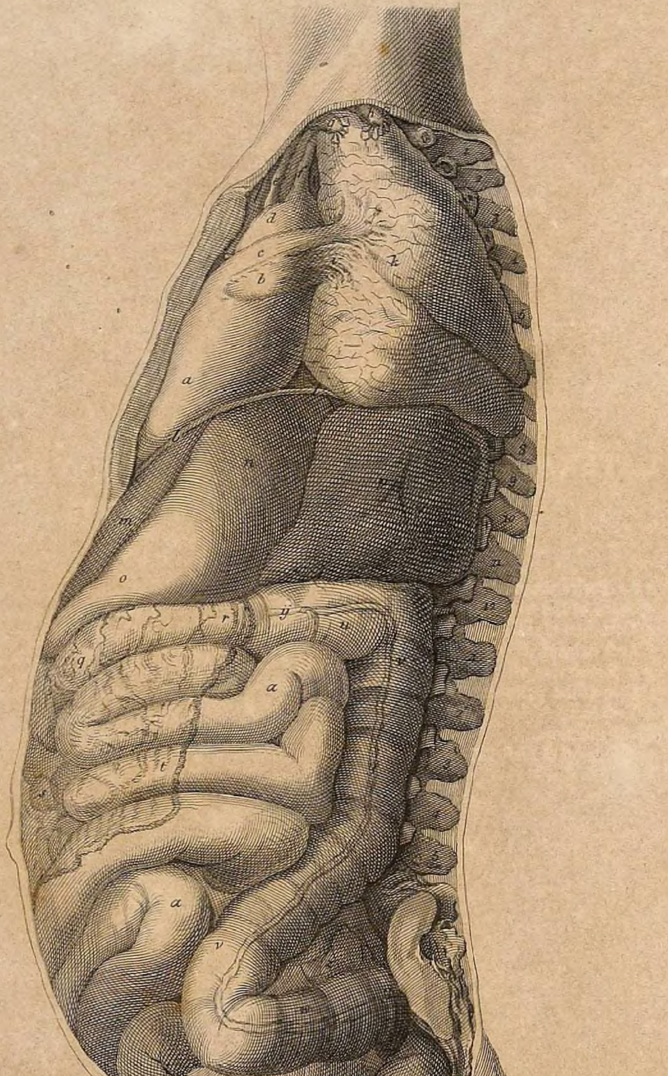
LATERAL VIEW OF THE THORACIC, ABDOMINAL, AND PELVIC VISCERA.—PLATE I.

a a b c d e e e e Common integuments.
f f Sternum.
g Right os pubis.
h h h Transverse processes of the dorsal vertebræ.
i i Transverse processes of the lumbar vertebræ.
k k Spinose processes of the dorsal vertebræ.
l l Spinose processes of the lumbar vertebræ.
m n o p Os sacrum.
q Os coccygis.
s s The left lung.
t The lower and anterior part of the pericardium.
u v w x y z α β γ δ ε The diaphragm.
ζ ζ ζ Small intestines.
η η η Colon.
θ Rectum.
ι Left kidney.
λ Prostate gland.
μ Vesicula seminalis.
ν Corpus cavernosum penis.
ξ Vena subclavia.
ο Arteria subclavia.
π π Arteria iliaca sinistra.
ρ ρ Vena iliaca sinistra.
σ σ Vasa spermatica.
τ τ Vas deferens.
υ υ Ureter.
φ Ischiatic nerve.

Lateral View of the Thoracic, Abdominal, and Pelvic Viscera.



J. Dadley Sculp.

London, Published by J. Johnson March 1. 1808.

LATERAL VIEW OF THE THORACIC, ABDOMINAL, AND PELVIC VISCERA.—PLATE II.

a b c Pericardium.
d Arch of the aorta.
e Common trunk of the right carotid and subclavian.
f Left carotid.
g h Subclavian artery and vein.
i One of the pulmonary veins.
k Left lung.
l l Diaphragm.
m Liver on the left side.
n o Stomach.
p Spleen.
q r s t Great omentum.
q r u v v w x Great intestine.
y y y y One of the ligamenta lata.
z Part of the mesocolon.
s t α α Small intestines.
β Bladder.
γ Prostate gland.
δ Vesicula seminalis.
ε Ureter.
ζ Corpus cavernosum.

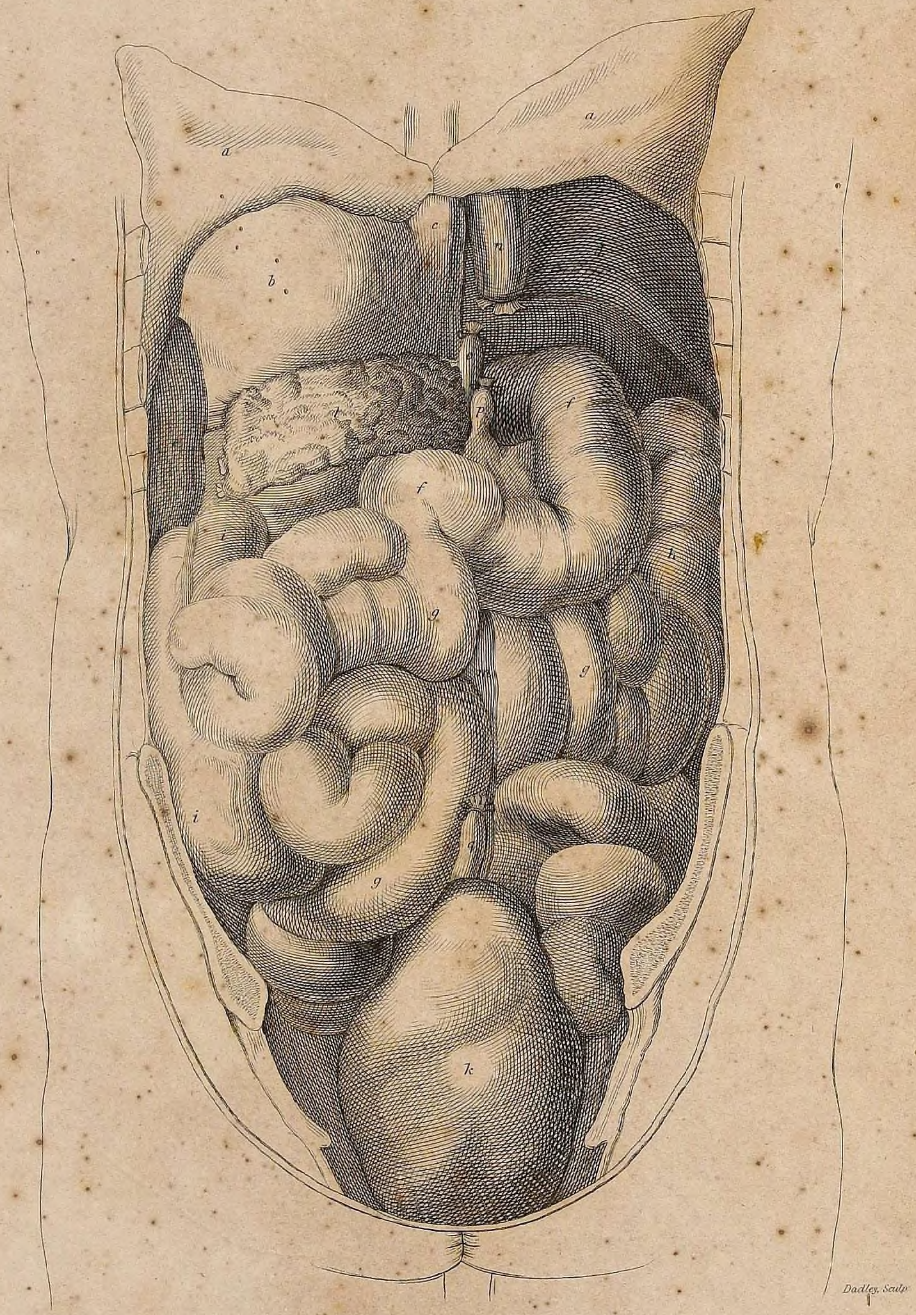
View of the Abdominal Viscera

London Published by J. Johnson March 1. 1808.

VIEW OF THE ABDOMINAL VISCERA.

A A B B The omentum.
C C The bottom of the stomach.
D D The liver.
E The suspensory ligament of the liver.
F The fissure made by the umbilical ligament.
G G The colon near its beginning.
H H H I I I The small intestines.
K K The cartilaginous ends of the false ribs cut from their bony parts and turned upwards.
L Inferior coronary vessels of the stomach.
M M Vessels running over the surface of the omentum derived from the inferior coronary vessels of the stomach.

Posterior View of the Abdominal Viscera.



Dadley, Sculp.

London, Published by J. Johnson March 1 1808.

POSTERIOR VIEW OF THE ABDOMINAL VISCERA.

a a Posterior part of the diaphragm reflected upward.
b Œsophagus.
c c Stomach.
d Liver.
e Spleen.
f f Duodenum.
g g g Small intestines
h i i k Large intestines.
l Pancreas.
m Part of the mesentery.
n Vena cava inferior.
o Arteria cœliaca.
p Arteria mesenteria superior.
q Branch of the inferior mesenteric artery.

View of the Omentum & the Intestines in their natural State.

London, Pub. by J. Johnson March 1.1808.

Joseph Skelton sculp.

A VIEW OF THE OMENTUM AND THE INTESTINES IN THEIR NATURAL STATE.

A A The hollow part of the liver turned back, so that the inferior part is now the anterior; and the anterior margin the superior.

B The gall bladder shorter than the liver, as in boys.

C The umbilical vein and fossa.

D The lobule of Spigelius, whose projection is visible through the omentum.

E The anterior curvature of the stomach seen through the vesicles of the inflated omentum.

F The right gastro epiploic artery and vein.

G The situation of the annulus of the pylorus.

H The top of the spleen, projecting forward in the cavity of the omentum situated between the stomach and the colon.

I The ligament which supports the spleen, different from that usually described, not closely attached to the spleen, but moving freely; generally at the upper part of the left, or rather of the transverse, mesocolon; connected with the peritonæum between the tenth and twelfth rib. The omentum is lost in this ligament.

K The OMENTUM MAJUS or GASTROCOLICUM, terminated anteriorly, and above by the whole curvature of the stomach; posteriorly and below by the greater portion of the transverse colon. In boys it descends only the umbilicus; in adults lower, and in fat persons sometimes to the pubes. It is terminated on the left by the middle of the spleen, which receives the vessels, and by the ligament I; on the right at the line L.

L The line of separation of the omentum from the mesocolon.

M The origin of the omentum gastrocolicum from the anterior curvature of the stomach, from which the anterior lamina proceeds.

N The conglobate glands adjacent to the origin of the omentum.

O The posterior lamina, or the origin of the great omentum from the colon.

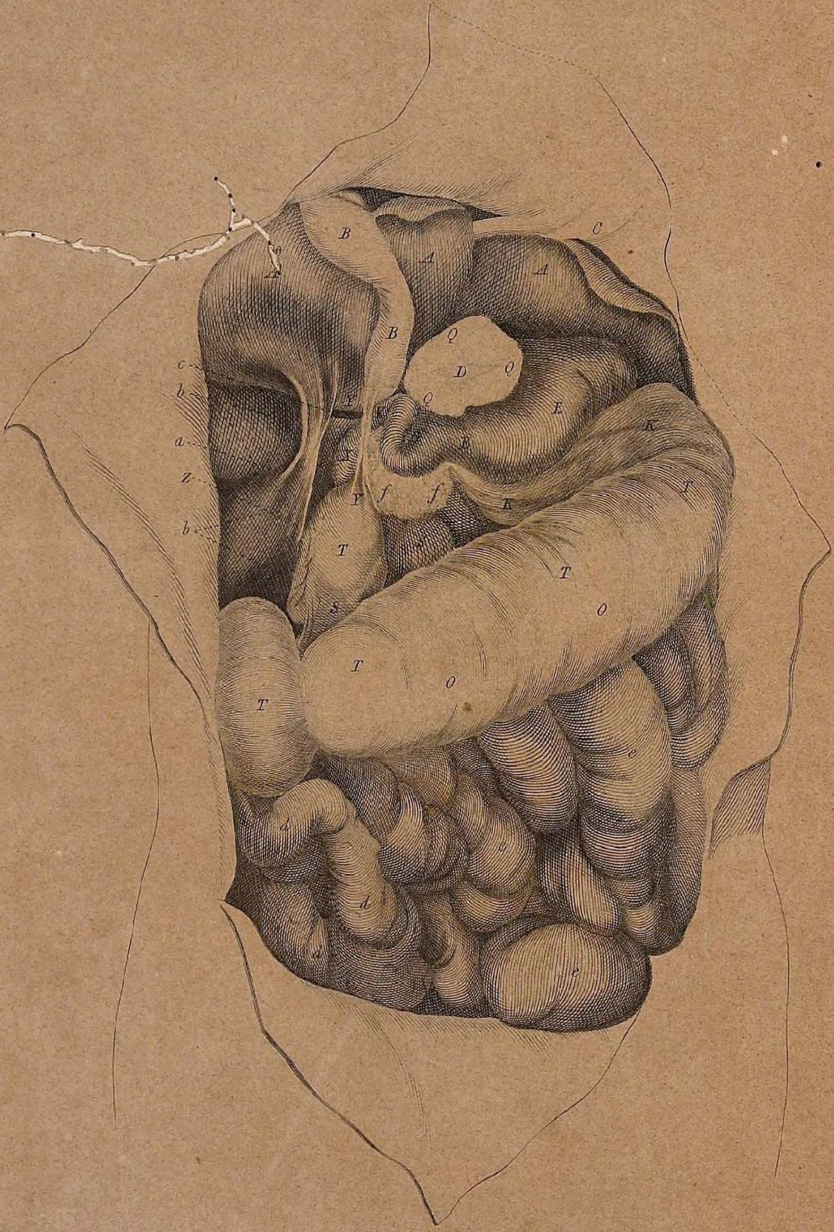
P The blind termination of the omentum on the right side.

Q Q Q Q The OMENTUM MINUS of Winslow.

R OMENTUM COLICUM, a constant appendix of the omentum magnum, which from the termination of the line L to the termination of the transverse mesocolon, and sometimes farther, proceeds in a double line from the colon only without touching the stomach. It resembles the omentum magnum, equally floating on the intestines, and elegantly terminated by a small lobule.

S Part of the mesocolon between the right termination of the omentum magnum and the connection of the colon with the duodenum.

Omentum. No. 2



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OMENTUM.—No. 2.

General appearances as in N° 1.; but each omentum collapsed, and the colon drawn down, so that the celebrated passage of the omentum is conspicuous.

A A The hollow part of the liver turned back, so that the anterior parts are now above.

B B The gall-bladder.

C The umbilical vein.

D The lobule of Spigelius, seen through the omentum minus.

E E The stomach, almost empty, whose lesser curvature the lobulus of Spigelius enters. Its anterior plane surface covers the left lobe of the liver.

G The pylorus, from which the first flexure of the duodenum rises, turning a little backward.

K K The gastro-colic omentum collapsed.

O O The line in the colon, from whence the gastro-colicum and colicum proceed.

Q Q Q The lesser omentum.

S S Parts of the mesocolon. At the left (S) part of the second transverse duodenum shines through.

T T T Different parts of the colon.

V The second flexure of the duodenum almost transverse, on which the gall-bladder rests.

X The third flexure, or the descending portion, which receives the ductus choledochus.

Y The ligament, or membranes, which pass to the colon, beyond the duodenum, and which serve for its external membrane, adhering to it in some parts.

Z *a* The hepatic renal ligament, or the duplicature of the peritonæum ascending from the kidney to the liver.

Z Its left termination.

a Its right.

b b The right kidney, covered by the peritonæum.

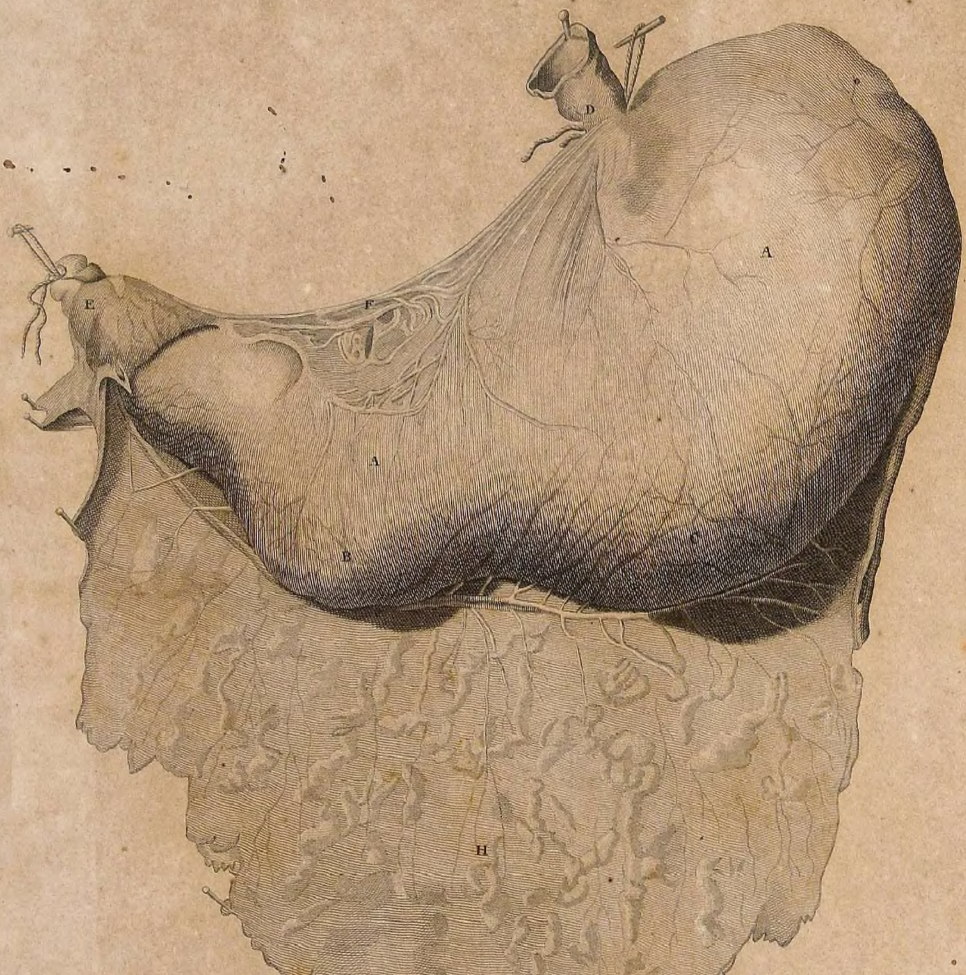
c The celebrated passage of Winslow, between the hepato-colic and the hepato-renal ligaments, then between the lobe of the liver, and the nearest side of the duodenum. The pancreas, drawn aside, renders it lunated, and gives it the appearance of being bent round the liver.

d d The colon with its fatty appendices.

e e The small intestines.

f f Part of the pancreas, which insinuates itself between the flexure of the duodenum.

View of the Stomach.



London, Published by J. Johnson, March 1 1808.

VIEW OF THE STOMACH.

A Anterior surface of the stomach.
B Enlargements in the lower part.
D Part of the gula at the upper orifice.
E Part of the duodenum arising from the lower orifice of the stomach or pylorus.
F Superior coronary blood-vessels and branches of the eighth pair of nerves.
G Inferior coronary vessels.
H Omentum.

Plate I.

Lymphatics of the Lower Extremities.

James Basire sculp.t

Published Feb.y 1.st 1801, by J. Johnson, S.t Pauls Church Yard.

LYMPHATICS OF THE LOWER EXTREMITIES.

FIG. 1.

Exhibits the more superficial Lymphatic Vessels of the lower Extremity.

A The spine of the *os ilium.*
B The *os pubis.*
C The iliac artery.
D The knee.
E.E.F Branches of the crural artery.
G The *musculus gastrocnemius.*
H The *tibia.*
I The tendon of the *musculus tibialis anticus.*

On the Out-lines.

a A lymphatic vessel belonging to the top of the foot.
b Its first division into branches.
c.c.c Other divisions of the same lymphatic vessel.
d A small lymphatic gland.
e The lymphatic vessels which lie between the skin and the muscles of the thigh.
f.f Two lymphatic glands at the upper part of the thigh below the groin.
g g Other glands.
h A lymphatic vessel which passes by the side of those glands without communicating with them; and, bending towards the inside of the groin at (i), opens into the lymphatic gland (k).
l.l Lymphatic glands in the groin, which are common to the lymphatic vessels of the genitals and those of the lower extremity.
m.n A plexus of lymphatic vessels passing on the inside of the illiac artery.

N.B. The lymphatic vessels appear in these plates more regularly cylindrical than they are represented by *Nuck*, *Ruysch*, and others, in whose plates such vessels are painted more like chains of vesicles than I have ever seen them.

FIG. 2.

Exhibits a back View of the lower Extremity, dissected so as to shew the deeper seated Lymphatic Vessels which accompany the Arteries.

N.B. This extremity was dried before the plate was made from it, and the muscles are therefore much shrunk.

A The *os pubis.*
B The tuberosity of the *ischium.*
C That part of the *os ilium* which was articulated with the *os sacrum.*
D The extremity of the iliac artery appearing above the groin.
E The knee.
F.F The two cut surfaces of the *triceps* muscle, which was divided to show the lymphatic vessels that pass through its perforation along with the crural artery.
G The edge of the *musculus gracilis.*
H The *gastrocnemius* and *soleus*, much shrunk by being dried, and by the *soleus* being separated from the *tibia* to expose the vessels.
I The heel.
K The sole of the foot.
L The superficial lymphatic vessels passing over the knee, to get to the thigh.

On the Out-lines.

M The posterior tibial artery.
a A lymphatic vessel accompanying the posterior tibial artery.
b The same vessel crossing the artery.
c A small lymphatic gland, through which this deep seated lymphatic vessel passes.
d The lymphatic vessel passing under a small part of the *soleus* which is left attached to the bone, the rest being removed.
e The lymphatic vessel crossing the popliteal artery.
f.g.h Lymphatic glands in the ham, through which the lymphatic vessel passes.
i The lymphatic vessel passing with the crural artery through the perforation of the *triceps* muscle.
k The lymphatic vessel, after it has passed the perforation of the *triceps*, dividing into branches which embrace the artery (l).
m A lymphatic gland belonging to the deep-seated lymphatic vessel. At this place those vessels pass to the fore part of the groin, where they communicate with the superficial lymphatic vessels.
n A part of the superficial lymphatic vessels appearing on the brim of the *pelvis.*

Lymphatics of the Upper Extremities Plate II.

Published Feb.y 1.st 1800, by J. Johnson, St. Pauls Church Yard.
James Basire sculp.t

LYMPHATICS OF THE UPPER EXTREMITIES.

Fig. 1.

Exhibits a back View of the fore Arm and Hand. The Preparation from which this View was taken having been previously dried, the Muscles appear very slender.

A The hand.
B The lower extremity of the *radius*.
C The lower extremity of the *ulna*.
D The muscles on the back of the fore arm turned aside to exhibit a deep-seated lymphatic vessel, which perforates the interosseous ligament to get to the fore part.
E The *olecranon*.

On the Out-lines.

a.a.a Lymphatics appearing on the back of the fore arm immediately under the skin.
b Some of the lymphatics bending over the upper extremity of the *radius* to get to the fore part of the arm.
c A lymphatic passing over the *ulna*, immediately under the *olecranon*, and under the inner condile of the *os humeri*, to get to the fore part of the arm.
d A lymphatic which has penetrated the muscles, perforates the interosseous ligament, and passes to the fore part of the arm near the radial artery.

Fig. 2.

Exhibits a fore View of the upper Extremity. This Plate was likewise made from a dried Preparation, and the Muscles therefore appear very small. It has a Peculiarity in the ulnar Artery running over the Muscles instead of under them.

A The *scapula*.
B The clavicle.
C The extremity of the brachial artery.
D The muscles lying on the inside of the arm.
E The inner condyle of the *os humeri*.
F The lower extremity of the *radius*.

On the Out-lines.

a A lymphatic vessel which lies in the cellular membrane immediately under the skin, and passes up on the inside of the arm to the axillary glands.
b Superficial lymphatic vessels passing over the muscles from the back of the fore arm, and likewise over the *biceps* to the glands in the *axilla*.
c A superficial lymphatic from the back of the fore arm.
d A gland through which it passes.
e The lymphatics from the anterior and the posterior part of the fore arm uniting.
f.f Lymphatic glands in the *axilla*.
g A deeper seated lymphatic vessel lying close to the radial artery which it accompanies all the way to (h).
h The deep seated lymphatic vessel passing under the interosseous and ulnar arteries, and appearing again on the arm at (i).
i The deep seated lymphatic vessel lying close to the brachial artery.
k.k Two small lymphatic glands through which it passes.
l The same vessels now become much larger, and passing under a branch of the artery and some cellular membrane, appearing at (m).
m The trunk of the deep seated lymphatic vessels passing upwards to the *axilla*, where it enters the glands, f.f.
f.f Three axillary glands, which are common both to the superficial and the deep seated lymphatic vessels.

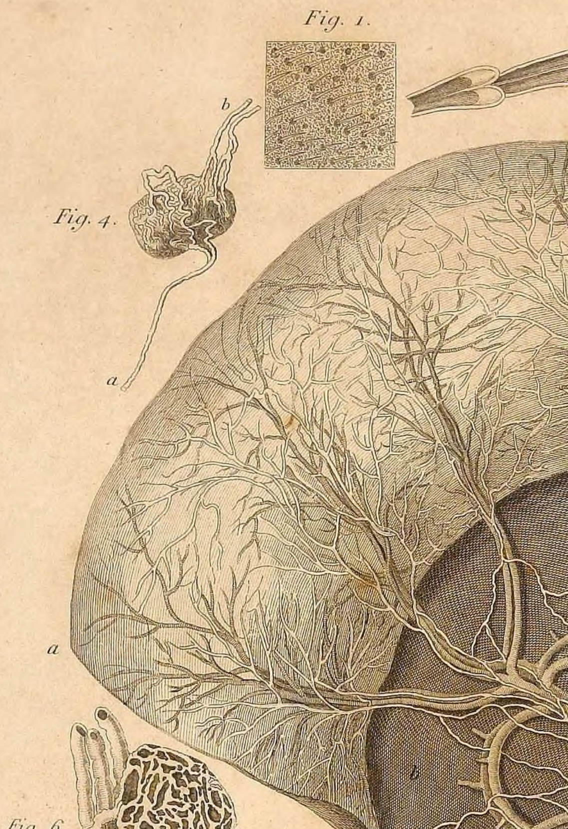
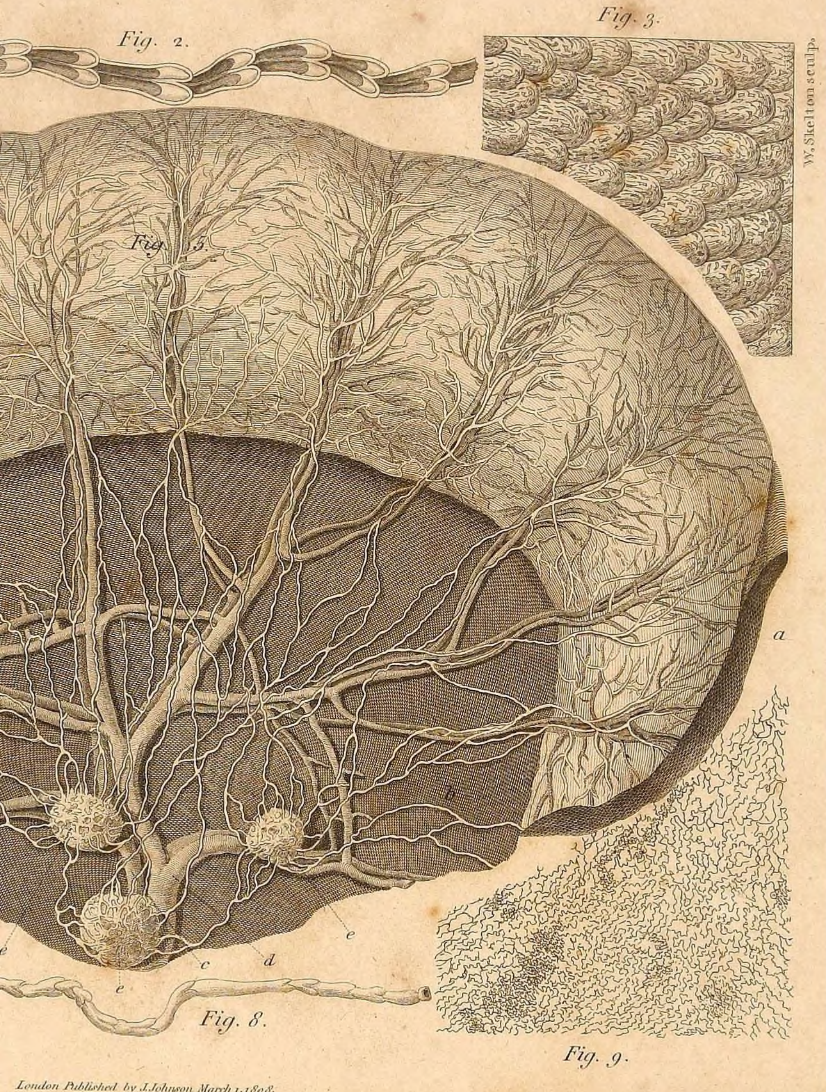


Fig. 1.
Fig. 4.
b
a
a
b
Fig. 6.
Fig. 7.

Absorbents



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ABSORBENTS.

PLATE I.

FIG. 1.

A portion of skin where it is covered with hair. The sanguineous vessels surrounding each hair, where it passes out of the skin, and forming, as it were, a little elevated circle.

FIG. 2.

Large lymphatic vessel laid open longitudinally to show its valves.

FIG. 3.

Magnified view of the internal surface of the jejunum after a successful injection.

FIG. 4.

External view of a lymphatic gland.
a A lymphatic vessel entering the gland.
b Two lymphatic vessels passing out.

FIG. 5.

Portion of jejunum, with its mesentery, from a person who died shortly after eating, and whose lacteals were filled with chyle.
a a Portion of jejunum
b b Mesentery.
c Trunk of the superior mesenteric artery.
d Trunk of the mesenteric vein.
e e e Three mesenteric glands.

FIG. 6.

Internal appearance of a lymphatic gland.

FIG. 7.

Internal surface of the colon magnified.

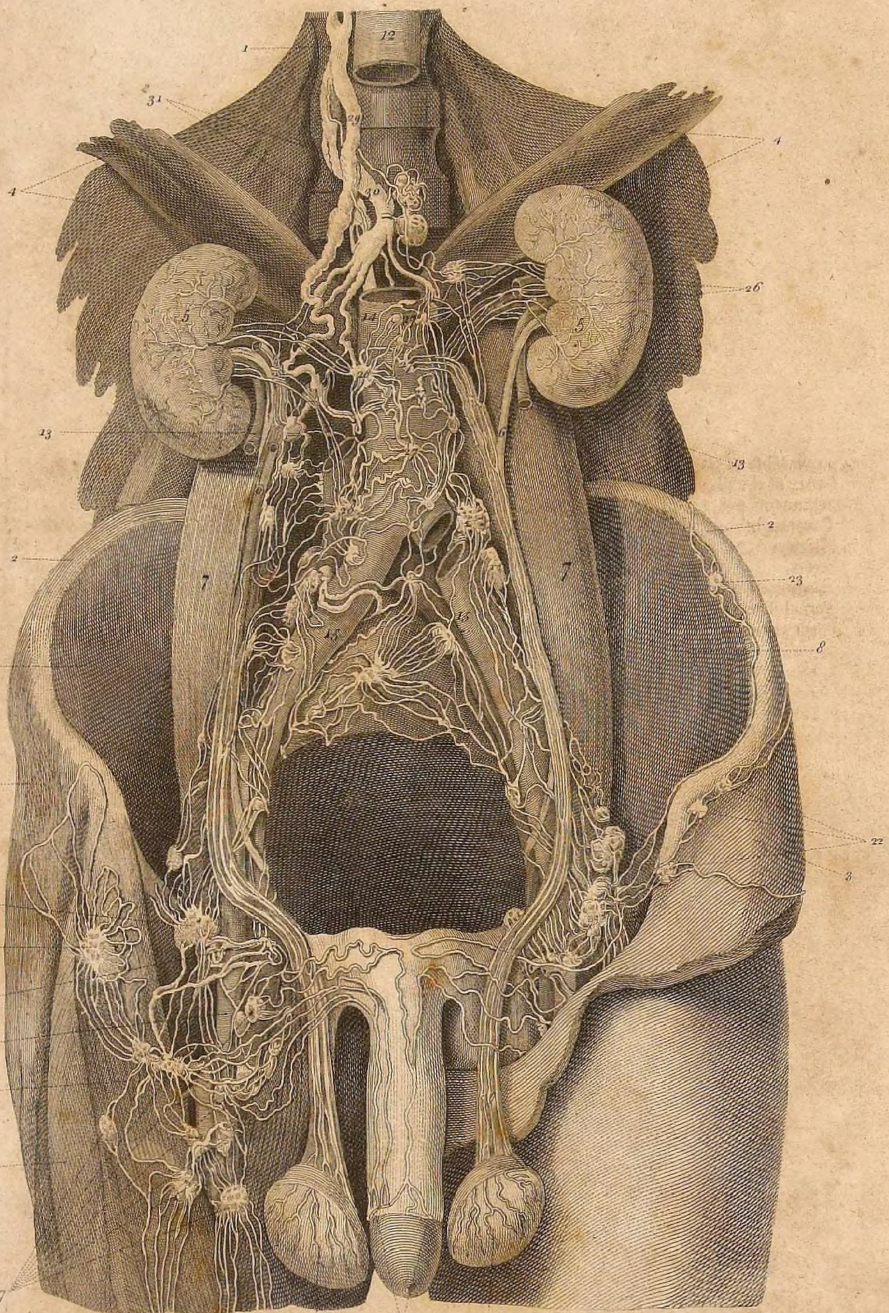
FIG. 8.

The external appearance of a lymphatic trunk.

FIG. 9.

Part of the peritoneum of a man into whose abdominal cavity a black liquid had been injected, when the peritoneum appeared to be every where covered with black spots, from which vessels of rather a large size proceeded, forming a net-work; the black spots themselves, viewed in a microscope, plainly consisted of the smallest vessels filled with a black injection.

Absorbents. _ View of the Deep seated Lymphatics of the Abdomen, &c.



W. Skelton sculp.

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ABSORBENTS.

DEEP-SEATED LYMPHATICS OF THE ABDOMEN.

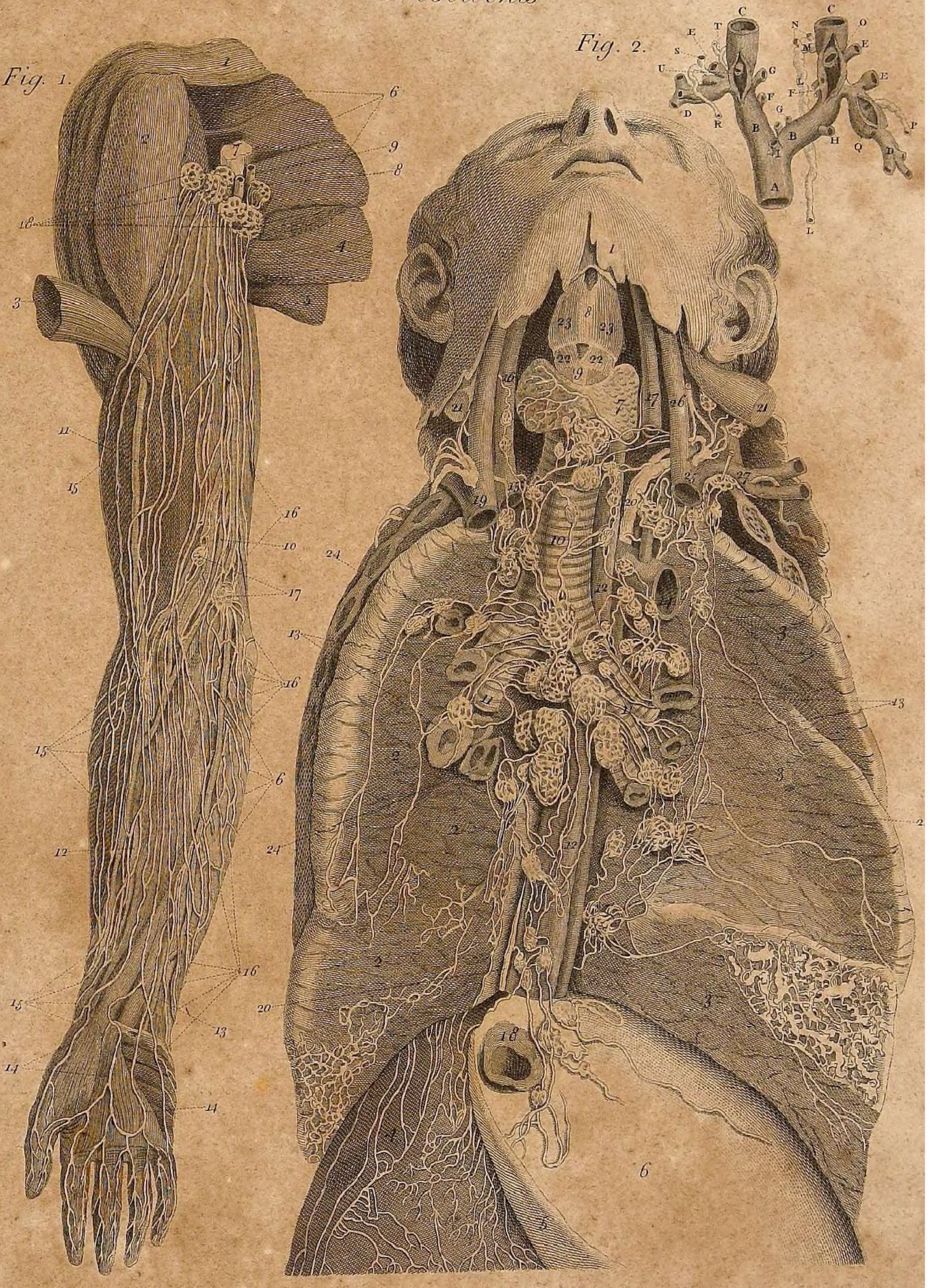
PLATE II.

1 Last vertebra of the back.
2 2 Crista of the ilium.
3 Integuments and abdominal muscles turned back.
4 4 Diaphragm turned back.
5 5 Kidneys.
6 Ureters.
7 Psoas muscle on each side.
8 Internal iliac muscles.
9 Tensor vaginæ femoris.
10 Sartorius.
11 Rectus cruris.
12 Aorta cut off.
13 Emulgent arteries.
14 Lower portion of the aorta.
15 Common iliac trunks.
16 External iliac.
17 Inguinal glands.
18 Superficial lymphatic trunks from the lower limb, terminating in the inferior inguinal glands.
19 Branches on the dorsum of the penis terminating in the inguinal glands.
20 Superior inguinal glands.
21 Glands lying under Poupart's ligament.
22 Three glands which receive the lymphatics from the peritoneum and abdominal muscles.
23 Gland lying upon the crista of the ilium.
24 Glands lying between the trunk of the common iliac and the psoas muscle.
25 25 The testicles: the lymphatics are seen on their surface, afterwards passing up the spermatic cord, and terminating on the left side chiefly in the glands marked 27, on the right side chiefly in the glands marked 28.
26 Glands lying on the outside of the aorta near the left kidney.
27 Glands lying upon the aorta.
28 Glands lying between the aorta and vena cava.
29 A great trunk formed by the junction of several of the larger trunks coming from the glands behind the cava and the glands between the cava and aorta; this trunk uniting with another large trunk above the last vertebra of the back, forms the commencement of the thoracic duct.
30 The other great trunk which, uniting with the preceding one, forms the thoracic duct.
31 A third great trunk coming from the glands behind the aorta.

Absorbents

Fig. 1.

Fig. 2.



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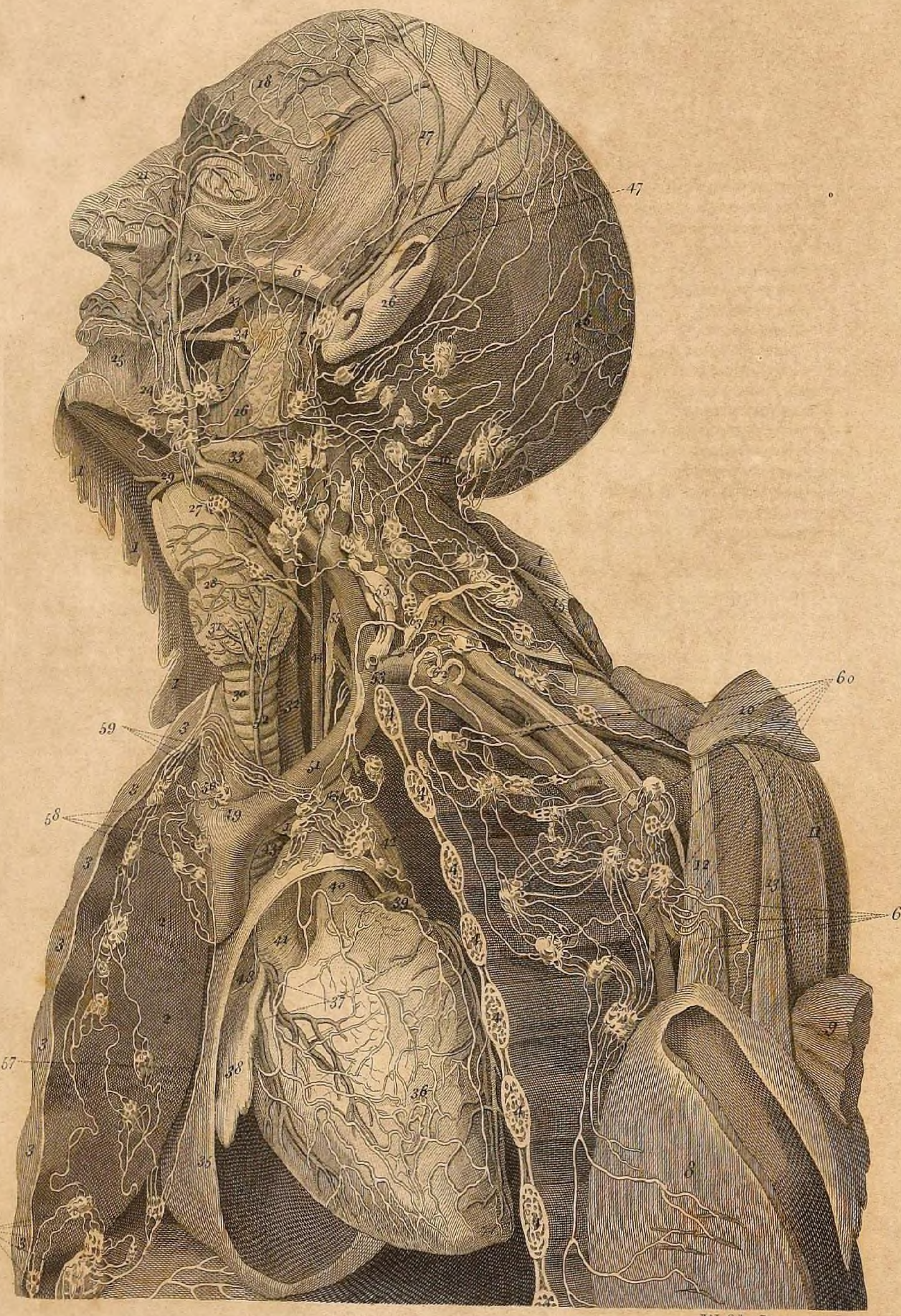
Absorbents of the upper part of the Body.



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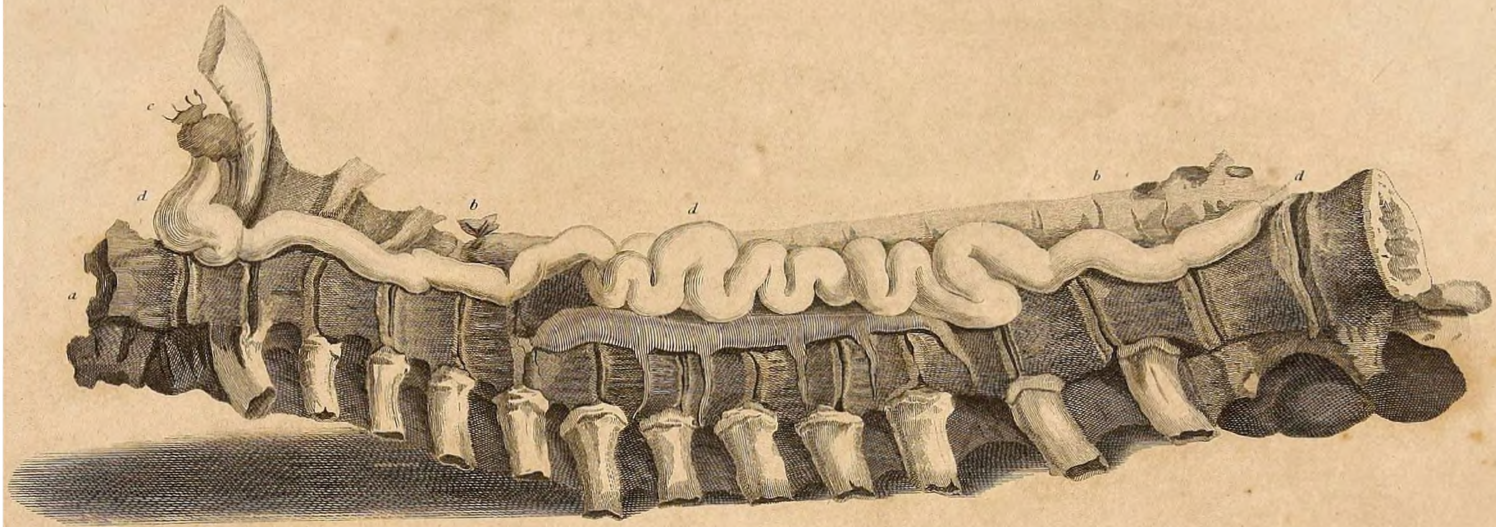
ABSORBENTS OF THE UPPER PART OF THE BODY.

1 Integuments dissected and thrown back.
2 2 The sternum with the cartilages of the ribs of the left side turned towards the right side.
3 3 3 Cartilages of the left ribs attached to the sternum.
4 4 The cut surfaces of the cartilages of the left ribs attached to the ribs.
5 Coracoid process.
6 Zygomatic process.
7 The condyle of the lower jaw.
8 The left breast dissected from the pectoral muscle, and turned back.
9 Pectoralis major.
10 Pectoralis minor.
11 Deltoides.
12 Short head of the biceps.
13 Long head of the same muscle.
14 Subscapularis.
15 Trapezius.
16 Masseter.
17 Temporal muscle.
18 Frontalis.
19 Occipitalis.
20 Orbicularis palpebrarum.
21 Compressor narium.
22 Levator labii superioris alæque nasi.
23 Zygomaticus major.
24 Depressor anguli oris.
25 Depressor labii inferioris.
26 The ear turned forward.
27 Thyroid cartilage.
28 Cricoid cartilage.
29 Base of the os hyoides.
30 Trachea.
31 Thyroid gland.
32 Œsophagus.
33 Submaxillary gland.
34 Parotid gland and duct going to the mouth.
35 Pericardium.
36 Heart.
37 Branches of the coronary arteries and veins.
38 Right auricle.
39 Left auricle.
40 Pulmonary artery running behind the aorta.
41 Aorta.
42 Arch of the aorta.
43 Right subclavian artery.
44 Left carotid artery.
45 Left subclavian artery.
46 Occipital artery.
47 Temporal artery.
48 Part of the vena cava superior contained within the pericardium.
49 Division of the superior cava.
50 The right subclavian vein.
51 The left subclavian vein.
52 Inferior thyroid vein.
53 Junction of the left subclavian and internal jugular veins.
54 Part of the plexus of brachial nerves.
55 Thoracic duct.
56 Lymphatic glands situated in the lower part of the anterior mediastinum, of which the lowermost receive the lymphatic vessels coming from the diaphragm, from which first glands the vessels are again seen passing to the next glands: one of these glands lies close to the pericardium.
57 A lymphatic vessel arising from the forementioned glands, and going to glands lying about the superior cava. This trunk receives branches from the pericardium and mediastinum.
59 Trunks coming from the *glands*, N° 58, which, running along the right subclavian vein, enter the inferior glands of the neck.
60 Axillary glands.
61 Lymphatic vessels from the superior part of the arm going to the axillary glands.
62 Two lymphatic trunks from the superior axillary glands, which empty themselves into the subclavian vein, just before its junction with the internal jugular.
63 A large lymphatic trunk, receiving chiefly the trunks from the glands about the superior and posterior part of the neck, and terminating in the thoracic duct just before its entrance into the veins.

An Extraordinary Thoracic Duct.



AN EXTRAORDINARY THORACIC DUCT,

Introduced in this place to show its situation, and the size discovered in this subject. It differs only from the duct in its usual state by the size, and the serpentine form; an appearance found in the arteries, during the systole of the heart, which it also represents.

It is seen in situ, with the more immediately surrounding parts.

The spine is cleaned by dissection, and dried; in consequence of which the intervertebral substances are shrunk, perhaps to one-twelfth of their original thickness.

The aorta, vena azygos, and lower portion of the left internal jugular vein, with that portion of the left subclavian vein which forms a right angle with it, are seen as half distended with coarse injection, and dried. The property of coarse injection is, that it loses little or nothing of its original fluid bulk by becoming solid, or even by drying.

The thoracic duct is seen under the same circumstances as the last-mentioned vessels, particularly as little more than half distended with the injection; but we were so long in doubting and examining, that, by the time we began to inject this vessel, it could not bear force, and we were fearful of losing it by bursting it.

a The spine, as above described.

b.b The aorta, as above described.

c The jugular vein, forming an angle with the subclavian, under the circumstances above described.

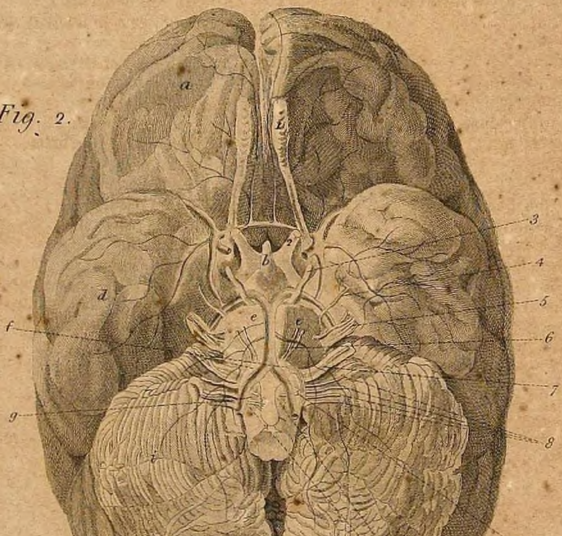
d.d.d The thoracic duct, as above described.

Vertical Section of the Brain.

Fig. 1.

Base of the Brain.

Fig. 2.



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VERTICAL SECTION OF THE BRAIN MADE THROUGH ITS MIDDLE.

Fig. 1.

A Anterior lobe of the cerebrum.
B Middle lobe.
C Posterior lobe.
D Cerebellum.
E E E An appearance which the medullary part of the cerebellum in this section makes, called cerebri vita.
F Corpus callosum.
G Septum lucidum.
H Anterior commissure.
I Foramen commune anterius.
K Tubercula quadrigemina.
L Iter ad infundibulum.
M Pituitary gland.
N Pineal gland.
O Peduunculi of the pineal gland.
P Commissura posterior.
Q Iter ad quartum ventriculum.
R Quartus ventriculus.
S Valvula vieussenii.
T Tuber annulare.
U Medulla oblongata.

Fig. 2.

View of the base of the brain.

1 First pair of nerves, or olfactory.
2 Second pair, or optic.
3 Third pair, or motores oculorum.
4 Fourth pair, or trochleares.
5 Fifth pair, or trigemini.
6 Sixth pair of nerves.
7 Seventh pair, or auditory nerves.
8 Eighth pair.
9 Ninth pair, or laryngeal nerve.
a Anterior lobe of the brain.
b Infundibulum.
c Corpora albicantia.
d Middle lobe of the brain.
e Pons varolii.
f Corpora pyramidalia.
g Corpora olivaria.
h Medulla oblongata.
i Cerebellum.
k Posterior lobe of the cerebrum.

The arteries at the base of the brain are obvious on inspection, and only introduced to show their situation and connection.

Views of the Eye. N.o 1.

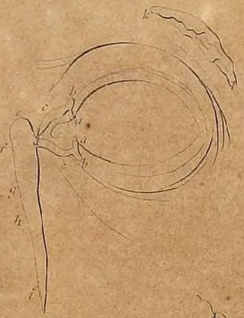

Fig. 1.

Fig. 2.

Fig. 3.

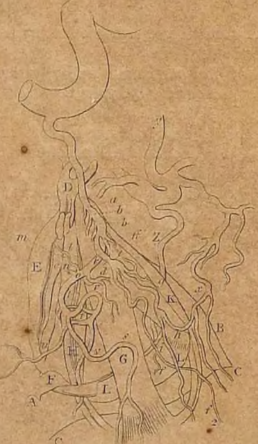

Fig. 4.

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VIEWS OF THE EYE.—NUMBER I.

FIGURE 1.

a b c d The superior and inferior lachrymal canal, or the parts of the lachrymal duct belonging to the eyelids.

a The mouth of this canal, beginning at the punctum lachrymale.

b Its blind portion.

c Continuation of the canal.

d Its termination in the lachrymal sac.

e f g The lachrymal sac.

e The blind portion of the sac.

f Its middle part.

g It termination.

h i The nasal portion of the lachrymal duct.

i The lower mouth, or termination of the lachrymal duct.

FIG. 2.

The eyelids of an adult on the right side separated, and their posterior surface exposed to view, also the lachrymal gland, which, being turned a little forwards, has its anterior point covered by the membrana conjunctiva.

In the natural situation of the parts this is the lower surface of the lachrymal glands.

a Part of the sphincter muscle of the eyelids on the inside, or that side which is turned towards the bone.

b The chink of the eyelids.

c The lachrymal gland from below, so that its small part is covered by the membrana conjunctiva.

d Division of the lachrymal gland into two principal lobes.

e Excretory ducts of the lachrymal gland.

f The little mouths of these ducts in the membrana conjunctiva.

g The membrana conjunctiva which lines the eyelids. That part which is remarkable for its loose and folded appearance is the lap which has been separated from the bulb.

h The sebaceous glands of the upper eyelid shining through the membrana conjunctiva.

i The superior punctum lachrymale, that is, the mouth of the superior lachrymal duct.

k Sebaceous glands of the lower eyelid shining through the membrana conjunctiva.

l The inferior punctum lachrymale, viz. the mouth of the inferior lachrymal duct.

m The caruncle.

n The semilunar fold which was turned back with the membrana conjunctiva separated from the bulb.

FIG. 3.

Shows the distribution of the left ophthalmic artery as it occurs when the muscles, together with the bulb, are kept in their places, excepting the levator of the upper eyelid, and the musculus rectus superior.

A B C D The orbit.

A The inside of the left orbit.

B Its outside.

C C Its lower margin.

D The canal of the optic nerve filled with the nerve and cellular membrane.

E The levator palpebræ superioris dissected and laid back.

F G The musculus rectus superior oculi, whose posterior part, F, is dissected and laid back; G is its anterior part.

H Musculus rectus internus oculi.

K Musculus rectus externus oculi.

L The optic nerve, which is shown in this plate entirely bare.

M The bulb of the eye.

N O P The carotid artery. N, The part of this artery contained in the petrous portion of the temporal bone. N O, Part of it in the cellular sinus. P, Part which properly belongs to the brain.

Q The opqthalmic artery arising from the carotid.

Q R Its curvature, which is always found just after its commencement.

R The place where it goes to the outside of the optic nerve. It principal branches are,

a The first long ciliary artery.

b Two other ciliary arteries.

c The artery of the lachrymal gland. This is divided into

d the ciliary branch, which goes off from the inside of this artery

e into the muscular branch, more delicate for the musculus rectus externus, and into

f a branch which goes below the bulb to the musculus obliquus inferior.

ff A larger muscular branch for the musculus rectus externus.

g h The division of the little trunk of the artery of the lachrymal gland into the branch (*h*), which anastomoses with a twig of the internal maxillary artery (*x*): also into

i the branch which is distributed over the lachrymal gland and upper eyelid.

k The continuation of the ophthalmic artery, which comes out transversely under the optic nerve.

l The branch which is divided into the twig for the musculus obliquus superior, as appears from the following figure (*m*), and into the branch for the levator palpebræ superioris.

o p A branch of the same artery, which divides into a twig for the musculus rectus superior, and into

q the ciliary twig.

VIEWS OF THE EYE.—NUMBER I.

r A double branch for the musculus rectus inferior.
The trunk of the ophthalmic artery while it bends round in a serpentine manner, sends out.

s Arteria frontalis.

t t The artery for the musculus rectus internus, which for the most part surrounds its flesh.

u The anterior artery of the nose, or the arteria anterior ethmoidea.

v The arteria trochlearis inferior.

w The anterior branch of the artery dissected (*p*), which runs out into the musculus rectus superior.

x A twig of the arteria temporalis profunda, arising from the internal maxillary artery.

Fig. 4.

A continuation of the former figure, so as to expose at one view the whole distribution of the branches of the ophthalmic artery, the bulb of the eye being removed.

A The inner wall of the left orbit.

B Its outer wall.

C C Its lower edge.

D The canal of the optic nerve, round which are found the remains of the levator palpebræ superioris, and of the rectus superior, cut off and bent inwards.

E The musculus obliquus superior oculi, which, with its tendon (F), passes through the trochlea, or pulley (F), and is seen without the orbit, removed a little on one side.

G The musculus rectus oculi inferior.

H The musculus rectus oculi internus.

K The musculus rectus oculi externus.

L L The musculus obliquus oculi inferior.

a b c d e f ff g h i k o r s t u v x The same branches which these letters mark in the former figure, the following remain to be marked.

a b b are cut off, to preserve perspicuity, after the removal of the optic nerve.

c The arteria lachrymalis is separated a little inwards, that

d the relations of the branch (*d*), which is here seen cut off, and (*e*) may more easily be viewed, since both

e in the first figure were partly covered by the trunk of the lachrymal artery (*c*).

f The branch for the inferior oblique muscle comes entirely into view.

f 2 The branch continued on for the inferior oblique muscle entering the lower lid.

k The trunk of the ophthalmic artery appears here very plain, the optic nerve being removed.

l m A branch going to the superior oblique muscle.

n The branch going on towards the superior oblique muscle.

o is here cut off, hence *p q* of the last figure are here wanting.

t t The branch scattered through the internal strait muscle; it can be seen much better after the branch (*r*) is removed a little higher up.

x The origin of this branch from the internal maxillary artery (*y*) is here more plainly seen.

y The trunk of the internal maxillary artery.

z The infra-orbital artery, a constant twig of this internal maxillary artery.

Views of the Eye. No. 2

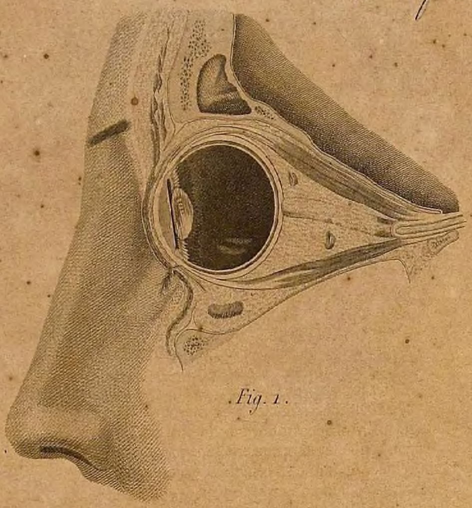


Fig. 1.

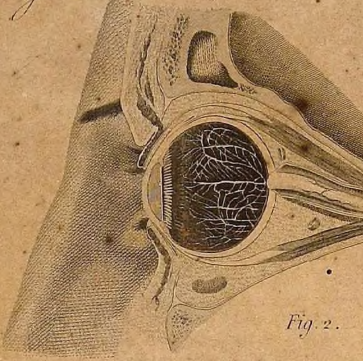
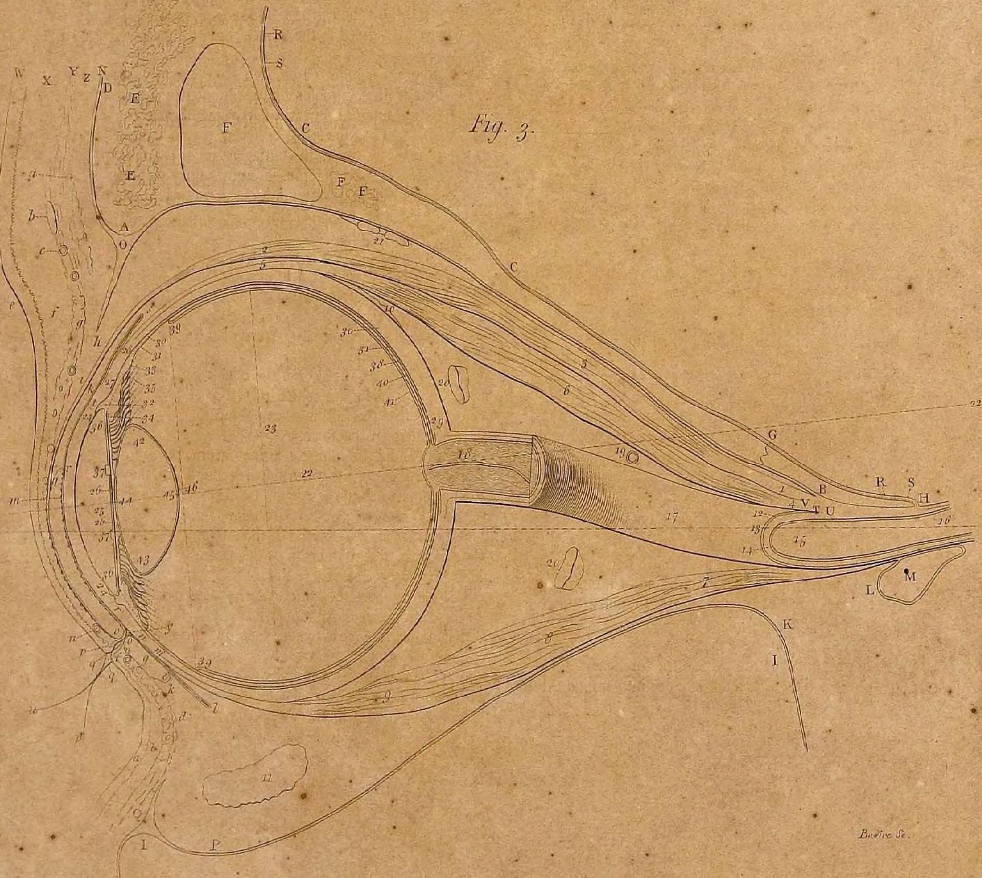


Fig. 2.

Fig. 3.



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VIEWS OF THE EYE.—NUMBER II.

Fig. 3.

The left organ of sight, being a side view taken from a perpendicular section, the eyelids being shut.

A Q The bony orbit.

A H The superior wall of the orbit.

A B The left surface of this wall which looks towards the orbit.

C C G H The convex surface of it, opposite to the brain, whose depressions and eminences answer to the convolutions of the anterior lobe of the brain lodged upon it.

A D E F The frontal part of the os frontis.

C C G The orbital part of the same bone.

E E Medullary cells of the frontal part.

F The left frontal sinus.

F F Medullary cells of the orbital part.

G The suture between the os frontis, and the greater wing of the sphenoid bone.

G B H The part of the superior or lesser wing of the sphenoid bone which forms the roof of the canal for the optic nerve.

Q M The lower wall of the orbit.

I I The maxilla superior.

K L The orbital fissure, or foramen lacerum in basi cranii filled with tendinous fibres, fat, vessels, and nerves.

M The part of the superior or lesser wing of the sphenoid bone which forms the floor of the canal for the optic nerve.

L The periosteum.

B H M The canal in the lesser wing of the sphenoid bone, for the optic nerve.

N The periosteum of the os frontis.

O Continuation of the periosteum of this bone, towards the upper eyelid into an arch almost tendinous.

P The periosteum of the maxillary bone.

Q Continuation of the periosteum of this superior maxillary bone, towards the lower eyelid, into an arch almost tendinous.

* * The axis of the cone of the orbit.

R V The membrana dura of the brain, which lines the insides of the os frontis and sphenoid bone.

R The external lamina of the dura mater.

S The internal lamina of the dura mater.

T U V The place where the dura mater adheres;

T Partly with the periorbita;

U Partly with the sheath of the optic nerve;

V Partly with the cellular membrane of the tendon of the levator palpebræ superioris (1), and of the musculus rectus superior (4).

W Z The forehead.

W The thickness of the skin in the forehead.

X The fat between the skin and occipito-frontalis muscle.

Y The frontal muscle.

Z The fat between the frontal muscle, and the periosteum.

a d The eyebrow.

a The corrugator supercilii.

b The mouth of the frontal vein.

c The mouth of the frontal artery.

d The hairs of the eyebrow.

e w The upper eyelid.

e The thin skin of the forehead.

f The fat before the sphincter palpebrarum which gradually disappears towards the margin.

g The sphincter palpebrarum.

h The fat behind the sphincter palpebrarum, which also gradually disappears towards the margin.

i The tendon of the levator palpebræ superioris.

k A thin cellular texture between this tendon and the membrana conjunctiva.

l The cartilage of the upper eyelid.

m Vestiges of the sebaceous follicles.

r r s t The membrana conjunctiva of the upper eyelid,

r r where it lines the cartilage and sebaceous glands;

r s where it is affixed to the tendon by a thin cellular web;

r k s t where it is reflected on itself;

s s t where it lines the sclerotic membrane of the bulb.

y r 24 *s* The superior bursa of the membrana conjunctiva, (*k*), the space between its two laminæ, of which one covers the bulb, the other the upper eyelid: thiss pace is represented by a thickish black line,because the laminæ themselves touch each other.

o p q The edge of the upper lid.

o The internal thinner lip of this edge.

p The external thicker lip of it.

q The place where the cuticle of the face passes into the membrana conjunctiva of the upper lid.

u The upper eyelash.

n The mouth of the coronary artery of the upper lid.

a q The lower eyelid.

a The thickness of the skin of the cheek which passes into the tender skin of the lower lid.

b The fat before the sphincter palpebrarum.

c The sphincter palpebrarum.

d The fat behind the sphincter palpebrarum.

g e The cartilage of the lower lid. A rough line shews the remains of the fatty glands.

The outer margin of the lower lid.

f The external and thicker lip of this margin.

g The internal and thinner lip of the same.

h The furrow between these lips.

f g The place where the cuticle of the face passes into the conjunctiva of the upper lid.

y A triangular furrow between each lid and the conjunctiva.

k l m n The membrana conjunctiva of the lower lid,

g k where it lines the cartilage and sebaceous glands;

k l Where it adheres to the lower part of the sphincter palpebrarum by means of cellular membrane;

VIEWS OF THE EYE.—NUMBER II.

l Where it is doubled on itself;

n m Where it invests the membrana sclerotica of the bulb.

n l The inferior bursa of the membrana conjunctiva.

(*k*) The space between its two laminæ, of which one covers the bulb, the other the lower eyelid. This space is marked by a thickish black line, because these two laminæ touch each other.

p The lower eyelash.

q A little space of a rhomboid figure between the eyelashes and the edges of the lids.

1 11 Muscles of the eye.

1 2 3 Elevator palpebræ superioris.

1 Its posterior extremity, immoveable and tendinous, which adheres to the periorbita.

2 Its anterior extremity, moveable and tendinous, which is extended over the cartilage of the upper eyelid, and disappears in its edge.

3 Its flesh.

4 5 6 The musculus rectus superior of the bulb.

4 Its posterior extremity, immoveable, tendinous, which adheres to the sheath of the optic nerve.

5 Its anterior extremity, moveable, tendinous, which ends in the sclerotic membrane of the bulb (28).

6 Its flesh.

7 8 9 The musculus rectus inferior of the bulb.

7 Its posterior extremity, immoveable, tendinous, which adheres to the sheath of the optic nerve more backwards than the extremity of the rectus superior.

8 The flesh of this muscle.

9 Its anterior extremity moveable, tendinous, which terminates near *m* in the sclerotic membrane of the bulb.

10 The tendon of the musculus obliquus superior of the bulb.

11 The flesh of the musculus obliquus inferior of the bulb.

12 18 The optic nerve bent in the form of an s, and partly covered with fat.

12 13 The sheath of the optic nerve, arising from the membrane of the brain. 12 The inner lamina of this sheath; 13 its external lamina.

14 The choroid membrane of the optic nerve.

15 The fibrous substance of the optic nerve exposed.

16 A part of the optic nerve passing through the bony canal where it appears as if depressed from above to below.

17 The cylindric part of the optic nerve.

18 The extremity of the optic nerve contracted, and lost in the sclerotica.

The fibrous structure of the optic nerve, the passage of the central artery and the manner in which the membranes of the optic nerve adhere to the bulb, is also shewn in this figure.

19 20 The blood-vessels and nerves of the eye.

19 The principal trunk of the ophthalmic artery.

20 The principal trunk of the ophthalmic vein which surrounds the bulb.

21 The first twigs of the branch of the fifth pair of nerves.

22 43 The bulb of the eye.

22 22 The axis of the bulb.

23 The greatest transverse diameter of the bulb.

24 25 26. The membrana cornea. 24 24 The dissected surface of the cornea which shews its true thickness, convexity, and manner of cohesion with the sclerotica. 25 26, 26 The space between the cornea and the lens, which is divided into the anterior chamber 25, and the posterior chamber 26 26.

24 *t* and 24 *r* A double groove between the cornea and sclerotica.

27 28 29 The sclerotic membrane of the bulb. 27 The anterior extremity of the sclerotica, which passes into the cornea and has a double groove within, on which the gangliform ring of the choroid coat rests firmly; 28 a very thin portion of the sclerotica covered with the tendons of the recti muscles.

30 The pigmentum nigrum between the choroid and sclerotic coats.

31 37 The choroid membrane. 32 33 The gangliform ring of the choroid membrane, which principally adheres to the sclerotica. 32 The basis, or thick part of the ring, which is terminated towards the cavity of the cornea by a round ending. 33 The top of the ring. 34 35 The corpus ciliare. 34 The anterior or thickish extremity of the fold. 35 The posterior extremity of the same fold, gradually becoming thinner towards its termination.

34 39 39 Part of the choroid membrane not covered by the retina, which shines through the vitreous humour.

39 46 39 A part of the choroid which in adults is generally more shining.

36 37 The iris 36 36. The margin to which the iris is affixed and appears like a continuation of the ring and ciliary body.

37 26 26 37 The pupillary margin of the iris, which forms half the pupil of the iris.

38 Pigmentum nigrum between the choroid and retina.

39 40 41 The membrana retina. 39 39 The anterior extremity of the retina expressed by the line 39 40 39 40 The medullary substance of the retina. 41 The choroid, in which the medullary substance is in a manner inlaid.

39 41 23 22 46 39 The internal surface of the retina which shines through the vitreous humour.

42 46 The lens. 43 43 The long diameter of the lens. 44 45 The short diameter. 42 44 43 The anterior convexity. 42 45 43 The posterior. 46 26 The capsule of the lens.

34 42 The distance of the lens from the ciliary body.

Views of the internal Parts of the Ear.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

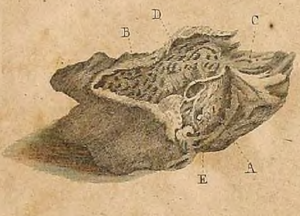


Fig. 5.

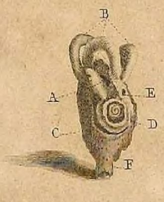


Fig. 6.

Fig. 7.

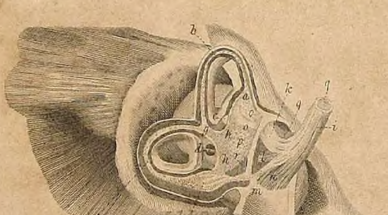
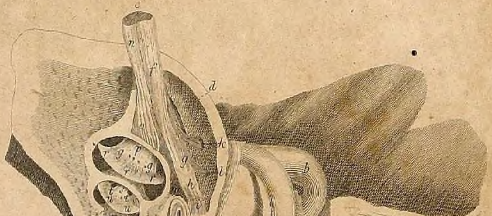


Fig. 8.



Published for Longman & Rees Feb.y 1. 1803.

Joseph Skelton sculp.

DESCRIPTION OF THE INTERNAL PARTS OF THE EAR.

In this Plate the Anatomy of the Bones of the Human Ear is explained.

FIG. 1.

We have here the bones which form the chain betwixt the membrane of the tympanum and the membrane of the foramen ovale.

A The malleus.
B The incus.
C The stapes.
D The os orbiculare which forms the articulation betwixt the incus and stapes.

FIG. 2.

In this figure we have a view of the inside of the temporal bone, the petrous portion being broken away: we see the cavity of the tympanum, the membrane of the tympanum, and the chain of bones.

A The groove for the lodgement of the lateral sinus.
B The hole in the sphenoid bone for the passage of the artery of the dura mater.
C The petrous portion of the temporal bone.
D The irregular cavity of the tympanum laid open, by the breaking off of the petrous part of the temporal bone.
E The membrane of the tympanum closing the bottom of the meatus auditorius externus.
F The malleus, the long handle of which is seen to be attached to the membrane of the tympanum E.
G The incus, united to the great head of the malleus F.
H The stapes, which is seen to be articulated with the long extremity of the incus through the intervention of the os orbiculare.

FIG. 3 and 4.

Show the division of the temporal bone into the squamous and petrous portions.

FIG. 3.

A The squamous part of the temporal bone.
B The circular ring, which forms the meatus auditorius externus in the child.
C The zigomatic process.
D Cells, which afterwards enlarge into those of the mastoid process.

FIG. 4.

The petrous portion of the bone, with a view of the tympanum.

A The cavity of the tympanum.
B Mastoid cells.
C Eustachian tube.
D The foramen ovale, into which the stapes (see fig. 1. C. and fig. 2. H.) is lodged.
E The more irregular opening of the foramen rotundum.

FIG. 5.

Represents the labyrinth of the human ear, with the solid bone which surrounds it cut away.

A The foramen ovale.
B The three semicircular canals.
C The scala vestibuli.
D The cochlea.
E The tube, which conducts the portio dura of the seventh pair through the temporal bone.
F The anterior part of the petrous portion of the temporal bone.

FIG. 6.

Explains the manner in which the lamina spiralis divides the cochlea into two scalæ, and the opening of the one scala into the common cavity of the vestibule, and the termination of the other in the foramen rotundum.

A The bone broken, so as to show the cavity of the tympanum.
B The foramen ovale.
C Cellular structure of the bone.
D The foramen rotundum.
E One of the scalæ of the cochlea, which is seen to terminate in the foramen rotundum.
F The other scala, which is seen to communicate with the vestibule.

These two figures are taken from the beautiful plates of Professor Scarpa, and illustrate the soft parts contained within the osseous labyrinth, and the distribution of the nerves.

FIG. 7.

There is seen the membranous semicircular canals, their common belly, and the distribution of the acustic or auditory nerve.

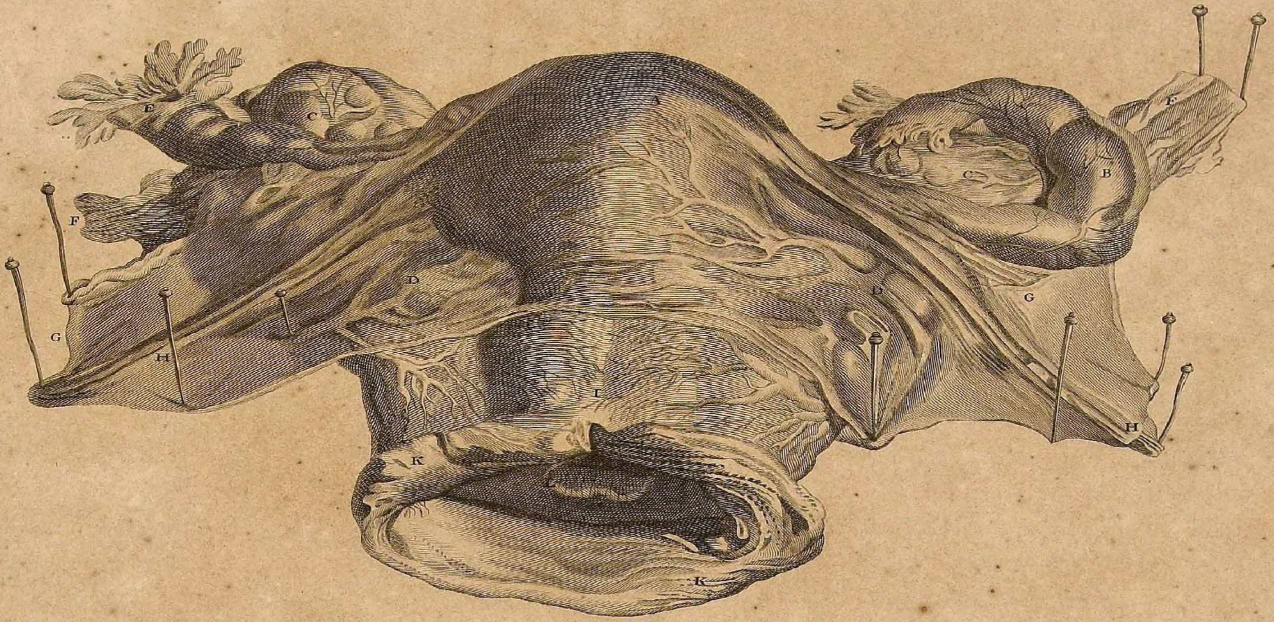
a The ampulla of the superior membranous semicircular canal.
b The superior membranous semicircular canal.
c The ampulla of the external membranous canal.
d The other extremity of the external canal.
e The ampulla of the posterior membranous semicircular canal.
f The posterior semicircular canal.
g The common canal of the superior and posterior canal.
h.h The sac common to the membranous semicircular canals, viz. the alveus communis.
i The body or trunk of the acustic nerve.
k The larger branch of the nerve.
l A filament of the nerve to the sacculus vestibuli.
m The lesser branch of the acustic nerve.
n A filament of the cochlea.
o.o Filaments of the larger branch of the acustic nerve to the ampullæ of the superior and exterior semicircular canals.
p The expansion of the nerve on the common alveus.
q.q Nervus communicans faciei, or portio dura.
r The beginning of the spiral lamina of the cochlea.
s The osseous canal of the nerve, which forms part of the foramen auditorius internus.
t The cochlea.

FIG. 8.

The distribution of the nerve in the cochlea seen by a section of the internal auditory canal and cochlea.

a The superior osseous semicircular canal.
b The posterior osseous semicircular canal.
c The external osseous semicircular canal.
d The bottom of the great foramen auditorius internus.
e The trunk of the great acustic nerve.
f The anterior fasciculus of the acustic nerve.
g A plexiform twisting in the anterior fasciculus of the nerve.
h A gangliform swelling of the nerve.
i The greater branch of the anterior fasciculus.
k The lesser branch.
l A filament of the anterior fasciculus to the hemispherical vesicle of the vestibule.
m A branch to the beginning of the lamina spiralis.
n The posterior fasciculus of the acustic nerve.
o The filaments about to enter the tractus spiralis foraminulosus.
p These nerves seen upon the modiolus.
q.q The filaments of the nerve passing forward betwixt the two planes of the lamina spiralis.
r.r Their termination on the soft part of the lamina spiralis.
s The nerves expanded on the second gyrus of the modiolus.
t.t.u.u Their further distribution on the lamina spiralis.
v.v The infundibulum.
x.y The last turn and termination of the lamina spiralis in the infundibulum.

View of the Uterus.



London, Published by J. Johnson, March 1. 1808.

VIEW OF THE UTERUS.

A Fundus uteri.
B Left Fallopian tube with its foliated expansion.
C The ovaria.
D Blood-vessels.
E Right Fallopian tube.
F Blood vessels of the ovaria.

G The broad ligaments of the uterus.
H The round ligaments.
I The neck of the uterus.
K The vagina.
L The mouth of the uterus.

Gravid uterus at the full period

Basire Sc.

London Published by J. Johnson March 1.1808

GRAVID UTERUS AT THE FULL PERIOD.

a The great veins of the womb, to which, internally, the placenta was attached.

b Other large veins leading to the same part.

c Uterine arteries, to the left of which, in the centre of the tumour, is the part opposite the navel of the mother.

The os pubis, on each side, is cut through, near its union with the os ilium, and a small branch of each ischium divided, near its conjunction with the os pubis. By this means, the whole contents of the pelvis are seen. The meatus urinarius is very conspicuous. Immediately below it is the beginning of the vagina, and below the transverse shaded line is the inner stratum of the sphincter ani. The round ligaments, the ovaria, the Fallopian tubes, and the group of spermatic vessels approaching, on each side, the womb, need not be particularly pointed out.

The Situation of the Fœtus in utero

Basire Sc.

London Published by J. Johnson March 1. 1808.

THE SITUATION OF THE FŒTUS IN UTERO.

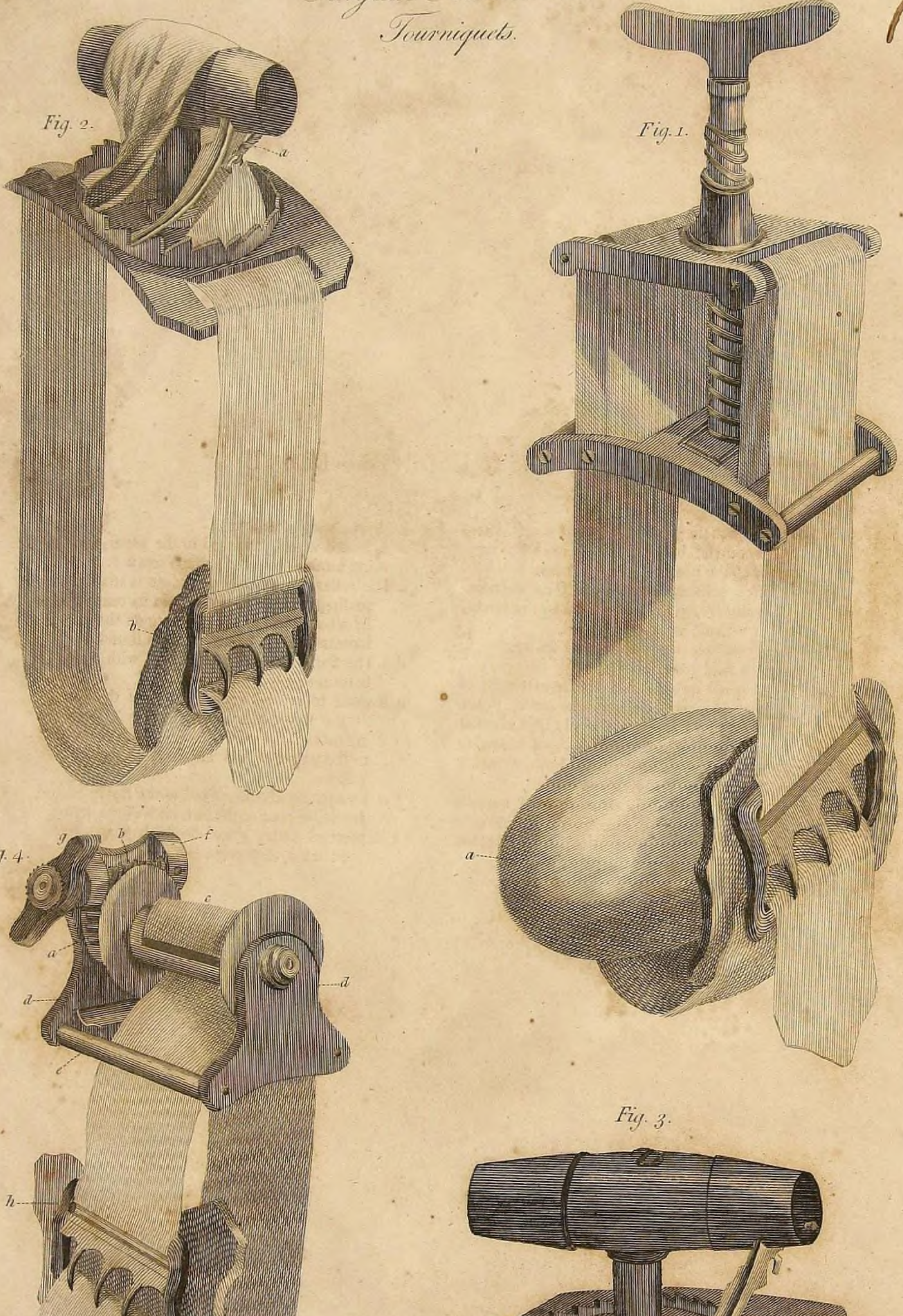
a The fundus uteri.

b The membranes cut through.

c The intestines pushed by the distending uterus, on one side.

On each side of the uterus, at the greatest distance from it, are the Fallopian tubes. The projecting body nearest the uterus, on the left side, is the left ovary, and the tumour, on its lower part, the corpus luteum. Between *b* and *d* the lobulated appearance of the placenta may be observed. The letters were omitted to prevent disfiguring the plate.

Surgical Instruments.
Tourniquets.



London Published by J. Johnson March 1.1808.

SURGICAL INSTRUMENTS.—PLATE I.

Fig. 1. The tourniquet, originally invented by Petit, and improved by Freake. It has wholly superseded the use of the old instrument, which requires constantly the hand of an assistant. The pressure, in this, is secured by the screw, and it is made of brass.

a The cushion which presses on the artery.

2. Savigny's field tourniquet.

a A small spiral spring, fixed to one extremity of the handle, connected, at the other, to the catch, which it keeps constantly on a circular ratch, on the top of a flat piece of brass, to be applied immediately on the limb, retaining the bandage to any given stricture.

b The compress, which is made of cork covered with leather. This instrument differs only from the old one in the ratch, which supplies the necessity of an assistant.

3. The upper part separate.

Fig. 4. *Rymer's* sea tourniquet.

a A dented wheel, attached to the roller, receiving motion from the endless screw *b*.

c The roller, to which the bandage is attached by passing through an opening in its centre, and by whose motion the stricture on the limb is increased as the bandage passes round it.

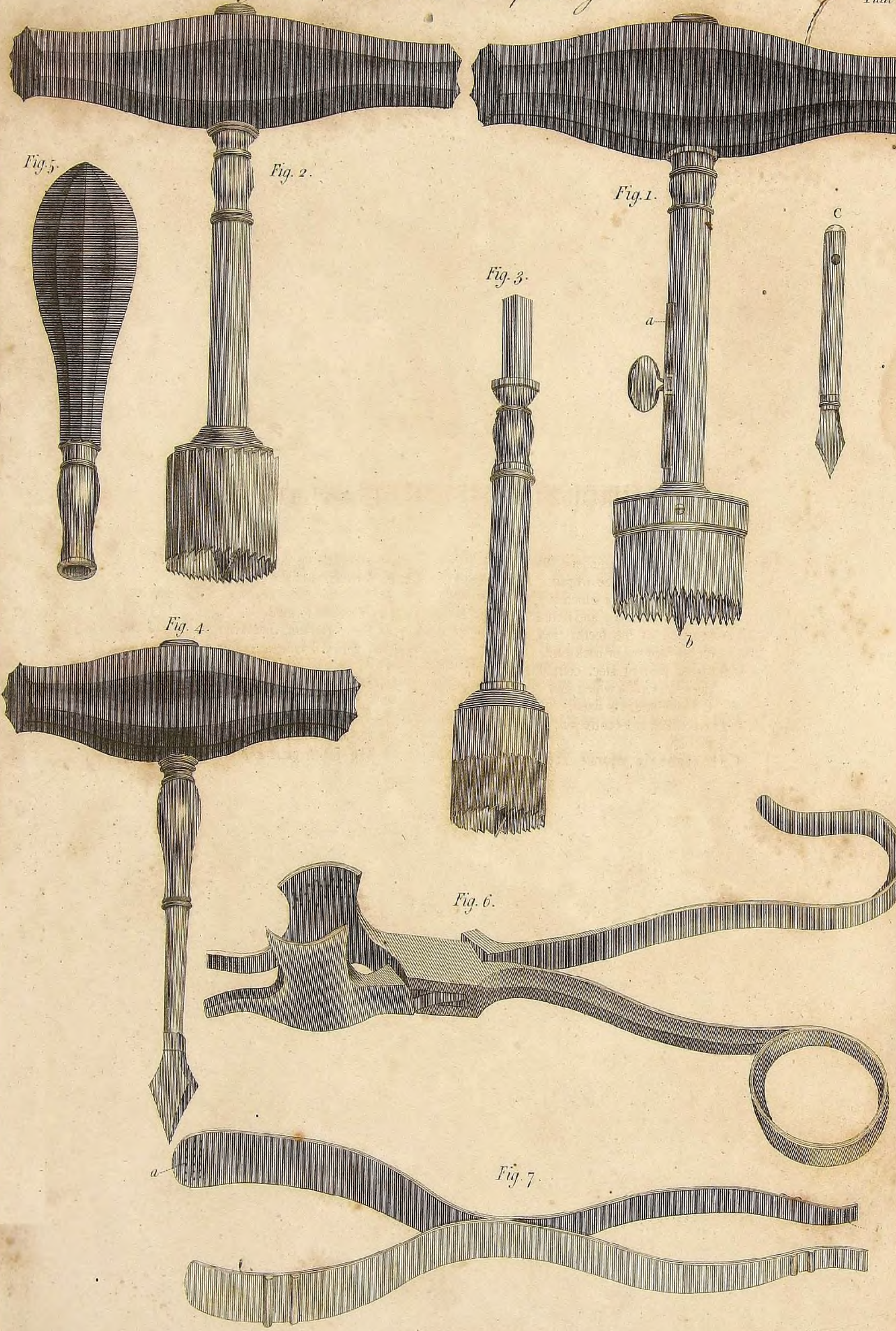
d d The frame of the instrument, with a strong bottom cast together in brass.

e A small roller, between which and the bottom of the frame the bandage passes. There is another on the opposite side, and these add to the power of the instrument by acting as pulleys.

f g Two strong cheeks, fixed to the inside of the frame, to receive the two ends of the screw.

h A piece of leather sewed on the bandage, under the buckle, to prevent laceration.

Surgical Instruments. Trepanning Instruments. Plate II.



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SURGICAL INSTRUMENTS.—PLATE II.

Fig. 1. The trephine, the modern instrument, which has superseded the trepan. It is divested of its lateral teeth, by which it works more easily and expeditiously; and from the perpendicular situation of the teeth, they act whether it moves forward or backward.

a A spring plate of steel confining or regulating the centre pin, which may be removed when the instrument is fixed.

b The point of the centre pin, at its extreme projection.

c The centre pin separate, the form of its point precluding the use of a perforator.

Fig. 2. A trephine of the old construction.

3. A smaller trephine, with the lateral teeth differently formed.

4. The perforator, necessary in the old trephine, which is sometimes preferred.

5. The key.

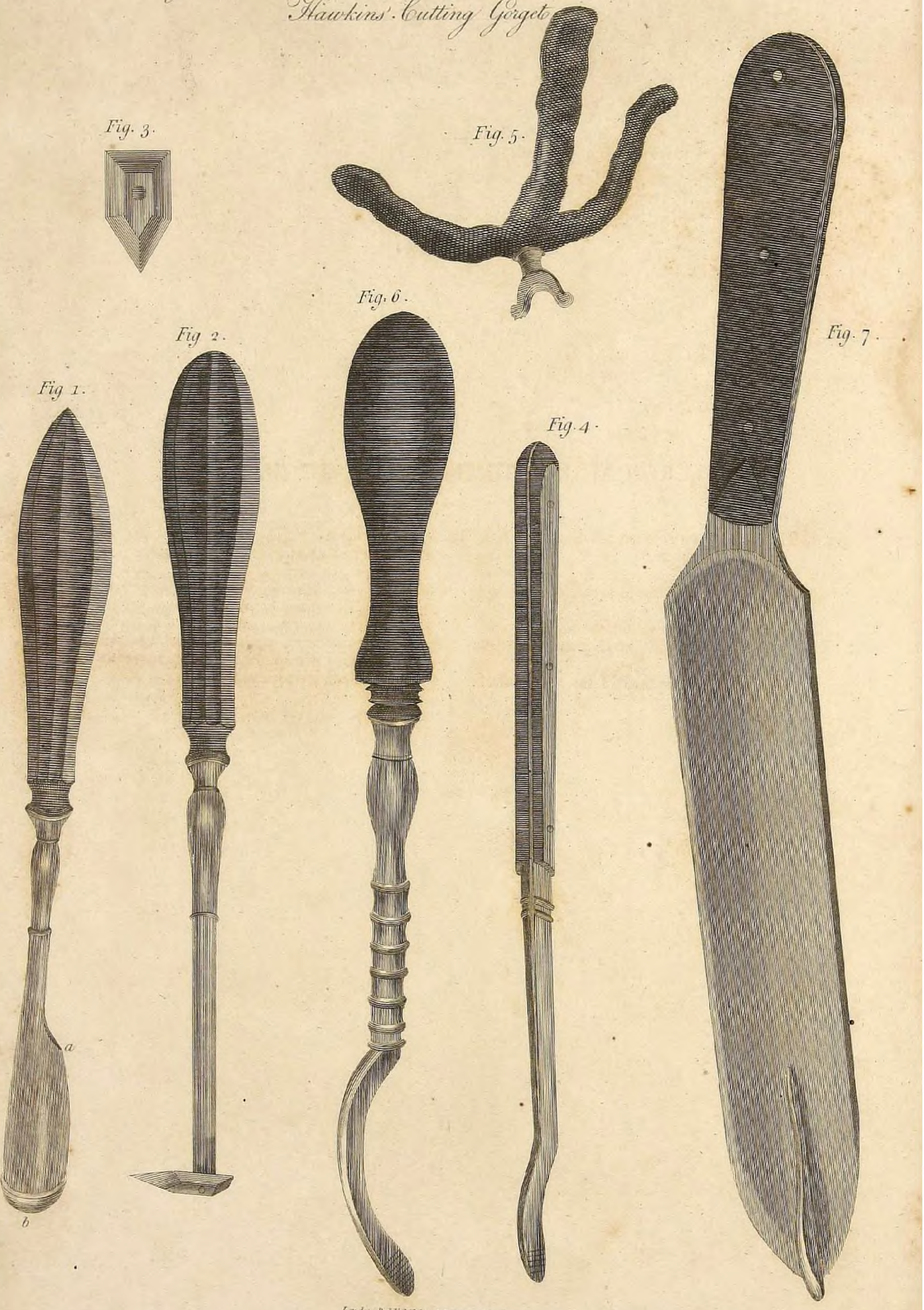
6. Forceps for extracting the circular piece of bone or any ragged edges.

7. Spring forceps for the same purpose.

a The larger extremity.

b The smaller extremity.

Surgical Instruments. Trepanning continued, with Hawkins' Cutting Gorget



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SURGICAL INSTRUMENTS.—PLATE III.

Fig. 1. The LENTICULAR, to remove the ragged edges left by the trephine.

a The edge.

b The shallow cup, intended to receive the scrapings.

2. The RASPATORY, used for the same purpose, and sometimes employed to promote exfoliation.

3. A front view of the head of the same instrument.

Fig. 4. An elevator.

5. A stand for the ELEVATOR, which acts as the fulcrum of a lever.

6. An improved elevator, whose circular groove enables the operator to vary the power.

7. HAWKINS' CUTTING GORGET. The concavity of this instrument is diminished, its right and cutting side broader and flatter, to render the incision more lateral.

Surgical Instruments. Lithotomy.

London Published by J. Johnson, March 1. 1808.

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SURGICAL INSTRUMENTS.—PLATE IV.

Fig. 1. M. CLINES' CUTTING GORGET, very generally used.

a The beak forming an elliptical arch to prevent the necessity of the operator lowering his hand.

b The cutting edge forming an angle with the beak.

Fig. 2. *Curved forceps.*

3. *Strait forceps.*

4. Mr. John Hunter's *scalpel.*

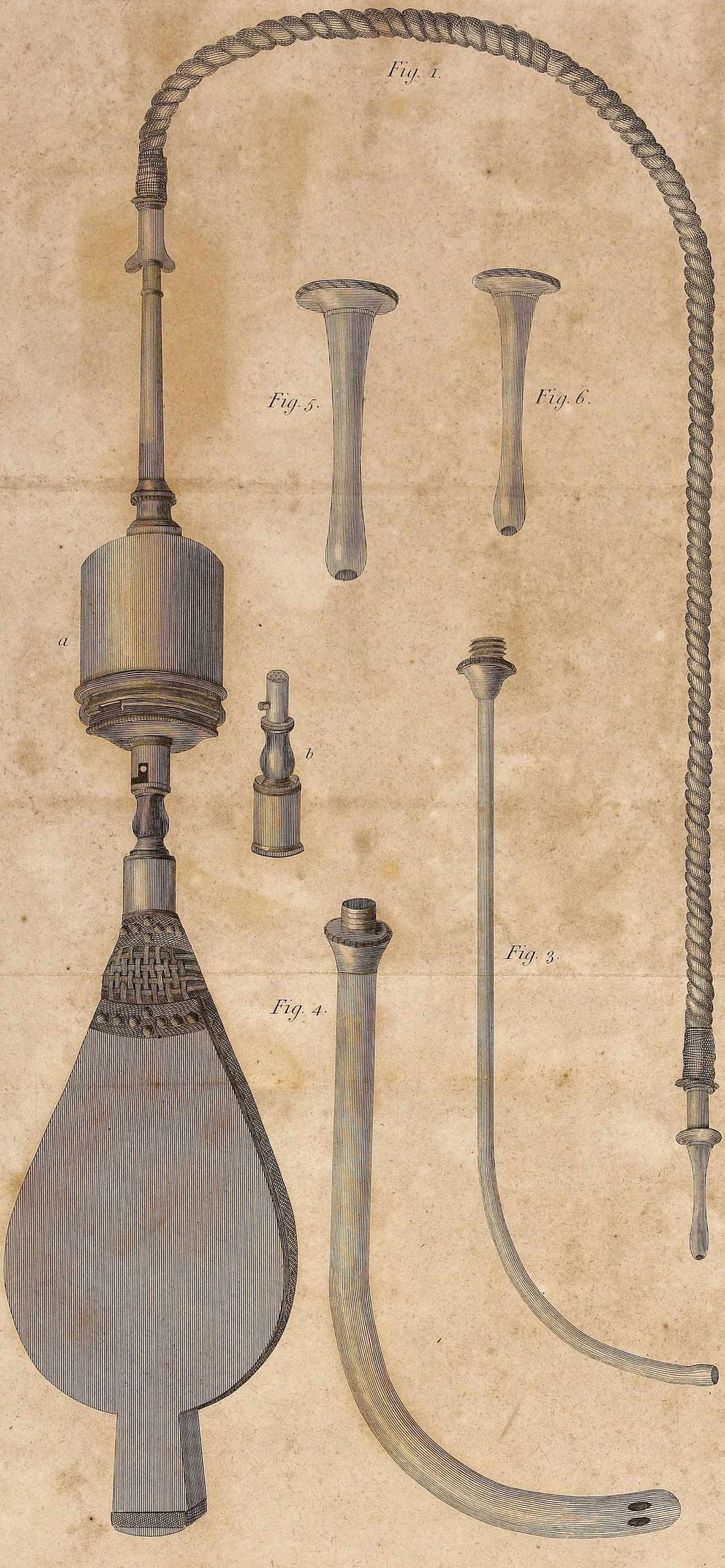

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PLATE V.—*(The number omitted on the Plate.)*

SURGICAL INSTRUMENTS.—BELLOWS, &c.

Fig. 1. The bellows, with the flexible tube annexed, for throwing up the smoke of tobacco into the rectum, chiefly employed in resuscitation, but which may be useful in cases of hernia.

a The brass box containing the lighted tobacco, the smoke of which is impelled by the bellows.

b The nozzle of the bellows, with a grating to prevent the sparks from passing into the rectum.

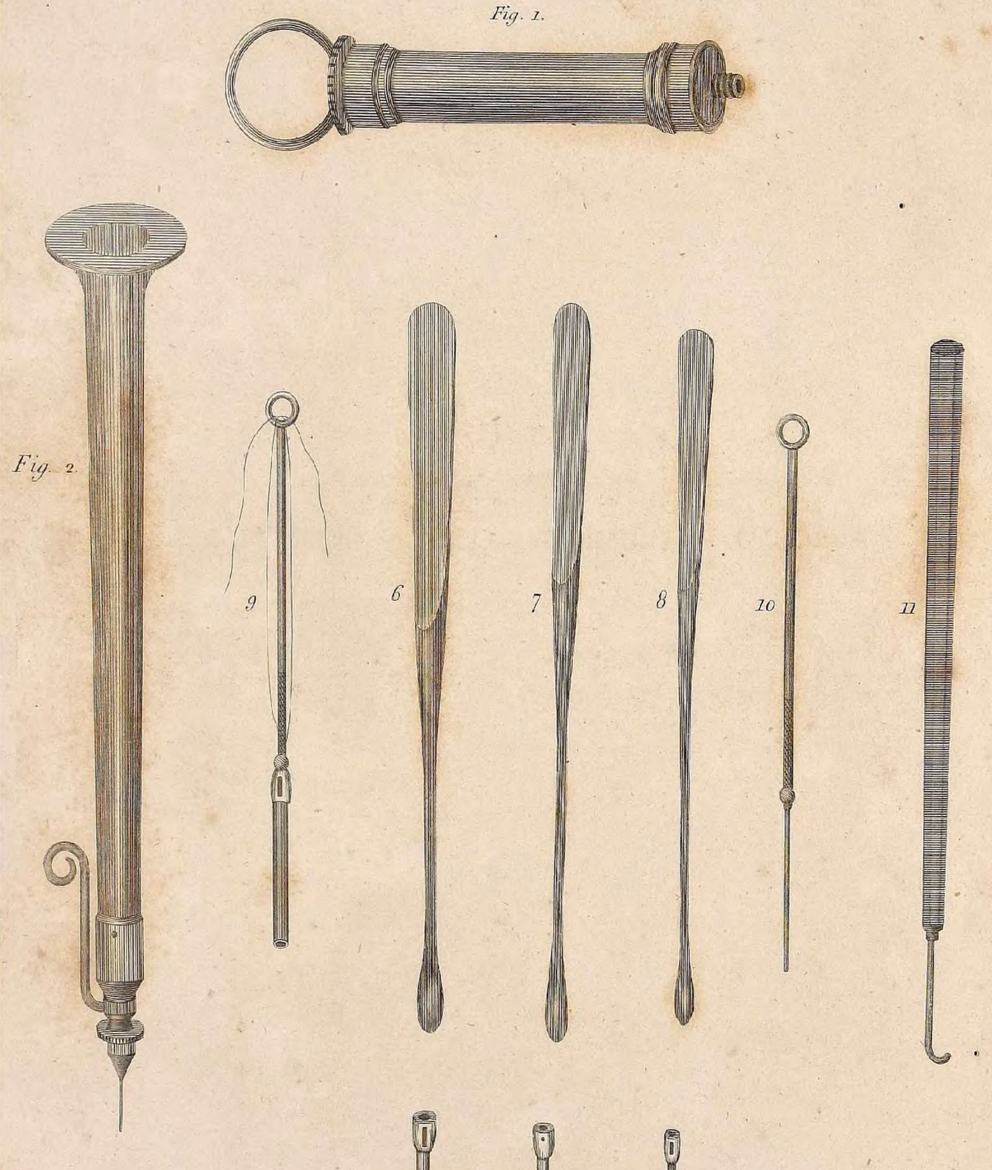
2. An instrument for inflating the lungs.

a The extremity, to receive the wooden mouth-piece (*b*), if the breath of a healthy person be employed. To the other extremity (*c*) may be applied the pipe (*d*), which fills up one nostril, or the extremity (*a*) of the silver tube (Fig. 3.), which passes beyond the glottis.

Fig. 4. A larger tube for the same purpose, supposed to be more convenient.

5. and 6. Two ivory pipes for the rectum, to be attached to the extremity of Fig. 1.

Surgical Instruments.



London Published by J. Johnson March 1. 1808.

PLATE VI.—*(The number omitted on the Plate.)*

SURGICAL INSTRUMENTS.—CUTTING GORGETS, &c.

Fig. 1. Canula for males.
2. Canula for females.
3. Mr. Hunter's instrument for introducing caustic into the urethra.
4. and 5. The cutting gorgets on the old and new construction. In the former, it appears that the flat side is opposed to the part to be divided rather than its edge, and the wound is very often a lacerated one.

Surgical Instruments.

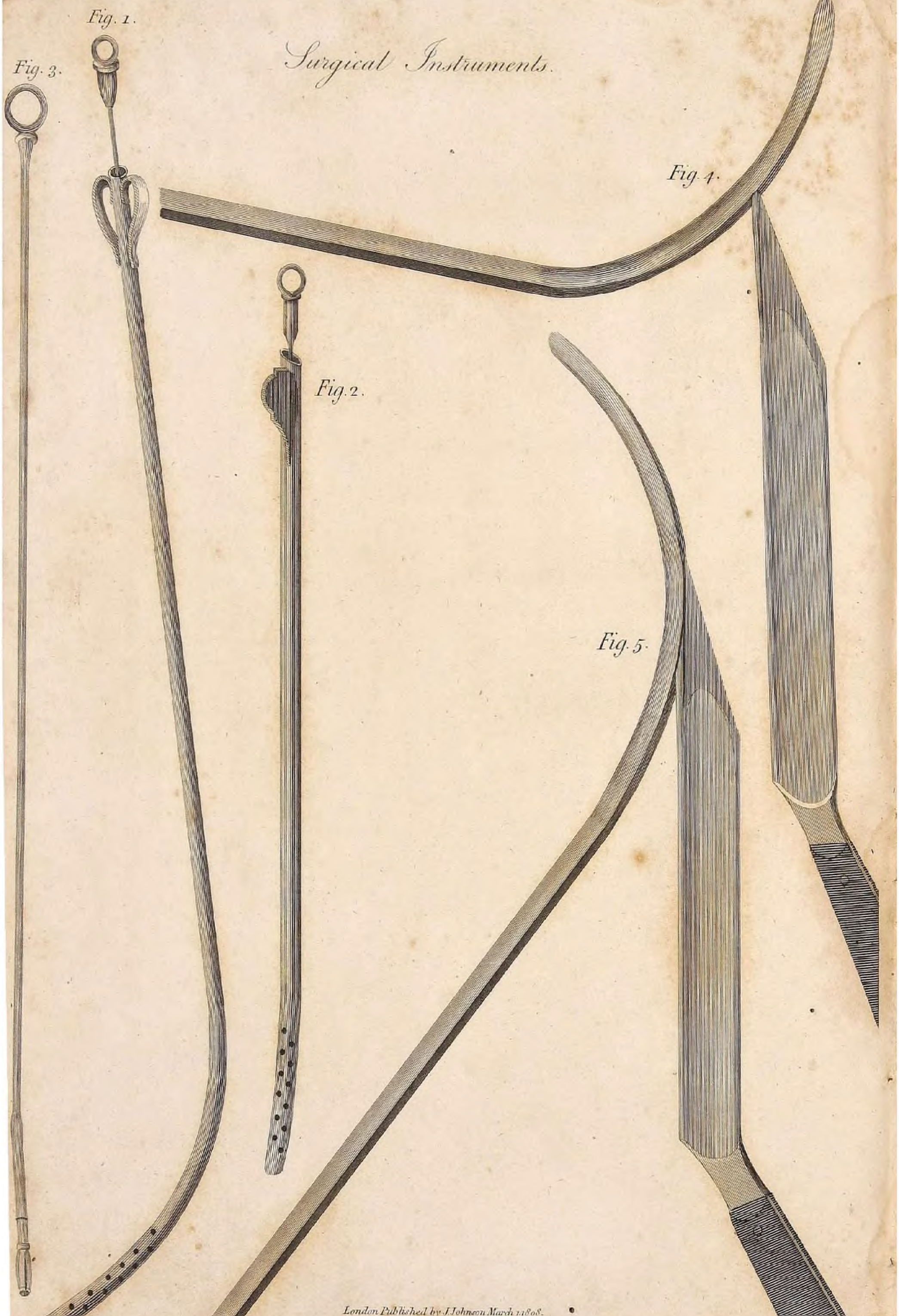


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PLATE VII.—*(The number omitted on the Plate.)*

SURGICAL INSTRUMENTS.—SYRINGE, &c.

Instruments for the Fistula, Lachrymali, &c.

Fig. 1. A silver syringe (Anell's) for injecting fluids through the puncta into the sac.

a A very fine strait gold tube screwed to the inferior extremity.

b A curved tube, which is often more convenient.

c A conical end to be fixed to the syringe, for the injection of pure water through the lead tubes after their introduction into the duct, to ascertain the propriety of their situation.

2. A glass tube with a stop cock and a very fine steel pipe for injecting quicksilver.

3. 4. 5. The lead tubes of Mr. Wathen, introduced to form an artificial channel for the tears. They have a longitudinal opening on one side of their thickest extremity, and on the opposite (fig. 4.) a small hole through which the thread passes, which fixes them to the styles. The superior extremity of the head should be concave, somewhat like a funnel.

6. 7. 8. Three silver probes, whose bulbous ends are of the same diameter as the heads of the respective tubes, so that by introducing one of these into the duct, the proper size of the tube may be determined.

9. The screw style with one of the tubes attached to it.

10. The style separated from the tube, to show its construction. The portion, formed as a screw, is furnished with a nut, which adjusts its length exactly to that of the tube, and which, resting on the head of the tube, resists its introduction. When this is accomplished, the style and tube are separated, by cutting the thread, withdrawing the style, and leaving the tube in its place.

11. A small blunt hook for extracting the tube.

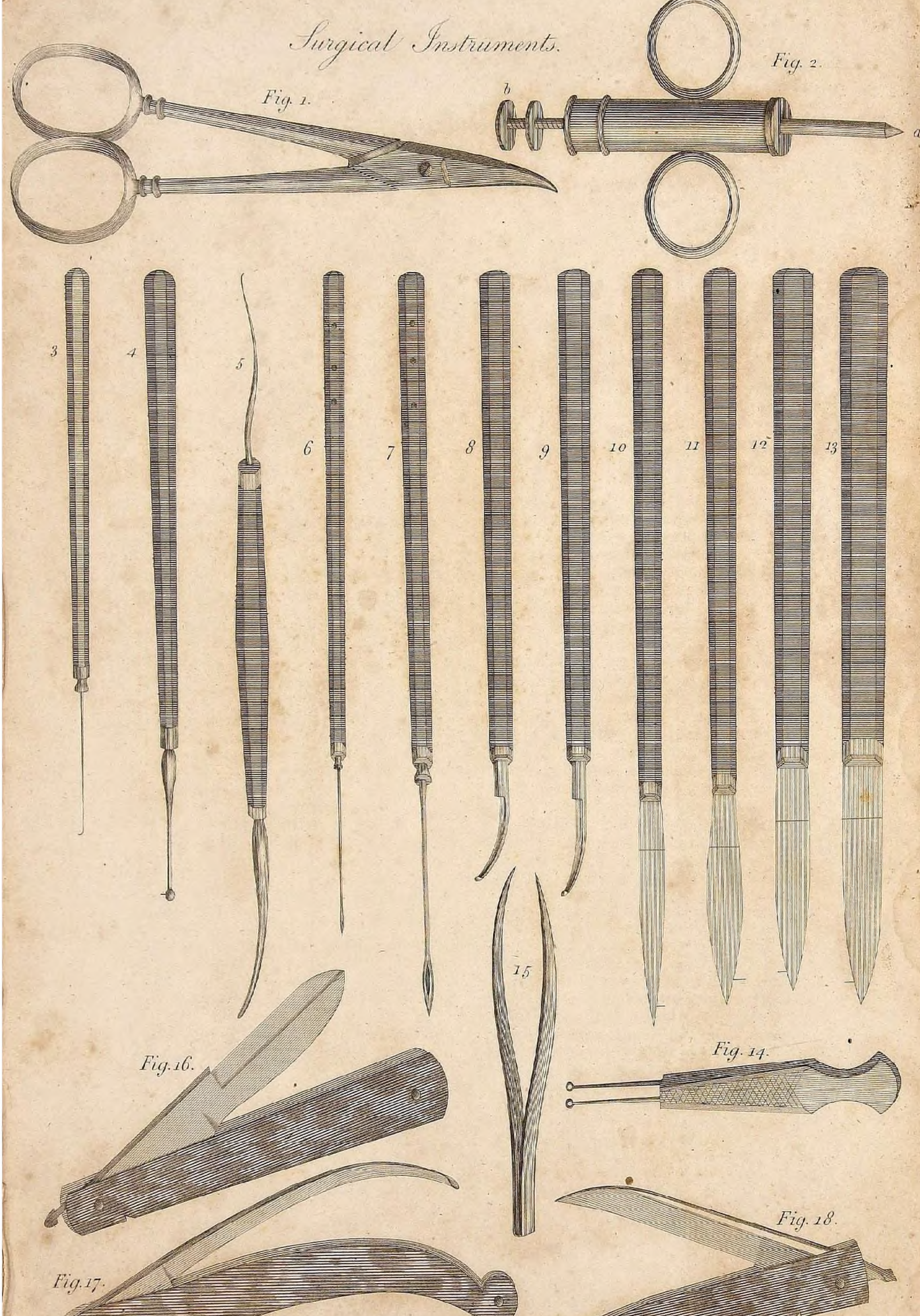
Surgical Instruments.
Fig. 1.
Fig. 2.
b
a
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Fig. 14.
Fig. 16.
Fig. 17.
Fig. 18.

PLATE VIII.—*(The number omitted on the Plate.)*

SURGICAL INSTRUMENTS.—SCISSARS, &c.

Fig. 1. A pair of thin scissars with short blades, rounded points, curved slightly on their flat surfaces for enlarging the section of the cornea, &c.

2. The cystotome of La Fayette, for wounding the capsule, which is very convenient, since, from its concealment, it cannot injure the adjacent parts. The lancet *a* is pressed forward by pressing the button *b*, and retracted by means of a spiral spring.

3. A small fine steel hook for assisting the extraction of the capsule.

4. Mr. Cline's instrument for scratching the capsule.

5. A small curved needle for scratching the capsule, and at the other end the silver curette for extracting the small remains of the crystaline.

6. Mr. Pearson's needle.

7. Mr. Earl's needle for depressing the cataract, convex on one surface and flat on the other: on the latter it has a small longitudinal roughish groove.

8, 9. Two small curved knives with blunt points for occasionally enlarging the section of the cornea.

10, 11. Baron Wenzel and professor Richter's knives. The marks show the extent of the cutting edges.

12, 13. Mr. Wathen and Mr. Phipp's knives for the section of the cornea in the extraction of the cataract.

14. Mr. Wathen's forceps for extracting the capsule of the lens. The rings are convex externally and concave within: the internal edges of the circles should unite in the most perfect contact.

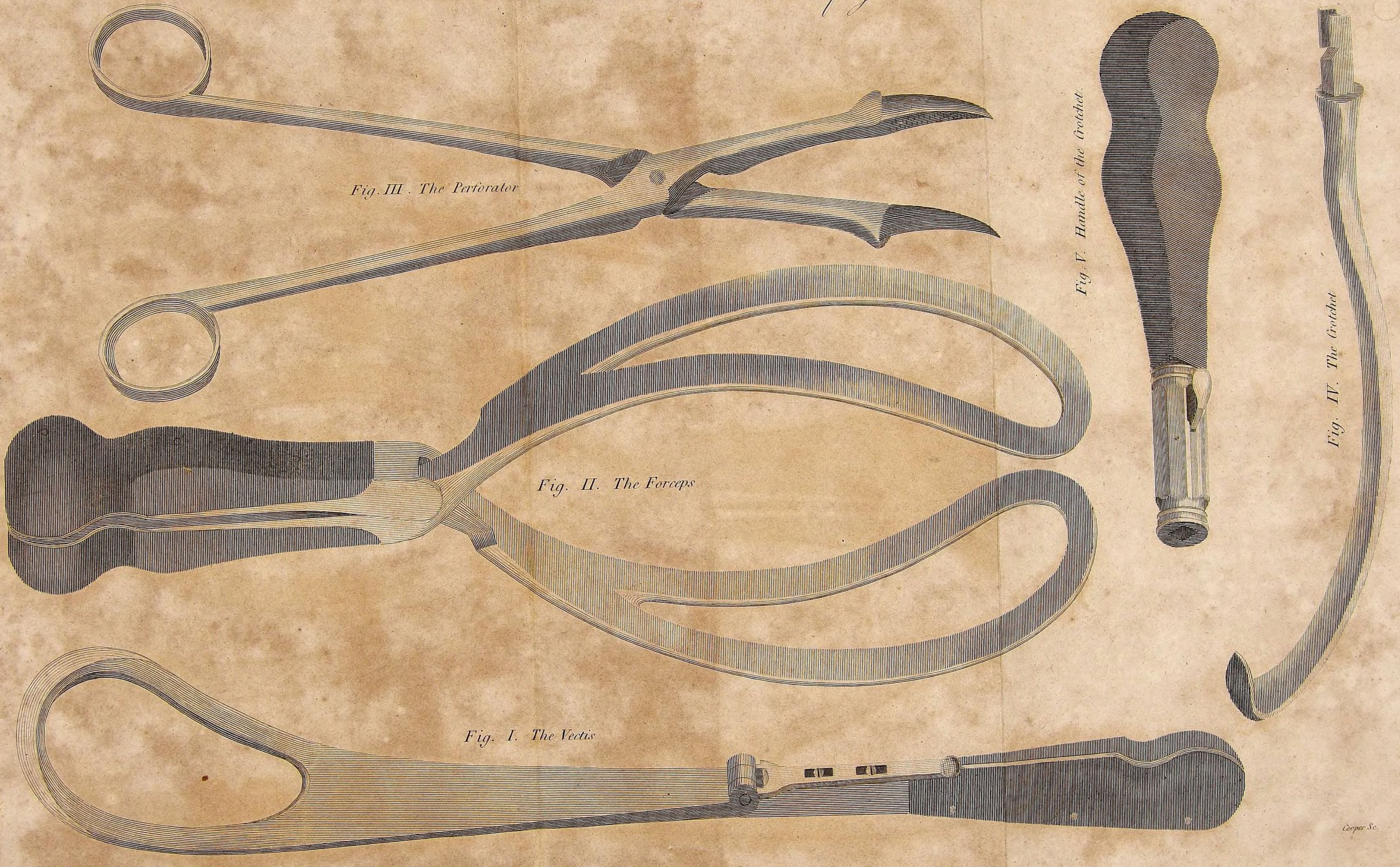
15. Baron Wenzel's forceps.

16. The full-pointed bistoury with a double edge, answering the purpose of a knife and abscess lancet.

17. A curved bistoury with a probe point, invented by Pott, for the operation of the fistula, but used for opening sinuses.

18. The strait bistoury.

Instruments used in Midwifery.



Cooper Sc.

London, Published by J. Johnson, St. Paul's Church Yard Nov. 1. 1806.